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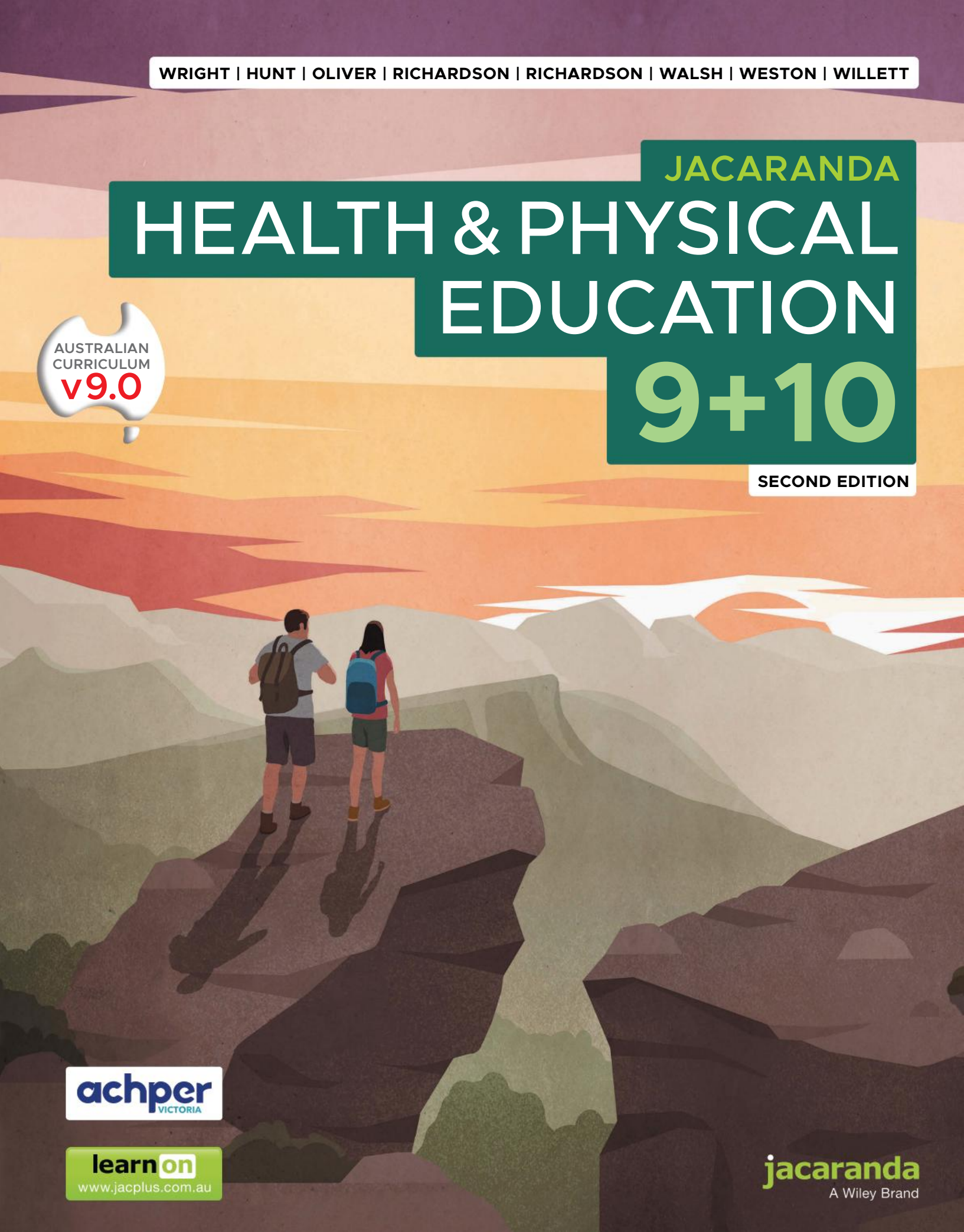
JACARANDA

HEALTH & PHYSICAL EDUCATION 9+10

AUSTRALIAN CURRICULUM v9.0

SECOND EDITION



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HEALTH & PHYSICAL EDUCATION 9+10

SECOND EDITION

PETER WRIGHT
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AUSTRALIAN CURRICULUM v9.0

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The publishers of this series acknowledge and pay their respects to Aboriginal Peoples and Torres Strait Islander Peoples as the traditional custodians of the land on which this resource was produced.

This suite of resources may include references to (including names, images, footage or voices of) people of Aboriginal and/or Torres Strait Islander heritage who are deceased. These images and references have been included to help Australian students from all cultural backgrounds develop a better understanding of Aboriginal and Torres Strait Islander Peoples' history, culture and lived experience.

It is strongly recommended that teachers examine resources on topics related to Aboriginal and/or Torres Strait Islander Cultures and Peoples to assess their suitability for their own specific class and school context. It is also recommended that teachers know and follow the guidelines laid down by the relevant educational authorities and local Elders or community advisors regarding content about all First Nations Peoples.

All activities in this resource have been written with the safety of both teacher and student in mind. Some, however, involve physical activity or the use of equipment or tools. **All due care should be taken when performing such activities.** To the maximum extent permitted by law, the authors and publisher disclaim all responsibility and liability for any injury or loss that may be sustained when completing activities described in this resource.

The publisher acknowledges ongoing discussions related to gender-based population data. At the time of publishing, there was insufficient data available to allow for the meaningful analysis of trends and patterns to broaden our discussion of demographics beyond male and female gender identification.

Contents

ACHPER foreword vi
About the authors vii
About this resource ix
Acknowledgements xvi
Understanding cognitive verbs 1

PART 1 PERSONAL, SOCIAL AND COMMUNITY HEALTH 2

1 Identity, changes and transitions 4
1.1 Overview 5
1.2 Values, beliefs and independence 6
1.3 Stereotypes, societal expectations and identity 18
1.4 Emotions and relationships 26
1.5 Identity, emotional wellbeing and mental health 40
1.6 Review 50

2 Sexuality and sexual relationships 54
2.1 Overview 55
2.2 Sexuality and gender stereotypes 56
2.3 Gender equality and respectful relationships 66
2.4 Consent 76
2.5 Challenging stereotypes and assertive communication 86
2.6 Review 94

3 Managing risks 98
3.1 Overview 99
3.2 Risk and safety 100
3.3 Personal safety practices — alcohol, smoking, vaping and illicit drugs 109
3.4 Responding to emergencies — first aid and CPR 130
3.5 Support services in the community 153
3.6 Review 164

4 Finding and using health information 168
4.1 Overview 169
4.2 Health information, services and support 170
4.3 Health, wellbeing and First Nations Australians 183
4.4 Strategies to increase personal safety 189
4.5 Review 197

5 Strategies for a healthy sustainable community 200
5.1 Overview 201
5.2 Social, cultural and economic factors that influence health and help-seeking 202
5.3 Sustainable food to improve health and wellbeing 209
5.4 Connection to Country/place and health and wellbeing 218
5.5 Promoting health and wellbeing 223
5.6 Review 232

PART 2 MOVEMENT AND PHYSICAL ACTIVITY 236

6 Proficiency of movement 238
6.1 Overview 239
6.2 Classifying skills 240
6.3 Skill acquisition 246
6.4 Factors affecting skill acquisition 250
6.5 Refining skills using biomechanics 254
6.6 Transferring, training and adapting skills 265
6.7 Appraising movement proficiency 272
6.8 Review 281

7 Participation, collaboration, teamwork and fair play 286
7.1 Overview 287
7.2 Benefits of physical activity 288
7.3 Promoting physical activity 292
7.4 Collaborating in groups or teams 298
7.5 Leadership and roles in physical activity 304
7.6 Fair play and ethics in sport 312
7.7 Review 325

8 Movement concepts and strategies 328
8.1 Overview 329
8.2 Adapting and refining movement concepts and strategies 330
8.3 Building strategic awareness 337
8.4 Review 344

9 Physical activity plans for fitness, health and wellbeing 348
9.1 Overview 349
9.2 Health and fitness 350
9.3 Physical activity for health and wellbeing benefits 354
9.4 Assessing physical activity 358
9.5 Barriers to participation in physical activity 364
9.6 Physical activity for fitness and fitness profiles 368
9.7 Training principles 375
9.8 Training methods 380
9.9 Training programs 388
9.10 Review 390

PART 3 OPTIONS

10 Understanding how the body moves online only
10.1 Overview
10.2 Systems of the body
10.3 The skeletal system
10.4 The muscular system
10.5 The cardiovascular system
10.6 The respiratory system
10.7 Review

11 Nutrition for good health online only

11.1 Overview
11.2 Food nutrients
11.3 Daily energy needs and expenditure
11.4 Factors influencing food choice
11.5 Food models for good health
11.6 Preventing diet-related diseases
11.7 Nutrition for sport and other special dietary needs
11.8 Review

Glossary 396
Index 406

ACHPER foreword

The Australian Council for Health, Physical Education and Recreation (ACPHER), Victorian Branch, Inc., is the professional and subject association for educators working in the areas of health education, physical education, outdoor education and sport. ACHPER Victoria's aim is to promote active and healthy lifestyles, and for each person to deepen their understanding of what it truly means to generate personal 'wellbeing'. ACHPER Victoria continues to support professionals and businesses in these areas through ongoing professional learning activities, resource development, advocacy and consultancy services.

It is pleasing to see in this edition of *Jacaranda Health and Physical Education 9 & 10* the inclusion of a range of new features, including Learning Intentions to help set the outcomes for the key subject area, a selection of new formative and summative assessment tasks within each chapter, and many new differentiated tasks that help activate and engage each individual learner as they work their way through the book. The wide range of activities and reliable content in the *Jacaranda Health and Physical Education* series offers support for all teachers, whatever their experience in health and physical education and in sport coaching. The authors have used their varied and rich teaching experiences to sequence the Australian Curriculum, Version 9.0 concepts and content into a structure suitable for a range of classroom realities. The breadth of the chapters and support materials and resources will ensure that students gain an in-depth knowledge related to being active and healthy, and that they are prepared for senior studies in related areas. The current health issues and inspiring examples from a range of sports appeal to teenagers and promote healthy lifestyles. The focused online and collaborative learning tasks suit the pedagogy of middle-school educators. Professional training is on hand in the use of this text.

The structure of the book reflects current, proven and relevant methodologies in teaching of the Health and Physical Education program. All students and teachers working within this program will find the *Jacaranda Health and Physical Education* series a valuable resource. At ACHPER Victoria, we are proud to continue our association with the authors and Jacaranda in the production of this text. ACHPER Victorian Branch acknowledges the contribution of the authors of these textbooks and thanks the current authors for sharing their expertise.

Greg Schneiders
General Manager, ACHPER Victoria

About the authors

Peter Wright (the coordinating author) is the Immediate Past President of ACHPER Victoria and continues to sit on the ACHPER board. He was principal at Koonung Secondary College from 2008 to 2016 and has teaching methods in Physical Education, Health Education and Geography. Peter has been actively involved in promoting and developing physical and health education for over 40 years. Peter was a member of the inaugural School Sport Victoria Board and served on the board from 2010 to 2020. He has held the key roles of VCE State Reviewer and Chief Assessor for Physical Education. In conjunction with ACHPER Victoria, Peter has coordinated the writing teams for all editions of *Jacaranda Inside & Out* and *Jacaranda Quest for Good Health & Fitness*, as well as being a contributing author to early editions of the senior school texts *Jacaranda Live It Up 1* and *Live It Up 2*.

Jade Hunt has fourteen years' experience as a Personal Development, Health and Physical Education teacher in secondary schools in New South Wales. For the past decade, she has been the Head of PDHPE at Amity College. In addition to her wealth of classroom experience, Jade is also a current HSC Senior Marker. With a passion for pedagogy, she has written a number of units of work and workbooks spanning a broad range of PDHPE topics. Moreover, Jade is a sought-after author of HSC PDHPE trial papers that are utilised by numerous schools throughout NSW, further cementing her reputation as an accomplished education professional.

Jenna Oliver is an experienced Health and Physical Education teacher who has over ten years' experience teaching at government and independent schools in Victoria. Jenna loves teaching both junior and senior HPE classes and has a reputation as an outstanding VCE HHD teacher. Jenna is passionate about developing students' health literacy and giving students the knowledge and skills they need to have agency in embracing healthy and active lives.

Stephanie Richardson has thirteen years' experience as a Health and Physical Education teacher in New South Wales and is currently teaching at Dubbo College Senior Campus. Previously involved in the writing of *Jacaranda Active Outcomes*, Stephanie enjoys the challenge of creating engaging content for students and teachers.

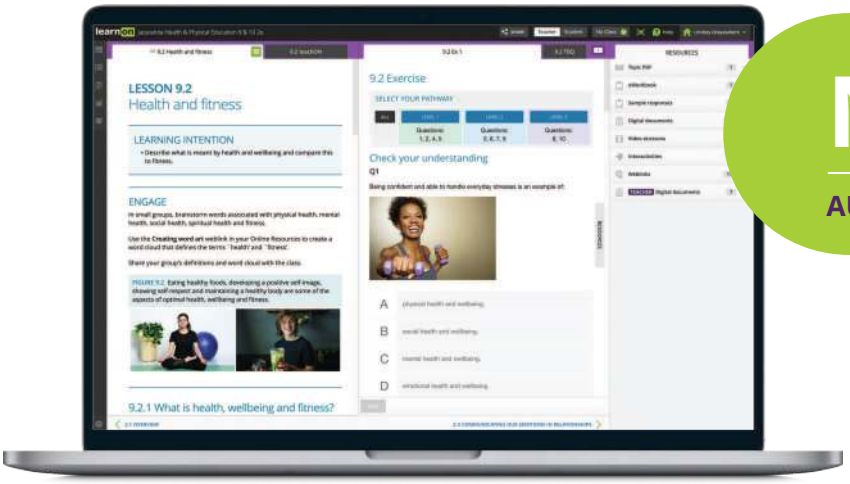
Wade Richardson has thirteen years' experience as a PDHPE teacher in primary and secondary schools in New South Wales. Currently the Head of PDHPE at Macquarie Anglican Grammar, he has written teacher resources for *Jacaranda Active Outcomes*, has written Preliminary and HSC exams for the PDHPE Teachers' Association, and is an experienced HSC marker for PDHPE.

Kirsty Walsh has fifteen years' experience as a Health and Physical Education teacher in secondary schools in Victoria and South Australia. Currently the Head of Health and PE at Ballarat Clarendon College, she is a recognised VCE PE expert, having been a VCAA examiner across PE and H&HD for eight years. Kirsty has presented for the Australian Council for Health, Physical Education and Recreation (ACHPER) on a broad range of HPE topics, from middle school through to senior PE, and co-authored the *Jacaranda Live It Up* series for the VCE PE course.

Kim Weston has taught Health and Human Development in government and independent secondary schools in Victoria since the inception of the subject. She has been active in curriculum development through the writing of texts, study guides and sample exams, and presentation of student revision sessions for a range of organisations. Formerly the Head of Home Economics and Hospitality at Methodist Ladies College, she was recognised as an exemplary teacher with extensive experience in Health curriculum and assessment procedures. Kim is currently working as a curriculum consultant and author.

Kym Willett has over twenty-five years' experience as a Health and Physical Education teacher in secondary schools in Victoria, New South Wales and Western Australia. Kym teaches both junior and senior courses. She has held a range of roles including PDHPE curriculum consultant, working with schools to develop quality teaching programs, and lead VCE assessor, and has delivered many professional development programs to both students and teachers. Kym has also worked extensively with pre-service teachers, enthusiastically coaching the next generation of HPE teachers.

About this resource



NEW FOR

AUSTRALIAN CURRICULUM V9.0

JACARANDA

HEALTH & PE 9+10 SECOND EDITION

Developed by teachers for students

Tried, tested and trusted. Every lesson in the new *Jacaranda Health and PE series* contains a strengths-based and practical approach to support teachers and help students lead healthy and active lives.

Because both what and how students learn matter

Learning is personal

Whether students need a challenge or a helping hand, you'll find what you need to create engaging lessons.

Whether in class or at home, students can access carefully scaffolded lessons, with engaging practical activities and interactive content. Automatically marked, differentiated question sets are all supported by detailed sample responses — so students can get unstuck and progress!

Learning is effortful

Learning happens when students push themselves. With learnON, Australia's most powerful online learning platform, students can challenge themselves, build confidence and ultimately achieve success.

Learning is rewarding

Through real-time results data, students can track and monitor their own progress and easily identify areas of strength and weakness.

And for teachers, Learning Analytics provide valuable insights to support student growth and drive informed intervention strategies.

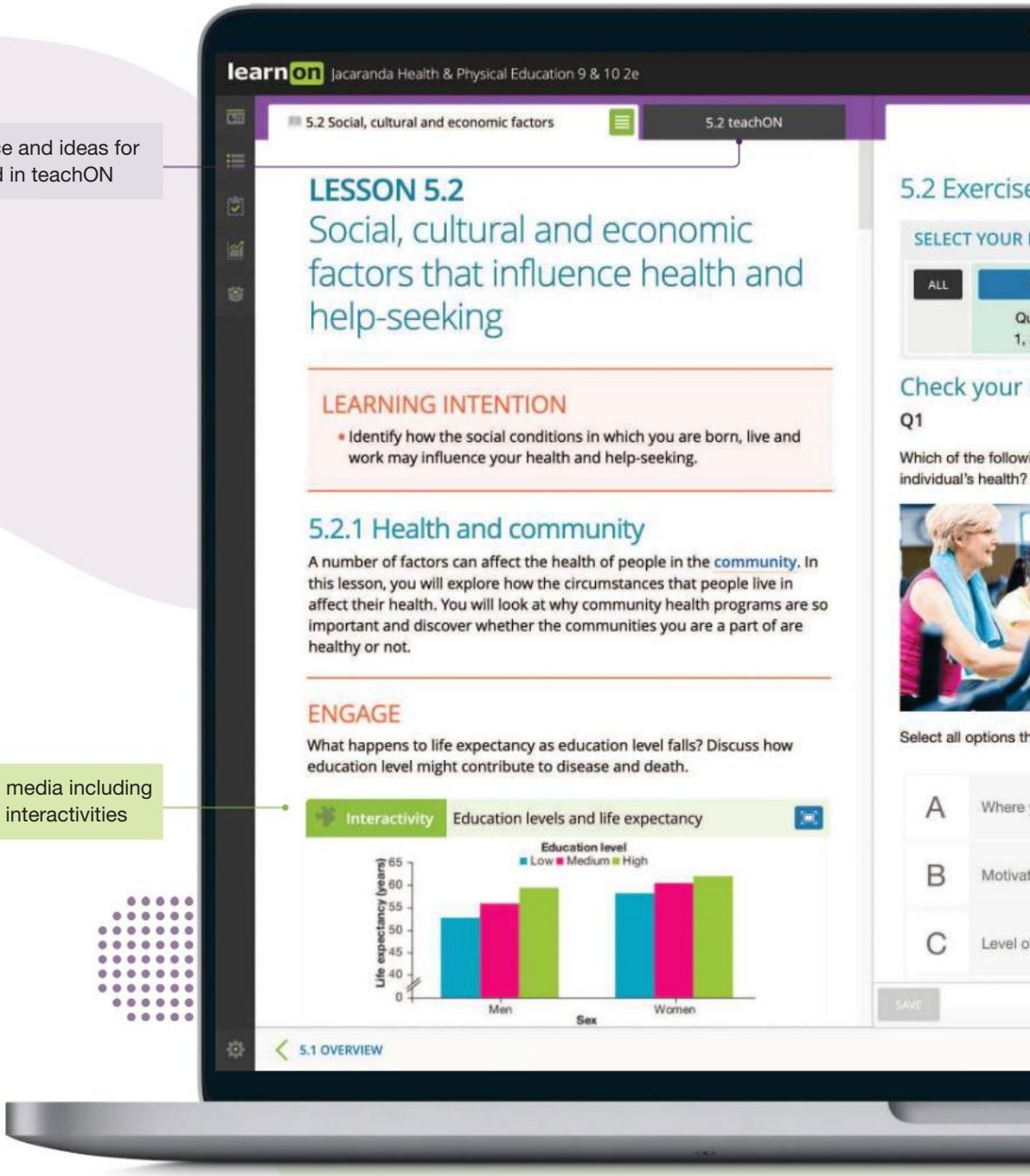
Learn online with Australia's most

Everything you need for each of your lessons in one simple view

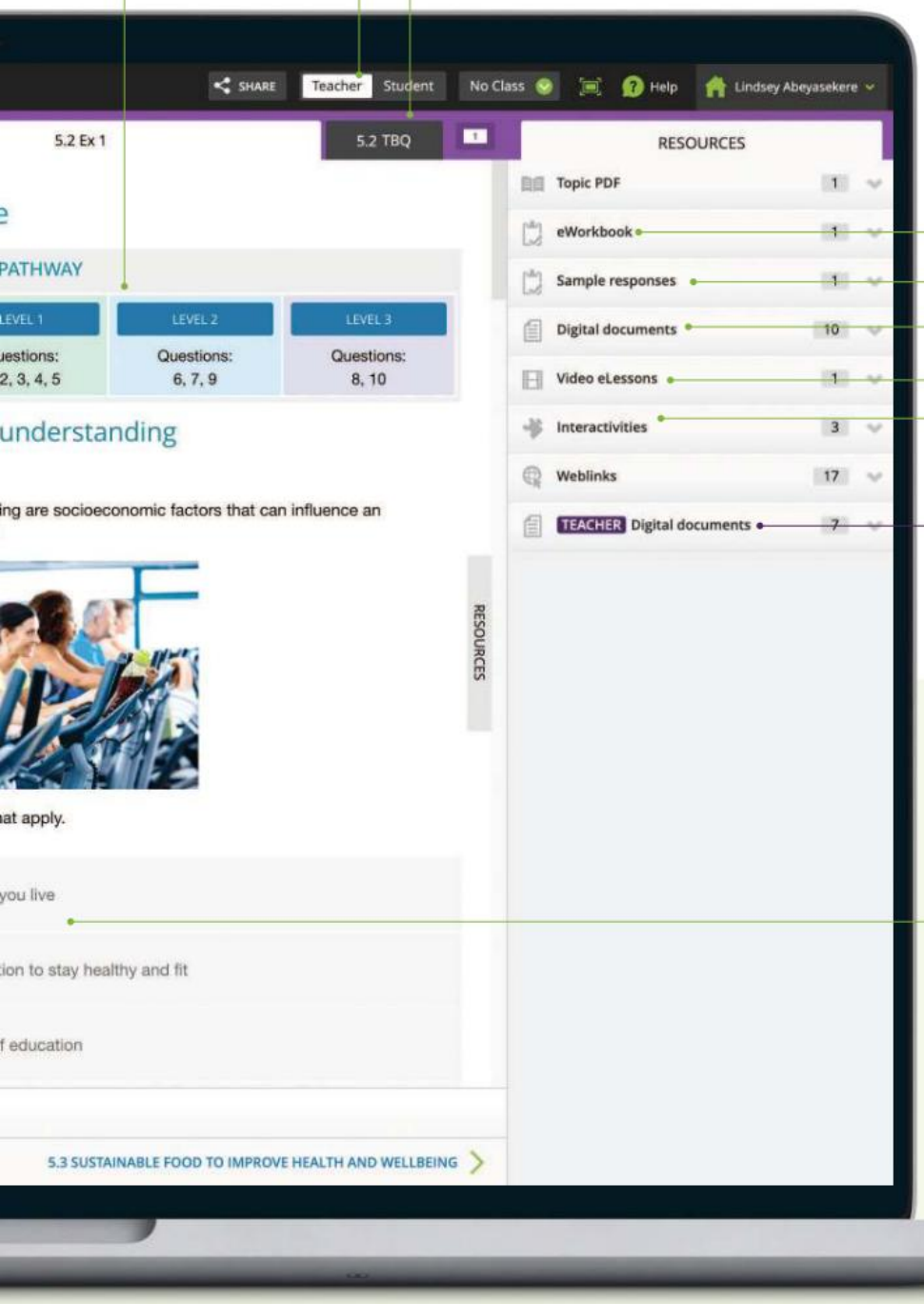
- **Trusted, curriculum-aligned theory**
- **Engaging, rich multimedia**
- **All the teaching-support resources you need**
- **Deep insights into progress**
- **Immediate feedback for students**
- **Create custom assignments in just a few clicks.**

Practical teaching advice and ideas for each lesson provided in teachON

Reading content and rich media including embedded videos and interactivities



powerful learning tool, learnON



Differentiated question sets

Teacher and student views

Textbook questions

eWorkbook

Sample responses

Digital documents

Video eLessons

Interactivities

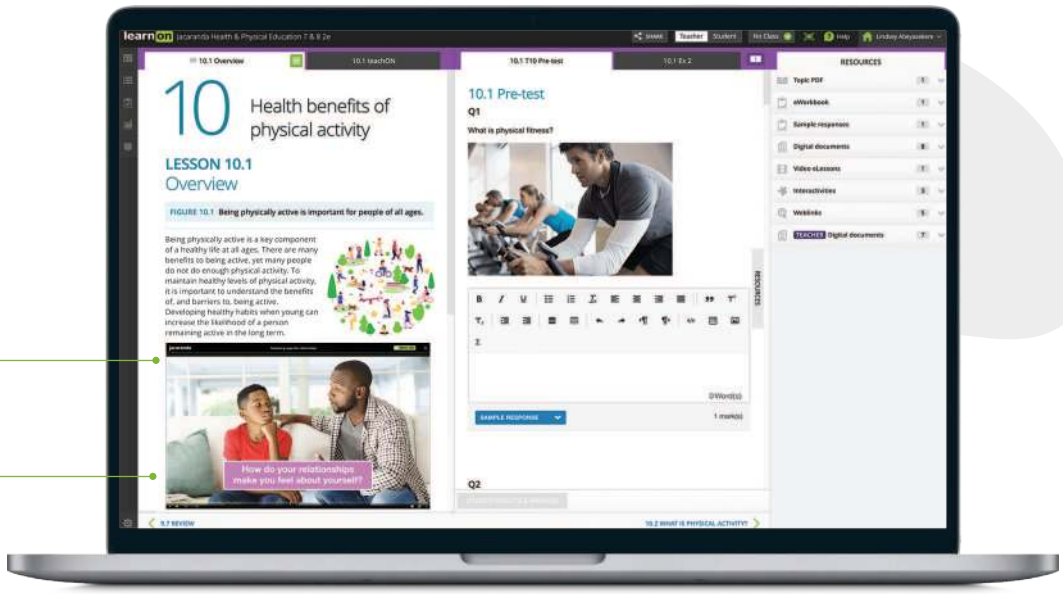
Extra teaching-support resources

Interactive questions with immediate feedback

Get the most from your online resources

Online, these new editions are the complete package

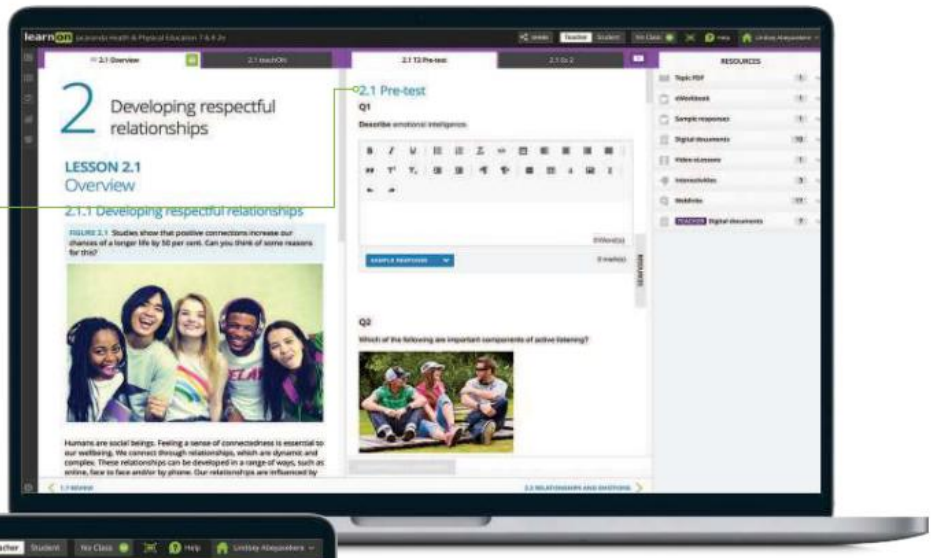
Trusted Jacaranda theory, plus tools to support teaching and make learning more engaging, personalised and visible.

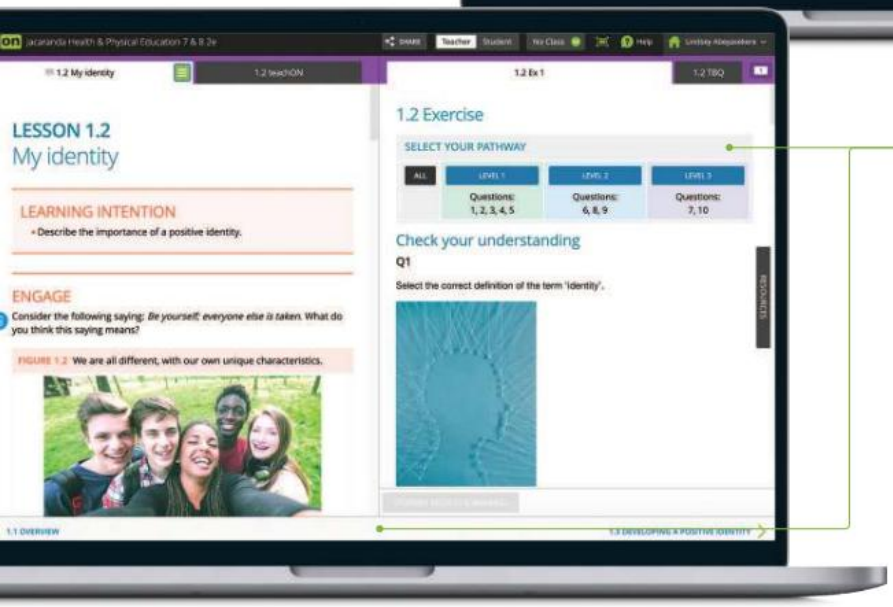


Embedded interactivities and videos enable students to explore concepts and learn deeply by 'doing'.

New videos for every topic are designed to help students learn concepts by introducing the key ideas and are flexible enough to be used for pre- and post-learning, flipped classrooms, class discussions, remediation and more.

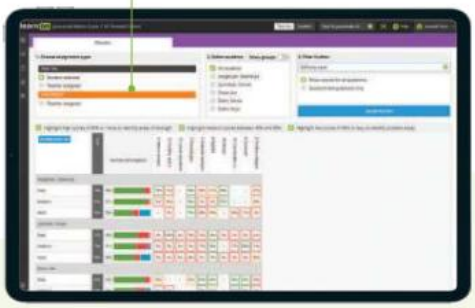
Pre-test and post-tests help test skill acquisition.

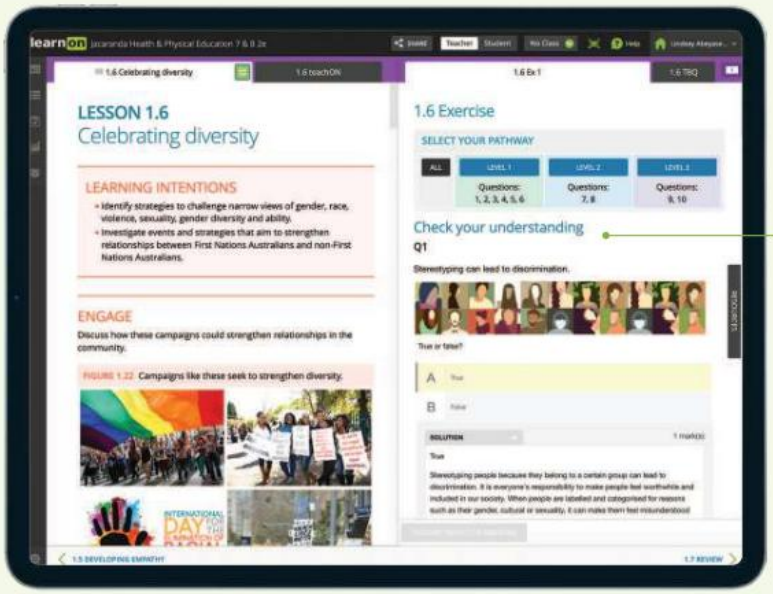




Three differentiated question sets, with immediate feedback in every lesson, enable students to challenge themselves at their own level.

Instant reports give students visibility into progress and performance.





Every question has immediate, feedback to help students overcome misconceptions as they occur and get unstuck as they study independently — in class and at home.

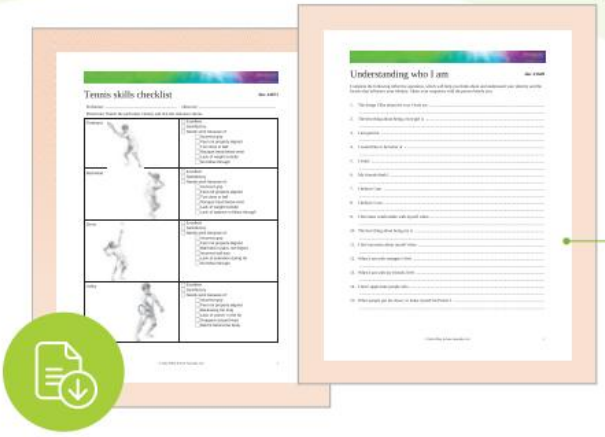
Consent and respectful relationships

Reliable and practical content and activities on consent and respectful relationships.

A wide variety of activities

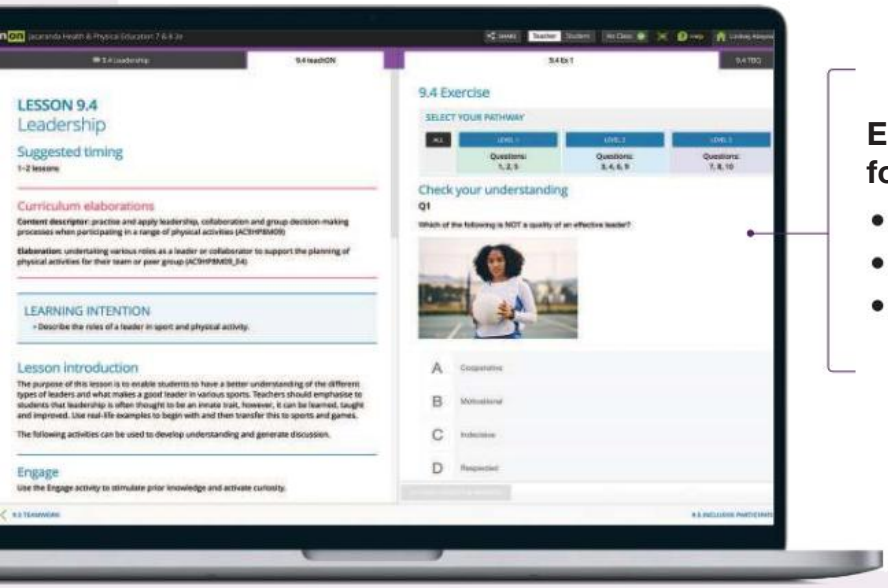
Includes a range of practical activities in every lesson including group work and practicals.

eWorkbook



The eWorkbook enables teachers and students to download additional activities to support deeper learning.

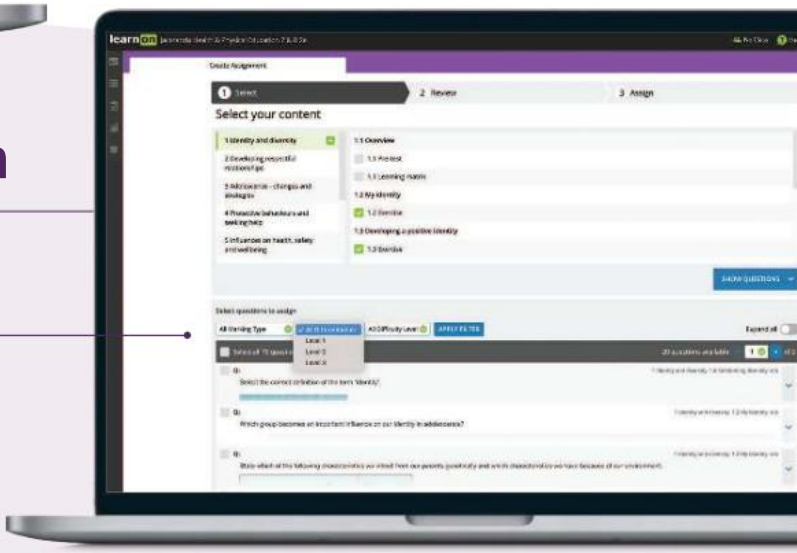
A wealth of teacher resources



Enhanced teaching-support resources for every lesson, including:

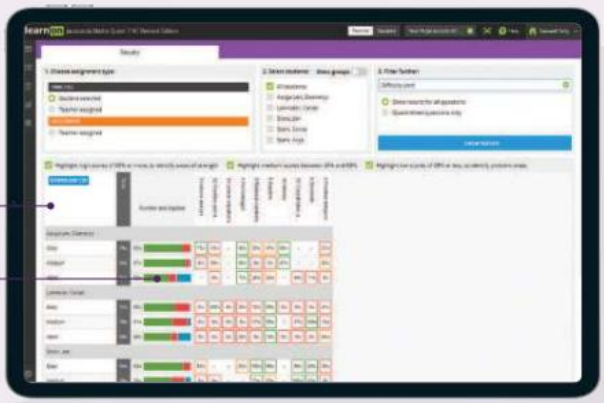
- work programs and curriculum grids
- practical teaching advice
- quarantined topic tests (with solutions)

Customise and assign



An inbuilt testmaker enables you to create custom assignments and tests from the complete bank of thousands of questions for immediate, spaced and mixed practice.

Reports and results



Data analytics and instant reports provide data-driven insights into progress and performance within each lesson and across the entire course.

Show students (and their parents or carers) their own assessment data in fine detail. You can filter their results to identify areas of strength and weakness.

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Understanding cognitive verbs

Cognitive verbs in the Australian Curriculum

The Australian Curriculum aims to develop students' disciplinary knowledge, skills, understanding and general capabilities across the curriculum. Students are also expected to progressively develop their thinking skills.

In the Australian Curriculum, cognitive verbs are used as signposts for this depth of thinking. Cognitive verbs signify different types of thinking and are already used in the classroom by many teachers and students.

Questions within Jacaranda resources use these cognitive verbs to support students in cognitive verb 'thinking'. The following list describes the cognitive verbs that are frequently used in Years 9 and 10.

Cognitive verb	Description
analyse	considering something in detail, finding meaning or relationships and identifying patterns. In an analysis you may reorganise ideas and find similarities and differences.
apply	using knowledge and understanding in order to solve a problem or complete an activity; activities and problems may be familiar or unfamiliar; applying knowledge and understanding can require recalling previous experiences.
compare	recognising how things are similar and dissimilar. Concepts or items are generally grouped before a comparison is made.
decide	selecting from available options. This may involve considering criteria on which to base your selection.
describe	giving an account of a situation, event, pattern or process. A description may require a sequence or order.
develop	bringing something to a more advanced state. Processing and understanding are required to develop an idea or opinion. Developing an idea or opinion may also involve considering feedback or the collective thoughts of a group.
evaluate	making a judgement using a set of criteria. This may include considering strengths and limitations of something in order to make a judgement on a preferred option.
examine	considering the information given and recognising key features. This might require making a decision, which involves gathering more information.
explain	making an idea, concept or relationship between two things clear by giving in-depth information. Explanations may include details of who, what, when, where, why and how in a step-by-step format.
identify	recognising and showing particular features of something. This might also include showing what or who something or someone is.
interpret	gaining meaning from text, graphs, data or other visuals. An interpretation includes stating what something might mean and drawing a conclusion.
select	choosing the most suitable option from a number of alternatives. This might require some consideration of context.
investigate	planning, collecting and interpreting data and information, and drawing conclusions.
synthesise	combining elements (information, ideas and components) into a connected or coherent whole.

Source: Adapted from the QCAA Cognitive Verbs.

PART

1 Personal, social and community health

TOPIC SEQUENCE

1 Identity, changes and transitions 4
2 Sexuality and sexual relationships 54
3 Managing risks 98
4 Finding and using health information 168
5 Strategies for a healthy sustainable community 200

1 Identity, changes and transitions

LESSON SEQUENCE

1.1 Overview 5
1.2 Values, beliefs and independence 6
1.3 Stereotypes, societal expectations and identity 18
1.4 Emotions and relationships 26
1.5 Identity, emotional wellbeing and mental health 40
1.6 Review 50

FIGURE 1.1 What role do you think taking social action plays in helping young people find their voice and identity?

LESSON
1.1 Overview

Hey students! Bring these pages to life online

Watch videos

Engage with interactivities

Answer questions and check results

Find all this and MORE in jacPLUS

1.1.1 Changing relationships

As you transition from youth to adulthood, your personal identity will shape who you are, how you see others and how they see you. Going through transitions in life can be exciting, overwhelming and scary. Adolescence is a transition that brings big changes in almost all areas of your life, including changes to body structure, thinking, social groups and family and peer relationships. Your personal identity will continue to develop and reflect who you are and will affect how you see others and how they see you. Factors such as culture, ethnicity, gender, ability or physical appearance can contribute to uniqueness.

ESSENTIAL QUESTION

Through the ups and downs of teenage life, how do you cope with changes and emerge with a greater sense of who you are?

STARTER QUESTIONS

1. What factors shape identity in the transition through adolescence?
2. How do societal expectations and stereotypes influence identity?
3. How can a positive identity help with managing changes and transitions?

on Resources

Video eLesson Identity, changes and transitions (eles-6098)

LESSON
1.2 Values, beliefs and independence

LEARNING INTENTIONS

- Analyse factors that shape identities and evaluate how individuals impact the identities of others.
- Investigate how cultural beliefs and practices surrounding transitions to adulthood differ between cultures.
- Discuss the impact of border crossing on the development of identities for First Nations Australians.

1.2.1 Knowing yourself

Who are you? Why are you important and unique? Where do your **values** and **beliefs** come from and who has the most influence on developing these characteristics? In this lesson, you will explore the traits that help to define your identity, beliefs and personal values as you transition through adolescence.

values beliefs about what is important and what is right or wrong

beliefs a philosophy or viewpoint on issues

ENGAGE

Writers and musicians across the 20th and 21st century have written about the feelings of being a teenager. They write about happiness, freedom, confusion, loneliness, joy and despair that comes with being a teenager.

Do you think these feelings accurately explain the transition from adolescence to adulthood?

FIGURE 1.2 Does the music you listen to reflect your feelings?

1.2.2 Personal identity

Our **personal identity** is made up of physical characteristics, skills and attributes. More importantly, it is related to the way we feel about ourselves and how we think others see us.

personal identity the qualities, skills, attitudes and beliefs that make each individual unique

As we grow older, we start to think and act more independently. This can affect our emotions and relationships. Have you ever been annoyed when a parent asks you a lot of questions about school? Or groaned or rolled your eyes when asked about your choice of music or a friend's clothing? Forging your own identity means separating yourself from your family. It involves examining your family values, working out what parts you want to keep, and making adjustments to other parts in order to uphold your own values. However, even as you assert your independence from your family/caregivers, you may still depend on them for emotional support, stability and guidance.

Adolescence is also a time of 'trying on' different activities, interests, fashions, friendships and styles of communication until you settle on what suits you. As with any period of transition in life, adolescence raises

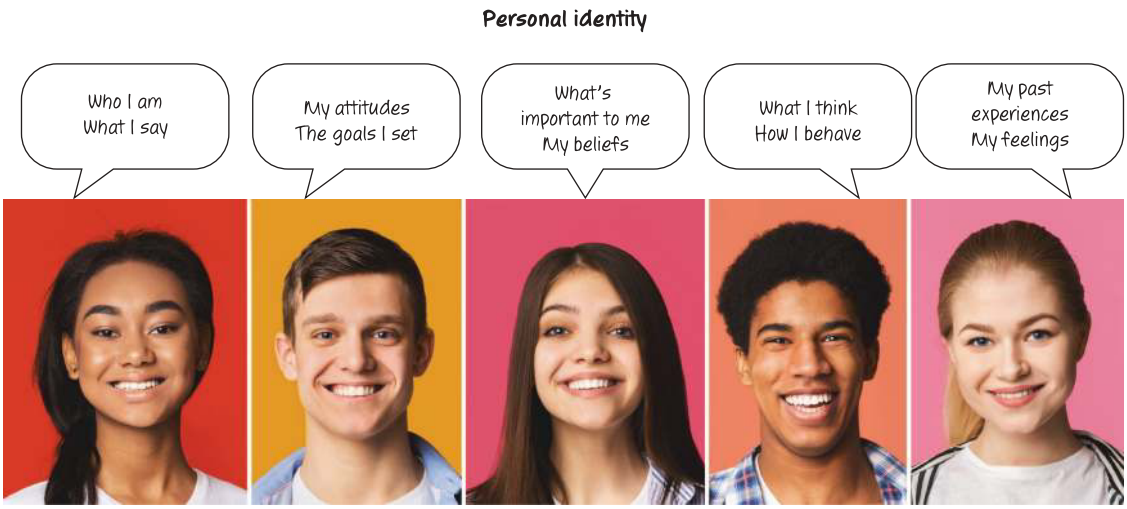
questions such as ‘Will I be accepted or rejected for my choices?’ ‘Are my values and beliefs similar to those of my family and peers?’ ‘Will my choices mean I belong with others, or will they set me apart?’

1.2.3 Factors that shape identity

As you get older, your personal identity changes. The changes can be influenced by:

- societal values and expectations
- cultural values and expectations
- your relationships with friends and family
- the community in which you live
- your personal experiences
- your body image
- your self-esteem
- the media
- your gender
- your sexual orientation.

FIGURE 1.3 What are your beliefs about yourself?



We examine our developing identity based on the feedback we receive from others. This is the basis of the theory that identity development is a three-step process:

1. We imagine **how others see us**.
2. We imagine **what they think of us as a result**.
3. We develop ideas about ourselves based on **how we think we are judged**.

Societal values and expectations

People’s common beliefs bind them together into groups and influence their actions. These groups’ values can in turn influence you. Table 1.1 shows some common groups, and how they may influence your beliefs and behaviour.

TABLE 1.1 How the values of groups in society may influence you

Groups within society	May influence your beliefs and behaviour in relation to:
Peers	• clothes • where you go and your use of leisure time • the language you use • your body • types/amount of food you eat • online behaviour and social media use.
Parents	• where you can go • curfew • family responsibilities • behaviour • screentime.
Coach	• fitness • teamwork • commitment • body image.
School teachers	• learning • work ethic • behaviour • uniform and appearance • punctuality.
Community laws	• road rules • vandalism • stealing • trespassing • littering • smoking and drinking in public places.
Activist groups	• issues such as the environment or politics.
Religious groups	• the way you treat others • social conscience • the role of gender in society • the acceptance of same-sex attraction • pre-marital sex • the meaning of marriage.

Cultural values and expectations

The culture in which a young person grows up affects the way they see themselves, including as they move into adulthood. A person's understanding of their own and others' cultural identity develops from birth. It is shaped by the values and attitudes found at home and in the surrounding community.

Families

Familes:

- teach subsequent generations about culture and about challenging **stereotypes**
- role model certain behaviours
- can teach about acceptance and respect
- provide exposure to diversity and different experiences
- encourage friendships
- foster pride in cultural identity
- may help their members to cope with prejudice.

stereotypes conventional views or ideas (not necessarily accurate) about a group of people

Families can also pass on traditional values about manners, morals and behaviour. Some cultures have formal celebrations to mark the beginning of adulthood, such as the Jewish celebration of Bar or Bat Mitzvah when a boy or girl, respectively, turns 13 years old. In Japan, 'Seijin no Hi' or Coming of Age Day is held every second Monday in January to celebrate those who have turned 20 in the previous year or will soon be turning 20.

First Nations Australians

For First Nations Australians, the concept of family often includes a much wider extended family, sometimes spread across several households. This extended family, or kinship, is the foundation of identity and culture. Family teaches you how to live, and how to treat other people and Country.

The Stolen Generations refers to the vast number of First Nations Australian children who were removed from their families and put into state or church institutions, away from their communities. In most cases, their parents did not even know where their children had been taken and they were usually forbidden to make any contact. This has caused trauma for generations of First Nations Australians. For some, it has made it more difficult to connect with and be proud of their cultural identity.

Identity becomes more complex over time as people interact with different groups within the broader society. It develops and changes as cultural influences (e.g. mass media and popular culture) and the belief systems and ways of life of different groups affect us.

DID YOU KNOW?

For First Nations Australians, identity is shaped by kinship and connections to Country. A major aspect of a First Nations person's identity is their totem (a natural object, plant or animal), which is inherited or given to them as their spiritual emblem by members of their clan or family. Some people have several totems.

Valuing diversity

In a culturally diverse society such as Australia, individuals may have multiple identities through identification with several different sub-cultures. These identities may be based on cultural heritage, family or birthplace; religious or social identity; and gender identity. It is not uncommon to be part of several communities at one time.

Young people interact in several different communities, not just cultural. You might be part of a sporting community and, at the same time, part of a multicultural community, a school community and a rural community. So, how might these different communities affect our sense of identity? Being part of these groups means being part of the culture of the group. This culture could influence factors such as:

- how you act and behave
- the food you eat
- how you speak or dress
- the types of people you associate with
- the people you are influenced by.

FIGURE 1.4 Everyone is different. Each of us has a unique personal identity and set of life experiences.

How you fit into these groups decides whether you will be accepted. These factors shape and support the creation of everyone's identity within that community.

Think of a sporting community you have been associated with. How has this group influenced your identity? Take into account factors such as:

- the types of role models in the group
- the expectations on you as a member of the group

- how you are expected to act
- what is acceptable and unacceptable behaviour
- what types of people are part of the group
- what happens when you don't comply to the 'rules' of that community.

Walking in two worlds

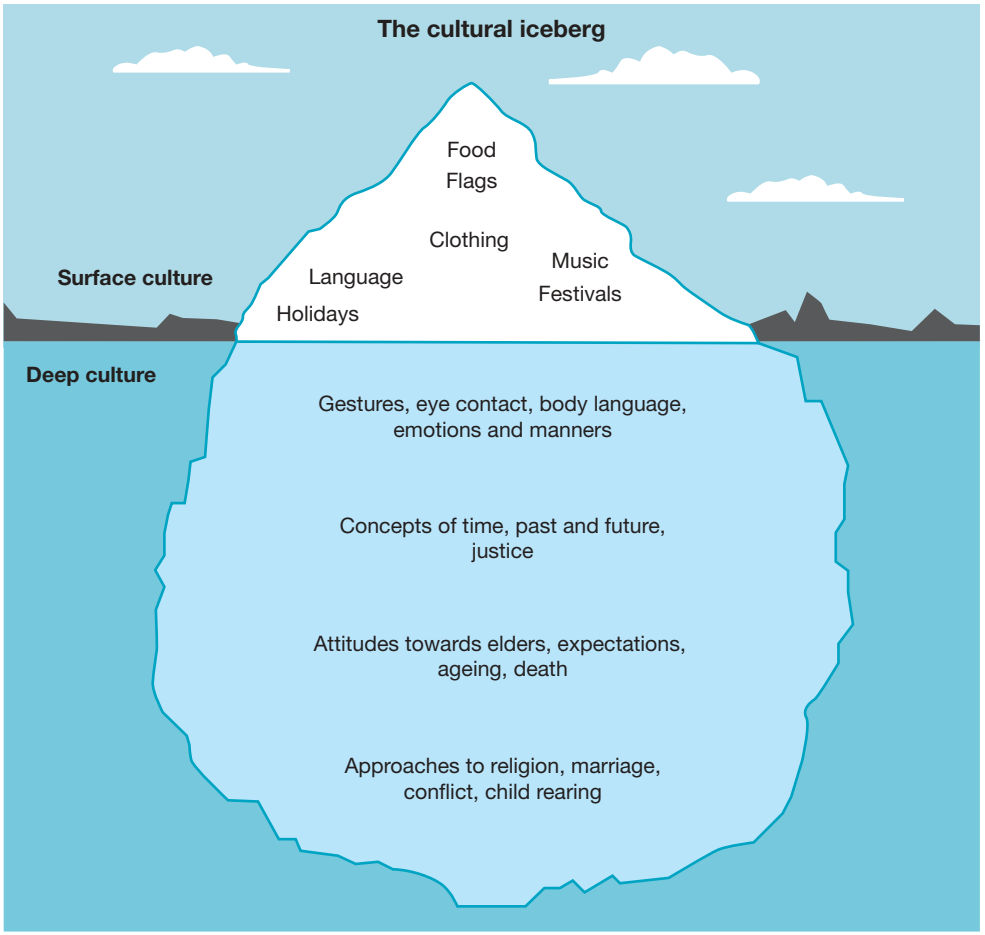
Different groups can hold different cultural values, and you can belong to many different groups in your daily life. Since people generally like to fit in and get along with the people around them, you can sometimes find yourself holding different, even contradictory, values in different situations. Feeling stuck between two cultures can cause conflict and affect your emotions.

As Australia is a multicultural country, it is not uncommon for young people to interact across 'two worlds' or two cultures. For example, their family culture of origin may value one thing, and their peer group or the wider society may value something totally different. For example, your family may value spiritual events such as attending church at the weekend but your friends may want you to go to a music festival.

In another example, many young people from Asian backgrounds have found some cultural differences in Australia (such as different values about family, parental expectations and gender roles) hard to adjust to. They experience 'two cultures within one person'. Movies or books such as *Crazy Rich Asians* or *Growing Up Asian in Australia* highlight the struggles faced when a person's identity isn't based solely in either the Asian or the Australian/American part of their experiences.

Figure 1.5 indicates the wide range of factors within a culture that can influence our identity.

FIGURE 1.5 The cultural iceberg shows the aspects of a culture that can influence our identity, values and beliefs. Many of these factors lie beneath the visible surface.



weblink

DISCUSS

Use the **Learning to navigate your cultural identity** weblink in your Online Resources to read the article about identity formation as a second generation Australian.

weblink

DISCUSS

Use the **Walking in two worlds** weblink in your Online Resources to read the article about Junior Dirdi. What does 'border crossing' mean? Discuss the factors that contribute to his identity. Identify the challenges he faces in his identity formation.

Friends and peer group

Any transitions in life mean taking active steps and making choices that shape identity. As young people experiment with their identity, their behaviour is shaped by wanting to feel they belong to a group of friends or peers. Peers and friends provide acceptance and a sense of belonging. They listen and provide feedback, help you make decisions and explore your beliefs, and discuss problems with you. They may influence the choices you make, such as whether to participate in sport or school events and activities. Forming friendships with people your own age allows you to build relationship and communication skills.

As well as helping you to develop your own personal identity, strong friendships and peer relationships help you achieve another critical task: finding independence from your parents/caregivers. Young people often feel that their peers will be more approving and supportive of their choices compared to someone like a parent, and that their peers' evaluations of their choices are better aligned to current culture.

Selecting the environments and peers you want to be around also means reflecting on and adjusting your beliefs and behaviours based on their feedback. Intimate peer bonds are usually formed through the sharing of personal secrets and feelings.

Body image and body confidence

We live in a world that sends us all sorts of messages about the 'perfect' body. It is not surprising then that instead of embracing and celebrating diversity in all body types, we often concentrate on what can be physically unattainable perfection. The reality is that both males and females come in different shapes and sizes. It is unrealistic to represent only one body type as beautiful.

With so many physical and emotional changes occurring during puberty, it is normal throughout this time for young people to be more self-aware. How does your body image shape who you are?

FIGURE 1.6 When we have body confidence, we accept and are happy with how we look and what our bodies can do.

Media influences

Social media allows us to interact with one another online. Our profiles allow us to try on different 'hats' or identities or to manage the way we present ourselves to others.

Social media platforms such as Facebook or Instagram can encourage us to interact with real-life friends and acquaintances. Tumblr and TikTok can allow us to find people that we might not know in real life who have similar interests or experiences.

So social media provides an opportunity for two identities: one in the real world and one in the virtual world. These identities may not be the same.

Media and gender

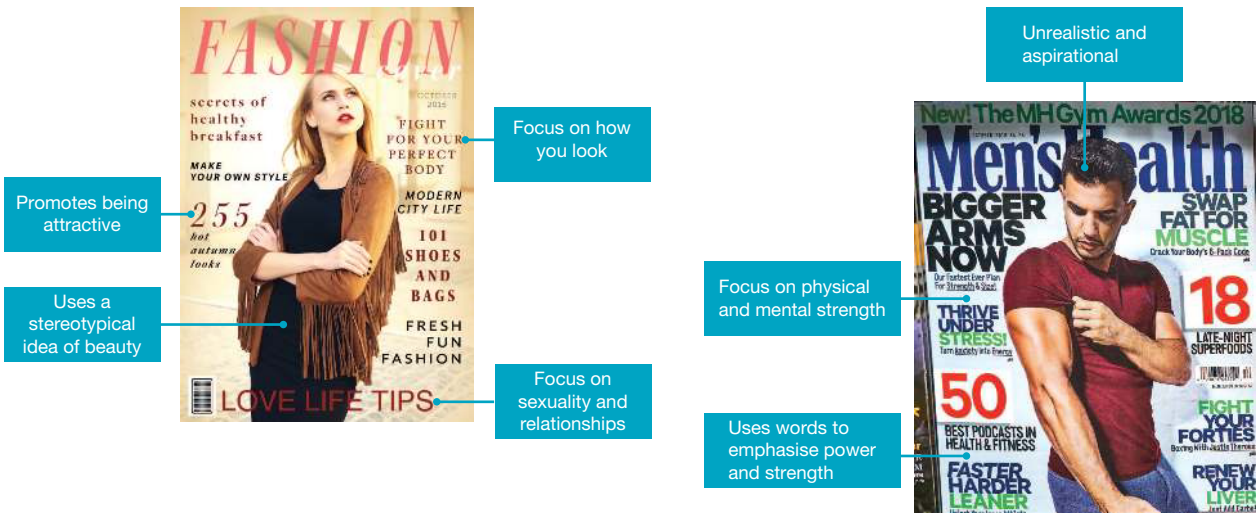
Advertising and media representation of sexual behaviour and **gender stereotypes** can have a strong influence on our attitudes towards our own personal identity. Images that are inappropriate or unachievable for most people are portrayed as normal and can make us feel inadequate or unhappy with ourselves. Very often, the pressure to look or behave like somebody else is very strong. This pressure can be harmful to our physical and emotional health.

gender stereotypes generalisations (not necessarily accurate) of how individuals of a certain gender should behave or conduct themselves

gender identity how you perceive your gender, how you show this to others, and how you want others to treat you

Children and young people are increasingly questioning traditional social norms. They aren't afraid to explore what gender means to them and how it relates to their identity. The internet and social media provide a place to find out information and form communities that make young people more confident about their gender identities. **Gender identity** is how you perceive your gender, how you show this to others, and how you want others to treat you.

FIGURE 1.7 How relevant are these media depictions of gender today?



Media and diversity

It is also important to examine how **diversity** is represented in the media and the influence these representations have on individuals' identities. Is enough being done to portray minorities — young people, women, seniors, people with a range of abilities, cultural groups — accurately and fairly on television or within the media? While there has been some improvement, minorities are still not fully represented in the Australian media, and they continue to be stereotyped. A truly diverse media allows for the voices of all Australians, including minority groups, to be heard and accurately depicted.

diversity the differences between people and groups of people, including those of culture, race, religion, gender, and life experience. Diversity means understanding that each individual is unique and recognising individual differences.

DISCUSS

Discuss with your class some ways the communities you are part of expect you to act. This may be because of your age, gender or position in the group. How are diversity and gender catered for in the communities you are part of?

Socialisation

The process of learning to behave in a social group is known as **socialisation**. In the past, from a young age, people were dressed, spoken to and expected to behave in ways that readily identified them as girls or boys. For example:

- Young girls wore dresses, played with dolls, didn't become dirty, and behaved in a gentle and quiet manner.
- Young boys behaved boisterously, were more adventurous and active, took more physical risks, got dirty and played with toys such as trucks, trains and cars.
- Adult females were nurturing, interested in friends and family, liked pretty things and were concerned with domestic duties.
- Adult males were competitive, expected to provide for their families, did outdoor chores and did not show emotion in public.

socialisation the way we are brought up and expected to behave in society, often based on gender

These traditional boundaries of being feminine or masculine, which were once well-defined and socially accepted, are now being strongly challenged. For example, the AFLW, NRLW and A-League Women competitions have challenged stereotypes and inclusivity and promoted empowerment by changing the way girls and women in sport are perceived.

Although rigid expectations of masculine or feminine behaviour are no longer as common, there are still people who hold onto the traditional stereotypes and expect males and females to behave in particular ways. This can be very confusing for some young people who feel that they don't fit these stereotypes.

FIGURE 1.8 Lego has announced that it aims to remove gender stereotypes from its toys, after it found that attitudes to play and future careers remain unequal and restrictive.

1.2.4 Personal views, beliefs and values

What we feel and believe about a range of issues is part of our personal identity. These issues are diverse and include fashion, music, drugs and alcohol, diet, sexuality, leisure pursuits and politics. Opinions about such issues affect the decisions we make and the way we behave.

Our values, beliefs and attitudes are the products of our own individual circumstances and experiences. They are influenced by a range of people and groups, and reflect our views on morality, respect, loyalty and honesty. As we gain independence and establish an individual identity, we may develop stronger or different values.

These values may be similar to those of our peers. This is because we often choose to be friends with people who have values that complement our own. This allows us to work together to establish common interests. However, as we develop our **independence**, we should also become more open to understanding the values of others.

independence the ability to think, decide and act for yourself, giving consideration to, but without being adversely influenced by, other factors, pressure, coercion or opinions

conflict a difference of opinion

Conflict

Conflict can arise when there is disagreement between an individual's personal values and those of society. This happens when different individuals do not place the same level of importance on certain values. For example, conflict occurs at school when an individual student does not value the school's code of behaviour. It may be that the student values socialising more than learning. However, to function effectively in the school community, the student needs to respect the school's codes. When there is conflict, it is important to reflect on your values and be sure to communicate these effectively, while listening to the opinions of others.

FIGURE 1.9 Compromise and acceptance of others' opinions is important for building strong relationships.

At times, our personal values can be in conflict. For example, if a person values their family's trust but also values having fun with friends, difficulties may arise if these clash. Imagine having to make a decision to leave a great party so you can get home in time for your curfew. In cases such as these, you need to weigh the possible consequences of your actions and decide the best approach so that you do not compromise your most deeply held values.

1.2.5 Shaping our personal identity

Personal identity is shaped by past achievements, present views and future goals:

- *Past achievements.* The things we have achieved and the success we have had in the past help form our current view of ourselves. Our perceived abilities affect what we think we can achieve and cope with in the future. This is influenced by our history, heritage and upbringing.
- *Present views.* How we feel about ourselves now is important. We have views, beliefs, attitudes and feelings about all aspects of our lives. This includes how we feel about religion, education and government, as well as how we feel about ourselves and others. These views affect our **behaviour patterns** and the decisions we make.
- *Goals for the future.* The goals we set for our future are a way of defining ourselves and who we want to be. These goals may relate to relationships, career pathways, health, sport, education and travel. They affect our present view of ourselves and reflect our values, beliefs and attitudes.

behaviour patterns the way in which we behave; can be similar in certain situations

Activism

Young people have bold goals for the future and the energy to achieve them. They should also have a voice in identifying problems and finding solutions that impact their health and wellbeing. This is the basis of youth activism.

FIGURE 1.10 Amelia Telford is a climate change activist and the first Indigenous coordinator at the Australian Youth Climate Coalition. She has been awarded a National NAIDOC Youth of the Year award, Australian Geographic Young Conservationist of the Year award and the Bob Brown Young Environmentalist of the Year award.

1.2 ACTIVITIES

1 Identity

doc-14802

Complete the **My identity** worksheet in your Online Resources and evaluate the factors that shape and influence your identity.

2 Cultural iceberg

a. Use figure 1.5 to create your own cultural iceberg to indicate the influences on your cultural identity.
b. Share your cultural iceberg with a partner who identifies with a different culture.
c. As a class, discuss whether there is such a thing as Australian identity.

3 Becoming an adult

doc-14804

Complete the **Cultural differences** worksheet in your Online Resources to investigate when and how other cultures celebrate the transition into adulthood.

4 Communicating personal values

a. In small groups, choose a controversial issue that you all have the same opinion on. You may choose a specific issue from one of the following general topics or choose one of your own (check with your teacher first).

i. Underage smoking
ii. Literacy levels
iii. Dress codes
iv. Unemployment
v. Abortion
vi. Video games
vii. Teenage pregnancy
viii. Pornography
ix. Stereotypes
x. Music or movie piracy.

b. Write down your group's opinion on this issue.
c. Identify the values that underpin your group's chosen point of view. Does gender, culture or your community's values affect your views?
d. Write your issue up on a large sheet of paper and place it on the wall.
e. Walk around the room and add your own opinions and comments to each group's sheet. You are helping the other groups to include all points of view and opinions on their chosen issue, and the other groups are helping you in the same way. Consider this your 'local community' view on the issue.
f. Using newspapers, magazines and internet articles, collect public comment and debate about the issue. Describe the types of language the writers use to get their points across. Collect this information before your next lesson. Consider this your 'global community' view on the issue.
g. Think of ways to clearly organise your findings, such as using a mind map or analytical report. Compare your own group view with the local and global community views you have gathered. Discuss whether all the global community views were raised. Why or why not?
h. Present your findings to the class.

5 Young people in the media

doc-14805

Investigate how young people are portrayed in the media using the **Media messages** worksheet in your Online Resources.

6 Expectations of teenagers

Design a survey to investigate family and community expectations of teenagers. You could investigate issues of independence, the values and attitudes of young people, or specific influences on young people.

a. Come up with a list of 4–5 questions. Some ideas to get you started are:
- Do you think teenagers should be actively involved in social issues?
- Do you think teenagers are pushed too hard to achieve in life today?

Add 3–4 questions of your own.
b. Record your own answers to the questions you have developed.
c. Choose a range of people to survey, including at least three community members and three family members. To perform the survey, you may use photocopies of a prepared survey form, send the survey by email or record survey responses using a video camera.
d. Using the information gathered from your survey, comment in writing on the following statement: 'Our families and the community have a strong influence on us as we develop personal identity and independence'. Alternatively, you could present your findings to the class in the form of a class debate.

7 Conflict

Identify the personal values that are in conflict in the following scenarios:

a. *I have homework due tomorrow but I want to watch the latest episodes of my favourite show tonight.*
b. *I know that vaping harms my health but I vape when I am with my friends.*
c. *I want to do well at school but I want to be with my friends when they skip classes.*
d. *I believe in each person's right to be an individual but I do not stop my friends when they are bullying another student.*
e. *My parents have told me not to drink alcohol when I go out but my friends always expect me to have a drink.*

8 Express your opinions

doc-14806

You have views about a lot of things. Choose three issues that you feel strongly about and then complete the **Express yourself** worksheet in your Online Resources. Use the list of ideas below to help you choose your topic.

- Children
- Community laws
- Consumer rights and responsibilities
- Drugs
- Families
- Food
- Gender roles
- Money
- Music
- Pets
- Racism
- Relationships
- Right and wrong
- School
- Sex
- Sports
- STIs
- Work
- Your rights and responsibilities.

9 Mapping independence

doc-14807

In a small group, your task is to analyse some of the positive and negative health outcomes of becoming independent and having to make decisions. Use the **Mapping independence** worksheet in your Online Resources to create a mind map of a 'choose your own ending' story.

1.2 Exercise

1.2 Exercise

Select your pathway

LEVEL 1	LEVEL 2	LEVEL 3
1, 2, 3, 4, 5, 6	7, 8, 9	10, 11

These questions are even better in jacPLUS!

- Receive immediate feedback
- Access sample responses
- Track results and progress

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Check your understanding

1. Identify the term used to describe the Jewish celebration that formally marks the beginning of adulthood for 13-year-old boys.
2. MC You are at a party with your friends. Your curfew is coming up, but you don't want to leave the party. Which personal values are in conflict in this situation?
   - A. Personal health versus having fun with friends
   - B. Being an individual versus family's trust
   - C. Family's trust versus having fun with friends
   - D. Doing well in school versus family's trust
3. MC How does the media influence identity?
   - A. Through the representation of stereotypes
   - B. Presenting ideas, behaviours and social norms
   - C. By enabling us to engage with others on social media
   - D. All of the above
4. MC Which of the following is not an example of a stereotype?
   - A. Cool jock
   - B. Olympic athlete
   - C. Digital native
   - D. Out-of-control delinquent
5. Border crossing refers to First Nations Australians living between two cultures. True or false?
6. What term relates to the differences between people and groups of people, including those of culture, race, religion, gender and life experience?

Apply your understanding

7. **State** what is meant by 'identity'.
8. **Identify** who or what has the most influence on your identity. **Explain** how and why they have this influence.
9. With increasing independence comes change. **Identify** three things that, because of increasing independence, may bring about a change in:
   - a friendship
   - a family relationship
   - an intimate relationship
   - your sense of self or personal identity.
10. **Explain** how culture creates a need for some young people to 'cross borders' when developing identity.
11. **Discuss** one example of where the goals of young people are contributing to activism.

LESSON
1.3 Stereotypes, societal expectations and identity

LEARNING INTENTIONS

- Examine how societal norms, stereotypes and expectations influence how young people view themselves and how they deal with these influences.

ENGAGE

Greta Thunberg, a young activist from Sweden, started having impact in the movement for climate change awareness when she was 15 years old. She achieved this through her passionate speeches, uncompromising stance on fossil fuels and by sailing to New York in a zero-carbon yacht to prove her dedication to the cause.

FIGURE 1.11 Do you think Greta challenged stereotypes about young people?

1.3.1 What are stereotypes?

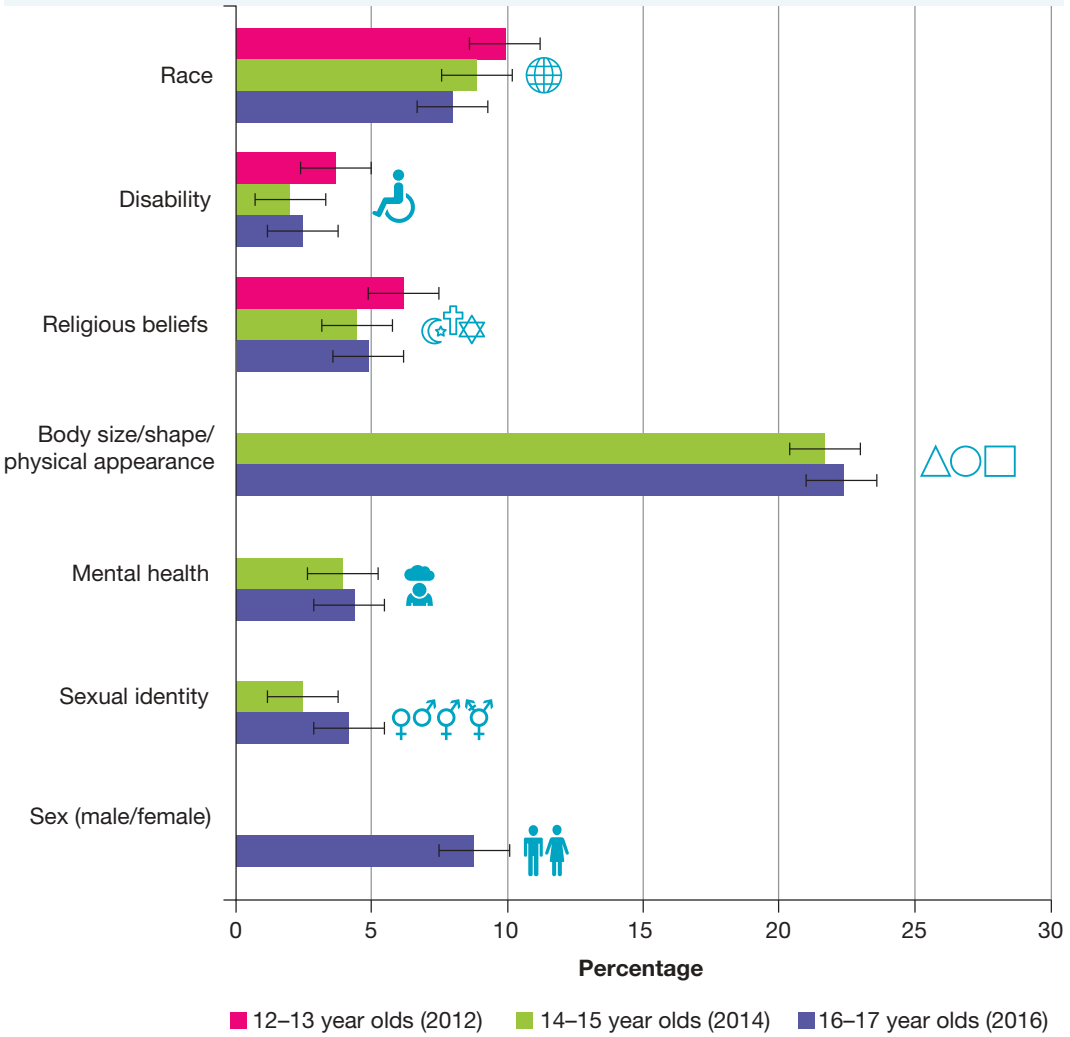
A stereotype is a commonly held belief about a specific group or type of individual. Stereotypes are often based on assumptions rather than facts. They can be directly influenced by the values, beliefs and attitudes of a community. Stereotypes involve mentally placing someone into a particular social group, based on their gender, age, race, nationality, occupation, religion, style of dress, or some combination of the above. It then involves generalising or forming a belief about that particular social group and applying that belief to all members of the group. By stereotyping someone, we assume they have a range of characteristics and abilities common to all members of their group.

Stereotypes involve our personal experiences with people from another group and the images or beliefs we receive from **gatekeepers**. These are people such as our parents or the media. These inherited beliefs influence how our group sees members of other groups. Stereotyping lowers the value we see in the group's difference. It can lead to people not getting the same opportunities, respect or power as others.

gatekeepers people or things that control our access to ideas or information

Stereotypes are linked to prejudice and discrimination — prejudice actually means 'prejudgement'. Stereotypes not only influence how other people treat us, but they also influence how we think about ourselves. Stereotypes do not necessarily have to be negative (e.g. the 'idealism of youth'). Negative stereotypes can create self-doubt about what we can do or be.

FIGURE 1.12 Proportion of Australian teenagers experiencing different types of discrimination



Source: Based on data from The Longitudinal Study of Australian Children 2021. © Australian Institute of Family Studies. Licensed under CC BY 4.0.

1.3.2 Gender stereotypes

Historically, certain personal characteristics have been strongly associated with gender: females were expected to behave in a gentle, nurturing and subordinate manner. Their main role in life was to be a good wife and mother. Conversely, males were traditionally expected to be strong, domineering, physical and lacking in emotions. Their main role in life was to be the money earner for the family and to provide stability and status.

FIGURE 1.13 Society's views and stereotypes about male and female roles are changing.

Gender roles and stereotypes like these often caused problems in relationships because of an imbalance in power. In a healthy relationship, all people involved should have a say in decision-making. Stereotypes that reinforce the idea that men 'naturally' make better leaders because they are more rational and less emotional can lead to the expectation among some men that they should 'be in control'. In its extreme form, this attitude can show up as unhealthy relationships that are emotionally controlling, abusive and violent towards women.

This stereotype also negatively affects boys and men. The stereotype of 'the Aussie bloke' as tough and not showing emotion puts pressure on men and boys to meet unrealistic expectations. This can negatively impact on their mental health. A VicHealth survey showed that most young Australian men interviewed disagree with outdated stereotypes of masculinity, but they feel pressure to conform in public.

MensLine Australia has suggested creating new social norms for men to address this outdated stereotype. They hope this will both improve men's mental health and reduce violence against women. They suggest the following norms:

- Asking for help is a sign of strength.
- Tough men show their vulnerabilities.
- Authentic men are attractive.
- Domestic roles and chores are not defined by gender.
- Gender identity is independent of biological sex.
- Lasting relationships are the most fulfilling.
- Benevolence and collaboration trump aggression and control.

Source: https://mensline.org.au/mens-mental-health/male-stereotypes-and-the-man-box

Gender and sport

In recent years, there have been signs that the traditional gender stereotypes and the boundaries they created are breaking down. In sport, there have been changes in the sporting activities people pursue. Many females play traditionally 'male' sports, and female cricketers, as just one example, are now recognised as athletes in their own right.

Although there is still a significant difference in the media coverage and pay associated with professional men's and women's sports, the situation is improving. Events such as the Women's Big Bash League for cricket, the women's AFL season, the women's NRL season and Australian Netball matches are now televised more widely.

FIGURE 1.14 The barrier between traditional 'male' and 'female' sporting activities is being broken down.

1.3.3 Teenage stereotypes

Teenagers are not all hormone driven, rude, moody and sullen. Yet some believe that the typical teenager going through developmental years regularly demonstrates each of these characteristics. Is this a fair judgement? Are all teenagers the same? The answer is a resounding 'no'. Each individual's development will be shaped by the values, beliefs and attitudes they consider most important. However, this is greatly influenced by the stereotypes in their society. Stereotypes can be created by the media, including books, movies and news stories. These stereotype can be negative (lazy, selfish) or sometimes positive (energetic, idealistic).

FIGURE 1.15 Izzy Raj-Seppings, a 14-year-old student and climate activist, leads a 'School Strike 4 Climate' march with fellow youth rally organisers to demand action on climate change, in Sydney, Australia, 21 May 2021.

How do you feel young people are represented in the media? The *Inclusion and representation of young people in the Australian news media* study revealed that:

- 1 per cent of news stories directly quoted a young person.
- 2 per cent of news stories were about young people as a social category.
- 11 per cent of news stories included the views and experiences of young people.
- 11 per cent of news stories included photos or video footage of a young person or young people.
- 34 per cent of news stories were about issues likely to affect young people.

This study shows low representation of young people in the news media, especially for any content that included their voice or experiences.

The messages the media send can influence attitudes within the community. Often, opinions and stereotypes are formed as a result. In the report 'Missing: Young People in Australian News Media 2020' by the Foundation for Young Australians, six mainstream online news publications were analysed for the presence of five stereotypes about young people:

1. Young people lack resilience/are lazy.
2. Young people are criminal/dangerous.
3. Young people are entitled.
4. Young people are a homogenous group.
5. Young people can't make the right decisions.

The report found that there was:

- not much coverage about young people
- widespread use of the stereotypes
- a different type of reporting used for young people, much of it negative
- a lack of quotations from young people
- a stereotype that all young people are the same (homogeneous). Visit the **Missing: Young People in Australian News Media** weblink in your Online Resources for more information.

weblink

1.3.4 Cultural stereotypes

Australia is home to the world's oldest continuous **cultures**. Additionally, its population comes from over 300 different ancestries and almost half the population was either born overseas or has one parent born outside the country. Despite this diversity, cultural stereotypes and racism remain an issue.

cultures more than one culture as First Nations Peoples are not homogenous

A survey by Reconciliation Australia found that just 30 per cent of the general Australian community socialise with First Nations Australians. So where do the majority of Australians get their ideas about First Nations Australians?

DID YOU KNOW?

There is a new DC comic book superhero named Thylacine, a First Nations Australian from the Pilbara. She boasts night vision, heightened senses, lethal combat skills, Batman-like stealth, and a steely suffer-no-fools gaze. Thylacine is the first First Nations Australian character in Suicide Squad's 33-year history.

Stereotypes and prejudices are harmful because they ignore the fact that each individual has their own abilities, strengths, weaknesses, desires, thoughts and feelings. As biases, they influence our thoughts, feelings and behaviour. For example, they can influence how we respond to others.

The use of language is important in the identity development of First Nations Australians. In Australia, terms such as 'Indigenous' or 'Aboriginal and Torres Strait Islander' have been chosen by non-Indigenous people. However, the term 'First Nations Peoples' has been chosen by First Nations Australians for two main reasons:

- As the oldest cultures on Earth, it refers to the fact that First Nations Peoples occupied Australia before anyone else.
- 'First Nations Peoples' recognises the diversity among the inland and coastal nations in Australia, each of which has its own culture, history and language.

Source: https://www.creativespirits.info/aboriginalculture/people/how-to-name-aboriginal-people

1.3.5 Racism and stereotypes

Stereotypes and prejudice can be major causes of **racism.** The Australian Human Rights Commission states that 'racism occurs when prejudice is accompanied by the power to discriminate against, oppress or limit the rights of others'.

Racism can change over time, can impact different communities in different ways and can intensify in different moments in time. An example of this was the spike in racism towards Asian-Australian people during and after the COVID-19 pandemic. Racism and prejudice can take many forms:

- making 'jokes' or negative comments about a particular group
- calling people names or verbally abusing them
- bullying or intimidating others because of their race or gender
- writing racist graffiti in public places
- making offensive comments online
- excluding others from groups because they're 'different' or 'don't belong'.

racism when prejudice is accompanied by the power to discriminate against, oppress or limit the rights of others

privilege unearned or unacknowledged advantages over others

TABLE 1.2 Anti-racism involves combatting prejudice and injustice and it can be learned.

Strategies to challenge personal prejudice and bias	• Acknowledge, understand and own your personal biases. • Reflect on why and how the bias developed. • Talk about your experiences and check your assumptions with someone: a parent, teacher, friend. • Admit that prejudice is a problem in Australia. • Consciously intend to be aware of prejudice. • Embrace individual difference in others.
Strategies to learn about prejudice and bias	• Seek out information about prejudice and inequality. Try researching websites such as **Racism. It stops with me**, the **Australian Human Rights Commission** or **ReachOut**. • Understand the idea of **privilege** and who it relates to and who it affects. • Accept the prejudice that others experience. Take your time to listen to the stories of others, don't interrupt or make assumptions, practise active listening.
Strategies to grow and act against prejudice and bias	• Call out racist jokes. • Encourage others to safely share their stories and experiences. • Step in and address prejudice directly if it feels safe and comfortable to do so. • Find someone who can help when you see prejudice occur. • If you don't feel safe to do so at the time, check in later with the person who experienced the prejudice and see how you can help. • Be an ally: make connections and show support for a specific marginalised group that you are not a member of. • Be an advocate: show support for a cause or movement or for leaders who are anti-racist and speak out against racism. • Educate your peers on racism and prejudice. • Support opportunities for marginalised people. • Be an activist: act for social or political change by campaigning or protesting.

Adapted from: https://onlinegrad.pepperdine.edu/blog/prejudice-discrimination-coping-skills/

1.3 ACTIVITIES

1 Disability or ability?

weblink

a. Read the article '**Our biggest barrier is your lack of expectations**' using the weblink in your Online Resources.
b. Outline the prejudice felt by the athletes in the article.
c. Explain how the Paralympic Games challenge the stereotypes of people with disabilities.
d. Discuss the significance of the quote: 'This is your time to not be the minority. It's the first time when you sit there and more people on the screen have a disability'.

2 Teen movies

a. List five stereotypes popular in teen movies (e.g. geek or jock).
b. Describe what characteristics are common to the stereotypes you listed in 1.
c. As a class, share your descriptions and compare the similarities between the stereotypes.
d. What impact could these stereotypes have on a teenager's identity formation?

3 Occupations

a. Compare three occupations you think are dominated by men and three you think are dominated by women. In your comparison, discuss why you think people choose to follow these different career paths. Consider the following aspects of work:
   - Peer acceptance
   - Nature of the occupation (e.g. physical work, highly social, caring)
   - Salaries and status.
b. Identify where these opinions on careers come from.
c. Describe the effect these opinions have on a young person's goal setting and career choice.

4 Everyday racism

An anti-racism research group based at the University of Western Sydney has developed a mobile app 'Everyday Racism'. This is based on experiences of First Nations Australians. The app challenges users to 'live a week in the life of a First Nations Australian man, a Muslim woman, an Indian student or just as themselves'. The app gives players daily scenarios where they are the target of racist behaviour. The user receives texts, tweets, images and videos that challenge them to understand the importance of speaking up when they witness racism.

a. Use table 1.2 to predict how the app would challenge prejudice, bias and stereotypes that lead to discrimination.

5 Addressing stereotypes

weblink

Use the **Understanding a different culture** weblink in your Online Resources to explore ways of addressing cultural stereotypes.

6 Discrimination and health

weblink

Use the headspace **Invisible discriminator** weblink in your Online Resources to watch a video on the impact of discrimination on the mental health and wellbeing of First Nations Australians.

1.3 Exercise

1.3 Exercise

Select your pathway

LEVEL 1	LEVEL 2	LEVEL 3
1, 3, 4, 5, 8	2, 6, 9	7, 10

These questions are even better in jacPLUS!

- Receive immediate feedback
- Access sample responses
- Track results and progress

Find all this and MORE in jacPLUS

Check your understanding

1. MC Which of the following are true about stereotypes? Select all options that apply.
   - A. They are very accurate and usually represent each individual perfectly.
   - B. They are based on assumptions and generalisations, and they often do not fit or represent the individual.
   - C. They usually have a positive impact on a person's sense of self.
   - D. They usually have a negative impact on a person's sense of self.
2. MC Stereotypes are created:
   - A. when we know very little about a group and can't appreciate their diversity.
   - B. by understanding the diversity of a group.
   - C. when we know a lot about a group.
   - D. to accurately represent specific groups of people.
3. MC Stereotypes can be based on:
   - A. race.
   - B. ethnicity.
   - C. gender.
   - D. All of the above
4. MC Where do stereotypes come from?
   - A. Society and the community
   - B. Personal experiences
   - C. The media
   - D. All of the above
5. Stereotypes can affect how people react to and treat each other. True or false?

Apply your understanding

6. **Describe** the role of 'gatekeepers' in creating stereotypes.
7. **Discuss** how gender stereotypes can influence people's expectations and their identity formation.
8. **Outline** in what situations stereotypes can be useful or positive.
9. **Explain** why stereotypes exist.
10. **Discuss** where stereotypes come from and who you think has the greatest influence over them.

LESSON
1.4 Emotions and relationships

LEARNING INTENTIONS

- Reflect on the possible consequences of not recognising your own and others' emotions.
- Evaluate situations in which you may react with extreme emotion, and reflect on the impact on relationships.
- Propose strategies for managing emotional responses and resolving conflict.

1.4.1 What is a relationship?

ENGAGE

FIGURE 1.16 Relationships and identity are intertwined.

Discuss the following prompts:

- Our relationships shape our identity.
- We cannot belong to multiple groups and be confident in our identity.
- Our identity changes when we belong to groups.
- Belonging is when people accept your identity.
- Our confidence in our identity comes from where we belong.
- Where we belong is influenced more by family than friends.

Relationships are associations or attachments formed either by choice (school friends, neighbours, teammates) or because you are part of a family (siblings, parents and other relatives). Relationships exist between all sorts of people, such as a parent and child, brother and sister, and intimate partners. As we mature, we place different importance on interactions with some people and our relationships change.

Relationships serve many purposes and may fulfil one or more of our social, intellectual, spiritual, emotional or physical needs. Depending on the relationship, these needs will vary. They may include the need for:

- a positive self-image
- safety and security

- trust in a relationship
- respect
- knowledge and learning
- independence
- equality
- inclusivity
- **commitment**
- hope
- intimacy
- food and shelter.

commitment committing to and believing wholeheartedly in a cause, be it a viewpoint, opinion, event, course of action or person

1.4.2 Relationship expectations

People can have different expectations and needs in a relationship and can express their feelings in different ways. These expectations may affect their interactions. We need to recognise our different needs, reactions and expectations when in a relationship. **Communication** is essential. Communicating our expectations and feelings allows the relationship to be effective and supportive.

communication the skill of being able to talk and listen to others

How we behave in certain relationships can determine whether we have a healthy, balanced relationship or not. Complete the **Behavioural expectations in relationships** worksheet in your Online Resources to explore the behaviours expected by individuals in different relationships.

doc-14810

FIGURE 1.17 Everyone needs people they can trust and communicate with.

1.4.3 Family

As you form your own personal identity, you may think differently from your parents, and have different values and beliefs. This can lead to conflict at home or breakdowns in communication. As a teenager, you want to be more independent and think and speak for yourself. This can take some adjustment for parents/caregivers. They can continue to be protective of you and want to influence what you do and how you do it. Ultimately, this is because they want what is best for you, but at times this can feel overbearing.

FIGURE 1.18 Family can influence us in many ways.

1.4.4 Friendships and peer groups

Friendships

The friendships we establish are usually based on common interests, such as hobbies or sports. We share fun, experiences, humour and memories with our friends. Friends may drift apart because their interests or situations change. This can mean they have less to talk about or less in common. This situation is not necessarily negative; it shows that individuals are maturing and reassessing their interests.

Positive, enduring and meaningful friendships give us much support and confidence. Such friendships are built on:

- loyalty
- trust
- respect
- confidentiality
- equity
- acceptance
- empathy
- understanding.

These kinds of friendships typically have the depth and support to survive challenges. However, friendships don't just happen; they must be worked on.

FIGURE 1.19 A lack of communication may cause a breakdown in a friendship.

Friendships are dynamic, and things change over time or as a result of circumstances. Just as a friendship can be a rewarding part of life, life can also be stressful when the friendship starts to falter. We may feel anxious, guilty, hurt or even jealous at these times.

Anger and resentment are common negative feelings we encounter when friendships unexpectedly fall apart. It is difficult to remain objective and to separate the problem from the person in these situations. We need to think carefully about the *reasons* behind the breakdown and work out ways to restore the friendship. Or we need to learn to continue without that person in our life. Often, a lack of communication — the inability to listen to and be honest with friends — causes breakdowns in a friendship.

Not all friendships are healthy. Some friendships can be destructive, especially if people have different values from their friends or become too dependent on them. Negative peer pressure can influence decision-making and impact on the lives of all involved.

Peer groups

A **peer group** is a group of people who are roughly the same age as you and are from a similar background. We tend to relate well to our peers because of these two factors and we value their comments and attitudes. A peer group can be a powerful influence in our lives.

FIGURE 1.20 Peer groups exert pressure because belonging is an important human need.

Belonging to a peer group has many benefits. We can feel secure and confident in the knowledge that our peers will assist us, accept us and support us through thick and thin. We trust the members of the group and we receive enjoyment from the activities we have in common and from the personal qualities we appreciate in each other.

There are times when you may feel pressured by a peer group to do something you are uncomfortable with. You may also still want to be accepted and part of the group. The decision about what to do will depend on the strength of your own convictions, personal confidence and assertiveness. The expectations of family and/or culture and the moral obligations you feel you must obey also play a role in decisions like this.

Sometimes there is a leader who directs the peer group into 'acceptable' activities and behaviours. If this leader is well-respected or asserts power in certain ways, then it is likely that the rest of the group will follow their actions. If members of the group don't want to do an activity the leader is directing them towards, this can become very difficult and stressful. Each group member needs to make a decision regarding the appropriateness of the activity. Pressure from the leader or other group members may add to the difficulty of making this decision.

peer group group of friends of a similar age with similar interests, often from a similar social background

1.4.5 Intimate relationships

Your relationship with a very close friend is an **intimate relationship**. Such relationships involve a high level of sharing, trust, affection, understanding and personal disclosure of information. Sexual attraction may also be a feature. **Sexual activity** or intercourse may form part of an intimate relationship, but you can have intimacy without being physically intimate.

intimate relationship close relationship with a high level of sharing, trust and understanding

sexual activity sexual behaviour; usually involves contact with the genitalia

1.4.6 Positive and respectful relationships

Characteristics of respectful relationships

Everyone has the right to feel safe, to be treated with fairness, to be valued and to feel accepted for who they are. Respectful relationships are important because they contribute to your growth and sense of self-confidence. They also promote healthy self-expression, awareness of yourself and others, and help you to feel accepted and free to be yourself. Some characteristics of positive and respectful relationships are:

- respect
- trust
- honesty
- equality
- safety
- consistency
- empathy.

DISCUSS

Can you think of someone with whom you have a healthy, respectful relationship? How is this person important in your life and how do you feel about yourself when you are with them? What characteristics are essential for you in a respectful relationship?

Being in a respectful relationship doesn't mean that you won't have differences of opinion or disagreements. However, in respectful relationships, when differences arise, they are dealt with in ways that lead to a resolution or understanding. Conflicts or differences occurring in respectful relationships can be worked out and do not have to damage the relationship.

DISCUSS

Can you think of a time when you sorted out a difference with someone close to you? How did you go about it and how has working things out changed your relationship for the better? What conflict resolution skills did you use?

FIGURE 1.21 Affection can be shown in many ways.

FIGURE 1.22 The characteristics of respectful relationships

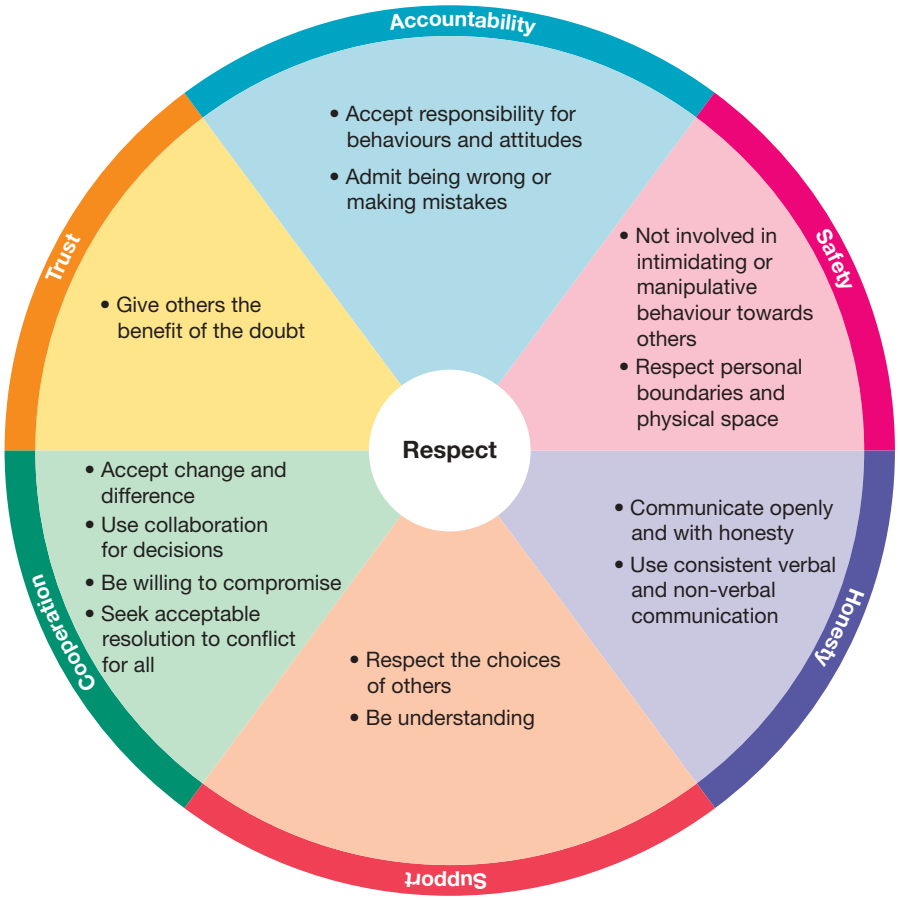


FIGURE 1.23 Every relationship in your life should be respectful.

Communication in relationships

Communication involves both talking (clearly conveying a message) and listening (understanding the message). When using positive communication, you show interest in and respect for others. This is important for positive relationships. It is a skill that requires practice.

Chatting about general events and greeting acquaintances (e.g. teachers, friends' parents or classmates) develops positive relationships or goodwill with people in your wider social network.

Effective communication allows you to:

- maintain friendships
- be part of valuable family relationships
- limit the misunderstandings that you have with people
- solve problems.

When communicating, your **body language** conveys non-verbal messages about what you are saying. The way you stand, your gestures, the placement of your arms, the look on your face and the eye contact you make all reinforce the words you use to communicate. Verbal cues such as tone, volume and pitch also contribute meaning to the words you use.

Sometimes, your body language can work against you. For example, when you are trying to be open with someone but have your arms crossed, it may give the impression that you are closing yourself off. Body language is also dependent on culture, so what may be okay in one culture may be offensive in another. You need to take care that your body language matches your words.

FIGURE 1.24 Eye contact is an important aspect of communication in many cultures. Communication involves both talking and listening.

We need to be sure that the words we use convey the messages we intend and that they express our feelings. Some people find it easier to write down what they would like to say, as this may be less threatening than face-to-face contact. It also allows them to make sure that their intended message is conveyed effectively. When you need to talk to someone in person about a difficult topic, it helps to be prepared before you speak to the person.

body language non-verbal cues that can be read from the way a person holds their body

DID YOU KNOW?

Research shows that hanging out with friends and family can increase your life expectancy. The more positive relationships a person has, the more likely they are to enjoy a healthy lifestyle.

Conflict resolution in relationships

Conflict sometimes occurs when people hold different views. Conflict is an inevitable part of life. People grow, adapt and clarify their beliefs and values by learning to resolve conflict.

Conflict can make people feel uncomfortable, guilty, frustrated, bitter and frightened. These feelings occur when people believe that there is a right and wrong way of looking at things. We need to recognise that we all have different thoughts, feelings and experiences and, therefore, see things differently. It is normal for people to hold widely differing points of view. Usually, they simply 'agree to disagree'.

Many differences of opinion can be accepted to avoid unnecessary conflict. For example, if you find that you are constantly in conflict with a person in your class, you may choose to accept your differences and sit on different sides of the room.

Conflict can be resolved through negotiation that aims to satisfy everyone. Some misunderstandings may be solved through effective communication — that is, by talking and listening to one another. Other conflicts may require some compromise to solve the problem. This may involve adjusting an opinion. Conflict resolution is a learned skill and, like any other skill, improves with practice.

When you experience conflict, try to use the following conflict resolution skills:

- Stay calm.
- Focus on solving the problem, not attacking the people involved.
- Recognise that other people may perceive the problem differently.
- Be open about how you are feeling and let go of negative emotions.
- When expressing your view, use only 'I' statements, such as 'I think …', 'I feel … ' and 'I want … ', rather than 'you said …' or 'you did …'.
- Listen to what each person is saying and check that you have understood their point of view. Keep an open mind.
- Look for a solution that will satisfy everyone — often, compromise is needed.

FIGURE 1.25 Conflict is inevitable in human relationships, so we need to develop strategies to deal with it.

Empathy

Empathy is the ability to relate to or identify with another person's feelings or situation, or to be able to put yourself 'in someone else's shoes'. Empathy helps strengthen relationships and creates openness between people. When empathy is present, people feel listened to and understood. When empathy is absent, people are less likely to be considerate of others' needs and feelings. Empathy is therefore a key tool in relationships.

Negotiating needs in respectful relationships

We all have different needs at different times. In relationships, give and take in terms of each other's needs is important. This is the case in all relationships, including friendships, family relationships and intimate partner relationships. So, how are these needs and differences negotiated in a respectful relationship? Respectful relationships acknowledge and consider everyone's needs. They acknowledge differences and try to accommodate them.

When you are in a respectful relationship, one person doesn't need to put their needs aside for the other person. At times, you will need to communicate your feelings to the other person so they can understand your needs. You may need to be flexible, but you should still be true to yourself. Respectful relationships are never about changing someone. They are about trying to understand things from their perspective, even if your perspective is different.

Assertiveness

Assertiveness is the ability to state your case without making someone else feel attacked. Generally, this is determined by the way something is said. Using 'I' statements is recommended to show your feelings about an issue. Such statements outline your view or feelings, but they also provide an opportunity for further discussion. They are not statements of fact or demands.
An 'I' statement looks like this:

> 'When (*a particular event happens*), I feel (*a certain feeling*). What I'd like is (*possible solution*).'

FIGURE 1.26 Having a strong sense of self-worth is important for resilience. Keep working on your strengths.

Being assertive takes practice. But with practice, we can:

- allow both sides to be heard
- not be judgemental
- keep confidentiality
- move forward in a positive way
- not take sides or lay blame
- try to achieve an outcome that is acceptable to both parties.

Sometimes it can seem easier to be passive in a conflict and not to assert yourself. However, being manipulated or bullied in a relationship can affect your self-esteem and leave you a feeling powerless.

If you are aggressive or have no respect for the feelings of others in the relationship, this can make the other person feel they are being treated unfairly. You may come to find that no-one respects you or your decisions. People could even become frightened of you.

doc-14811 Complete the **Being assertive** worksheet in your Online Resources to look at situations in which assertiveness is important. Explore the difference between being assertive, passive or aggressive in relationships.

Resilience

Resilience is a kind of flexibility that allows us to bounce back from difficult situations. Generally, the more resilient someone is, the more easily this occurs. Our resilience is influenced by our ability to:

- feel connected to family, friends, peers, school and our spirituality
- maintain a daily routine, which provides stability in times of chaos.

Table 1.3 outlines the key components of resilience (the 7 Cs), and provides some guidelines on practices that build and reinforce this skill.

TABLE 1.3 The 7 Cs of resilience, adapted from Dr Ginsburg (psychologist)

Competence	Trust your judgement, make responsible choices and face difficult situations	• focus on what you do well (your strengths) and build on them • recognise your goals • make safe mistakes
Confidence	Believe in your abilities	• see the best in yourself and what you do well • display qualities such as fairness, integrity, persistence and kindness • set realistic, high expectations
Character	Have a sense of right and wrong to ensure wise choices and a strong sense of self-worth	• understand that your behaviours affect other people • clarify your values • understand the importance to your community of not continuing racist, ethnic or hateful stereotypes • think of others' needs when making decisions or taking actions
Connection	Keep close ties to family, friends, school and community for a sense of belonging	• recognise that challenges on your path towards independence are normal • express and manage emotions effectively • go to other people for emotional support during difficult times • address conflict and work to resolve problems • take pride in the ethnic, religious or cultural groups to which you belong
Contribution	Take action and make choices that improve your sense of connection	• understand the value of serving others • seek opportunities to contribute in some specific way
Coping	Cope effectively with stress with a set of positive, adaptive coping strategies	• use step-by-step problem-solving rather than reacting emotionally when overwhelmed • care for your body through exercise, good nutrition, enough sleep and relaxation techniques
Control	Rather than 'everything always happens to me' thinking, know that you can make a difference in your life	• understand that most things happen as a direct result of someone's actions and choices • think about the future, but take it one step at a time • recognise even small successes • understand that no-one can control all circumstances, but everyone can shift the odds by choosing positive or protective behaviours

Adapted from The 7 C's: Practical Ways to Build Resilience in Kids. Option B.org. Originated from Ken Ginsburg et al. (2020) Building Resilience in Children and Teens: Giving Kids Roots and Wings.

Rights and responsibilities in relationships

Positive and respectful relationships are built on equality, respect and accountability. Each individual in a relationship has both rights and responsibilities. In any relationship, you have the right to:

- express your feelings and opinions
- feel safe and supported
- make decisions about yourself
- have equal decision-making power.

You also have the responsibility to:

- respect the other person's values, feelings and beliefs
- communicate clearly and honestly
- compromise
- be considerate.

Another aspect of being in a respectful relationship is acknowledging individual differences. You might make a decision about something, but the other person in the relationship might decide something different. Someone in the relationship may even change their mind after they have made a particular decision. How do you think this would make you feel? How could you respond in this situation? (Make sure you think about your rights and responsibilities in a relationship.)

doc-14812 Complete the **Relationships — rights and responsibilities** worksheet in your Online Resources to explore what rights you have in different types of relationships and your responsibilities towards others in those relationships.

DISCUSS

a. Outline the different relationships in which you are involved.
b. Discuss the importance of respectful relationships within our society using specific examples.
c. Using examples, discuss the consequences for individuals and the community of not maintaining respectful relationships.

1.4.7 Decision-making

How do we make responsible decisions? This can be difficult. We often feel that we have to sacrifice or compromise on things we enjoy to be responsible. When facing a difficult decision, ask yourself the following questions:

- What do I need to make a decision about?
- What are the options?
- What other information do I need to help me make the right decision?
- What influences my decision? Are my family, friends, school, culture or religion expecting a particular decision from me?
- What effect will my decision have on me and on other people?
- Who can help me make this decision? Do I have a support (e.g. parents/caregivers, friends, GP, school counsellor, teachers) that can give me advice or guidance?

1.4.8 Refusal skills

Skills that will assist you to deal with challenging or unsafe situations and avoid high-risk behaviours such as sexual activity, crime, drug use or violence are called refusal skills. Having refusal skills allows you to develop the ability to stand up for yourself. Without refusal skills, you may find yourself going along with a behaviour or decision simply because you don't know how to respond in these situations. You may be afraid of losing a friend, looking uncool or being left out of the crowd.

By practising 'saying no' in a variety of ways and in a variety of situations before you need to, you will be prepared for anything. Consider how you can use some of the skills in figure 1.27 to say 'no'.

FIGURE 1.27 Skills for being confident and assertive in challenging situations.

Make a joke.	Humour can lighten a serious mood and divert attention away from you and onto something else.
Give a reason why it's a bad idea.	Maybe you can't smoke because you want to be able to play rugby for the school or you don't want to drink because someone you know has a drinking problem.
Make an excuse about why you can't.	Maybe you have something else to do that will interfere. Or you have to be somewhere at a specific time. Or your mum will kill you. Whatever the excuse, stick to it.
Just say no, plainly and in a strong and determined manner.	Sometimes just saying no without argument or explanation is the best response.
Suggest an alternative activity.	By thinking of something better to do, you're offering everyone a way out of a choice or situation that perhaps stems from boredom.
Ignore the suggestion.	Act like you don't think the idea is even worth discussing and change the topic to something else.
Repeat yourself if necessary.	Sometimes it takes more than once, on more than one occasion. Be strong.
Leave.	If you don't like where things are headed, just leave. Others may just follow you.
Thanks, but no thanks.	You can be polite and just say you aren't interested because it isn't something you're into.
The power of numbers.	Make a pact with your friends to stick together and back each other up. In challenging situations 'we' feels stronger than 'I'.

doc-14814 To practise how to deal with challenging or unsafe situations, complete the **Challenging or unsafe situations** worksheet in your Online Resources.

Bystander behaviour

We all need help sometimes. Part of being in a respectful relationship is to help others when they need it. In particular, when considering safety, it is important to demonstrate appropriate upstander behaviour if you see someone being treated negatively. An **upstander** is someone who stands up for someone else when they see or know about bullying or other violent behaviours.

upstander someone who sees or knows about bullying or other forms of violence that is happening to someone else and speaks up for the person or acts on their behalf

Sometimes, people who witness bullying choose not to intervene. This can be for a number of reasons, including the fear of becoming the next target or not wanting to make the situation worse. This person is called a passive **bystander**. In situations where bullies face no opposition, they may interpret silence as encouragement to continue behaving badly. It is important for bystanders to judge how they can safely intervene to support a target. This is called being an active bystander, or an upstander.

bystander person who is aware that a bullying situation is occurring but is not directly involved in it

Bystanders can play an important role in influencing the outcome of a bullying situation. By deciding to step in and help someone, there is a greater chance the bullying will stop than if they were to do nothing. Not all bullying incidents are the same, and sometimes it can be difficult for bystanders to know how to intervene safely without making the situation worse for themselves and the target.

What can you do?

If you know bullying is happening, you can take the following steps to make sure that you are being an active bystander/upstander.

- Refuse to be a bystander. Don't take part or join in, remove yourself from negative groups, situations or conversations.
- Interrupt or distract the person doing the bullying behaviour.
- Call the person out or tell the person to stop the bullying behaviour in a calm, confident manner (if you feel comfortable and safe).
- Tell someone who can help or do something about the situation.
- Be aware of bullying policies at your school.
- Be an ally and support the person being bullied — let them know it is not okay and that you are there for them. Walk with them. Talk with them. Help them seek support.

Remember, bystanders have an important role to play in situations of bullying. Their actions can help to stop the behaviour. If you are not part of the solution, you are part of the problem, so let's end bullying.

1.4 ACTIVITIES

1 Friendship strengths

Choose one of your friendships. Use the following questions to describe this relationship and illustrate its unique nature.

a. Identify what makes the relationship special.
b. Describe the qualities or common interests that you and/or your friend have that make your friendship valuable.
c. Explain what happens when an incident arises that challenges the friendship, such as accusations, jealousies, misinformation or gossip.

2 Group pressure

Describe how you would feel and how you would act if your friends decided to:

a. skip school for the day and meet at the local shopping centre
b. boycott an exam that they think is unfair or unnecessary
c. make up an alibi for a friend who has been accused of shoplifting
d. graffiti a train carriage using spray cans
e. apply some 'pressure' on a group member who refuses to hold similar views to the rest of the group
f. wear swimming goggles to a party, just for fun
g. start running every morning
h. give the silent treatment to one of your group members.

3 Roleplaying relationships

In pairs, roleplay each of the following scenarios. Make sure you use open body language and effective communication skills. Practise choosing the right words so that you convey the message that you want the other person to receive.

a. *Mother and daughter.* The daughter is thinking about becoming sexually active and would like to use the pill. She feels like she should discuss this with her mother and seek her advice.
b. *Intimate partners.* The time seems right to consider sexual activity. You need to talk about the way you are feeling and discuss contraception options with each other.
c. *Teenager and parent.* You feel that you have no independence or freedom and are not appreciated at home. You seem always to be in trouble for doing the wrong thing and feel that you can do nothing right. You need to discuss the way you are feeling with your parent/caregiver.
d. *Two good friends*. You have been friends for a long time. You are beginning to feel intimate feelings for the other person, but you are not sure what your friend feels. You need to talk to each other about how things have changed and the way you now feel about each other.
e. *Couple in a relationship*. You have been going out for a long time but your relationship has started to break down. You are both unhappy and unintentionally hurting each other. You need to talk about how you are feeling and find a solution that is best for everyone involved.
f. *Girlfriends or mates*. You have been friends for a long time and know each other very well. However, you feel that you are drifting apart as you begin to mix with different peer groups and reassess your values. You are feeling isolated and guilty. You need to tell your friend how you are feeling.
g. *Same-sex partners.* You have been going out for a short time but you are happy about your relationship and want to talk to your friends about it. Your partner, however, does not want others to know about the relationship for various reasons. You need to talk to your partner about what you are going to do.

4 Friendship breakdowns

a. Discuss why you think some friendships break down.
b. Think about a friendship you have had that experienced a crisis.
  i. What strategies did you use to try to maintain the friendship after the crisis?
  ii. Which strategies worked for you and which did not? Why?
c. Create guidelines on how to end a friendship you are not comfortable with any more. Make sure your guidelines show respect for everyone involved.

5 Conflict resolution

Practise solving a small conflict in groups of three. Two people roleplay solving the conflict while the third person observes. The third person then provides feedback about the conflict-resolution skills used. For more practice, complete the **Refusal skills** worksheet in your Online Resources.

doc-14813

6 Relationship networks

a. Try listing all the relationships in your life. It may help to categorise them using a tree diagram or mind map.
b. Analyse how your personality, behaviour and role change in each of these relationships.

7 Healthy relationships

a. With a partner, discuss how you create and maintain healthy relationships, then answer the following questions.
  i. Which of your current relationships would you say are the healthiest?
  ii. Why is this?
  iii. What characteristics make these relationships healthy?

weblink

b. Refer to the **Healthy relationships** weblink in your Online Resources and read the ABCs of healthy relationships, then answer the following questions.
  i. What does A stand for? What does this mean?
  ii. What does B stand for? What does this mean?
  iii. What does C stand for? What does this mean?
c. To be aware, balanced and make healthy choices, you need the building blocks of the ABCs: communication, trust and respect. These are essential to a healthy relationship. What can you do if a relationship you are in is not respectful?

8 Taking back the power

For each of the scenarios below, discuss with a partner how you would respond and justify your answer. Refer back to the 'What can you do?' section of 1.4.9 for some ideas.

- *A boy in your school that you don't know very well keeps saying to other boys, 'Hey, stop acting like a girl' or 'That's so gay'.*
- *While waiting for a train after school, a friend of yours starts being mean to a kid because of their skin colour.*
- *During physical education classes, you notice that no-one picks a certain student for their team because they are less able to move quickly.*
- *At lunchtime, you hear someone ask a classmate who has same-sex parents which one is their real mum.*
- *In a class, you hear a friend of yours tell another student that they should go back to where they came from.*

1.4 Exercise

1.4 Exercise

Select your pathway

LEVEL 1	LEVEL 2	LEVEL 3
1, 2, 3, 4, 5	7, 8	6, 9,10

These questions are even better in jacPLUS!

- Receive immediate feedback
- Access sample responses
- Track results and progress

Find all this and MORE in jacPLUS

Check your understanding

1. MC Which personal characteristics are important for both people in an intimate relationship to possess? Select all possible answers.
   - A. Respect
   - B. Disrespect
   - C. Criticism
   - D. Trust
2. MC What are two differences between rights and responsibilities in relationships?
   - A. Responsibilities are what you are entitled to receive from a relationship. Rights are what you are obliged to give to the other person in the relationship.
   - B. Rights are what you are entitled to receive from a relationship. Responsibilities are what you are obliged to give to the other person in the relationship.
   - C. You have the responsibility to express your feelings and opinions, but you have the right to respect the other person's values.
   - D. You have the right to express your feelings and opinions, but you have the responsibility to respect the other person's values.
3. MC How can you tell if you have outgrown a friendship?
   - A. You may argue a lot and be unable to resolve conflicts.
   - B. You may find that your values and beliefs have changed.
   - C. You may not enjoy doing the same activities together.
   - D. All of the above

4. In a relationship, there should be an uneven balance of power. True or false?
5. MC Which of the following is NOT an example of a time you might need to use refusal skills?
   - **A.** Someone urges you to get in the car with a drunk driver.
   - **B.** Someone encourages you to try out rock climbing.
   - **C.** Someone pressures you into going to a party that you don't want to go to.
   - **D.** You are entering a situation that you feel is unsafe.

Check your understanding

6. **Examine** what needs our relationships satisfy.
7. **Describe** the elements that are important in fostering positive and respectful relationships.
8. **Explain** the difference between rights and responsibilities in relationships. Give an example of each.
9. **Outline** the difference between empathy and assertiveness.
10. **Justify** how the 7 Cs of resilience can help you transition through adolescence.

LESSON
1.5 Identity, emotional wellbeing and mental health

LEARNING INTENTIONS

- Consider the impact of identity formation on mental health.
- Use scenarios to express thoughts, opinions and beliefs that acknowledge the feelings of others and support good emotional wellbeing.

ENGAGE

After the COVID-19 lockdown began in 2020, #quaranteen appeared on social media.

How could the changes experienced by young people aged 12–24 years during 2020–22 have affected their identity and emotional wellbeing?

FIGURE 1.28 COVID-19 isolation and lockdowns were challenging for many teens.

1.5.1 Dealing with emotions

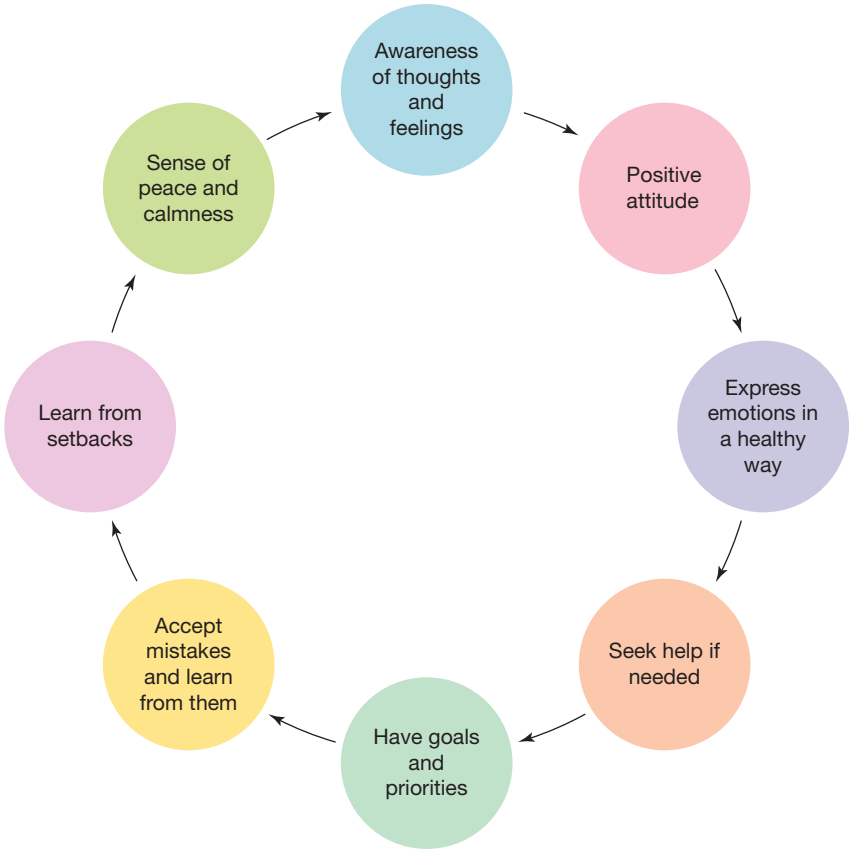
Every human feels emotion and experiences both positive and negative emotions. If we didn't experience negative emotions, we would not be able to recognise or value positive emotions. How we manage our responses to emotions can determine the impact those emotions have on our relationships. We need to do our best to make sure the number of positive emotions we experience outweighs the negative ones.

The transition through puberty is a time of changing emotions as you develop your identity and your place in each of the groups to which you belong. Good **emotional wellbeing** is important because this means you are in control of your thoughts, feelings and behaviours, which makes you better able to cope with life's challenges. It also supports a strong sense of self and allows you to keep problems in perspective and bounce back from setbacks.

doc-14815

emotional wellbeing awareness of and ability to cope with both positive and negative emotions

FIGURE 1.29 Aspects of emotional wellbeing



How emotions help us

What are you feeling right now? Are you curious? Are you happy you are in class discussing your emotions? Perhaps you had a fight with your best friend earlier and you are nervous about seeing them next? Emotions give us information about our experiences and help us know how to react. As we get older, we learn to understand our emotions better and how to keep control of them. We also become more knowledgeable about emotions and better at understanding why people react the way they do in certain situations.

To build better relationships, we need to be able to determine what we need and want. Being aware of our emotions can help us talk about our feelings more clearly, avoid or resolve conflicts better, and move past difficult feelings more easily.

Can you identify a time when you reacted a certain way, but in hindsight you realise you lost control of your emotions and you could have reacted differently? Now, identify a time where you kept your emotions under control, but things could have turned out very differently if you had not. How did the outcomes differ? What does this tell you about the importance of managing your emotions for building positive relationships?

How transitions can affect emotions

Adolescence is an important stage for young people. It is a time for exploring your feelings and learning how to be comfortable with them and express them to develop respectful relationships. Emotional wellbeing is associated with an increasing ability to perceive, assess and manage emotions. The ability to manage emotions involves:

- learning to recognise and describe strong, complex emotions
- developing the reasoning and abstract thinking skills that enable us to reflect on and examine our emotions
- developing the ability to consider possible consequences before acting.

During adolescence, hormones cause physical changes and heighten moods and emotional responses. The 'feeling centres' of the brain are much more sensitive during this time, which results in extreme emotional fluctuations and sudden intense feelings. You may also be more easily swayed by emotion and have difficulty making the kinds of decisions that adults may find more appropriate.

Adolescence is also a time of rapid and stressful changes in relationships and expectations. Your body responds to stress by activating specific hormones that help you to respond quickly and perform well under pressure. This occurs more quickly for teenagers than it does for adults.

How we feel about ourselves and our talents, values, beliefs, characteristics, relationships and life experiences can affect our sense of worth. This creates a wide range of stressors. Learning healthy responses to stressful situations is part of normal development.

FIGURE 1.30 The transition from adolescence to adulthood involves major changes in the brain. A range of stressors can affect emotional and mental wellbeing at this time.

1.5.2 Handling changes and transitions

Social influence

Adolescence is a time for developing the skill to control impulses, think ahead and resist pressure from others. Sometimes, particularly in emotional situations, the influence of friends can be hard to resist. This can become 'peer pressure', and you may feel you have to do something you're uncomfortable with. The physical and emotional changes at adolescence mean young people can be drawn to the immediate rewards of a choice without giving much attention to the risks.

Young people can be quite good at making decisions when they are on their own or have time to think. However, when decisions need to be made quickly or in social situations, decision making is quite often influenced by external factors such as friends.

weblink Use the **Peer pressure and fitting in** weblink in your Online Resources to consider social pressure on young people.

Social conditions

Due to a range of pressures (e.g. school, work, families, relationships, social media and the transitions involved in moving into young adulthood), teens today are under what seems like more stress than ever before. There is ongoing pressure to mature quickly and to have your life and career figured out by the time you start middle school.

As the brain is still developing in adolescence, decisions tend to be made in the part of the brain connected to impulses, emotions and aggression. This explains why teenagers are more likely to:

- seek excitement and engage in risk-taking behaviour
- make choices on impulse
- behave unpredictably
- be highly emotional
- focus on short-term gains
- have difficulty delaying gratification
- be susceptible to peer pressure
- fail to anticipate the consequences of choices.

Should I stand out or fit in?

Transitioning into young adulthood brings with it the challenge of finding your place among your peers and achieving a sense of belonging. You may choose to try to fit in, perhaps out of concern about being judged. Or you may choose to stay true to yourself and stand out. This can relate to what you wear, what you do and how you treat others (e.g. standing up to bullying, being an activist or participating in rallies). When expressing yourself means getting judged by others, it can be very difficult.

Relationships

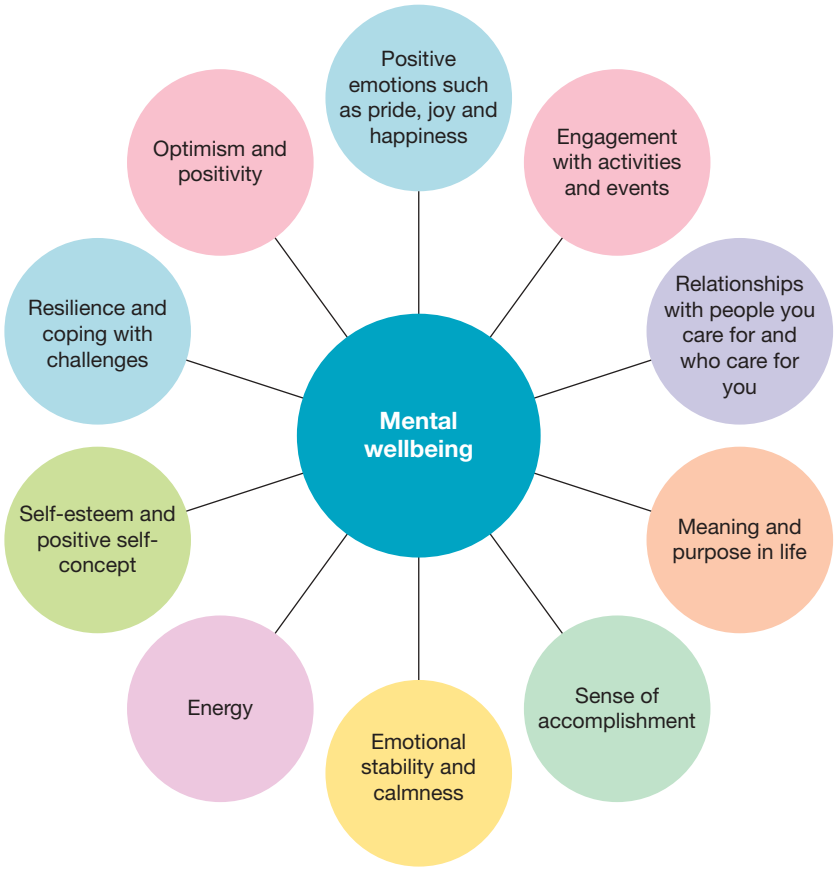
Intimate relationships can be a common topic of conversation and a major cause of strong emotions in adolescence. These emotions can be positive (e.g. excitement and happiness) or negative (e.g. jealousy, anger or distress). The relationships you have in adolescence and how you respond to them form the foundation for your romantic relationships in adulthood.

1.5.3 Mental health in young people

Mental health is more than just the absence of mental illness. It affects our thinking processes, the way we behave and the way we feel. Good mental health means we are generally confident, positive, rational, decisive and calm. We are able to cope with general day-to-day events and challenges, work towards personal goals

and function as effective members of the community. Good mental health and wellbeing mean feeling good and functioning well. During adolescence, mental health can be a roller coaster of emotional highs and lows. Intense feelings are a normal and healthy part of this stage, but many mental health disorders of adulthood begin in childhood or adolescence.

FIGURE 1.31 Aspects of positive mental health



Some common experiences that can affect your wellbeing and increase your vulnerability to developing mental health difficulties are:

- feeling 'different' from other people around you
- bullying about your gender or cultural identity, whether verbal or physical
- feeling anxious about being bullied (e.g. due to past experiences of prejudice)
- feeling pressure to deny your feelings regarding your identity within certain groups
- feeling worried about being rejected or isolated because of aspects of your identity
- feeling socially isolated
- feeling unsupported or misunderstood.

1.5.4 Getting help

While people with more than one mental disorder are more likely to seek medical assistance, unfortunately not all people with mental illness seek help. There is a need to increase community awareness of mental health and wellbeing.

Even though the number of people with a mental illness is large, there is still a stigma or feeling of shame attached. This may be the reason that some people don't get help when they need it. This stigma can make people feel embarrassed about what is happening to them. They may feel alone and like no-one else would understand how they are feeling. It is important to get help before things get worse.

As you move through adolescence and experience increasing independence and evolving relationships, it is likely that the source of help you seek for a personal or emotional problem will change. Being able to talk to someone you trust can be a relief. Talking to someone can help you release the tension you feel, because it's no longer just you that knows how you feel. It can also help you see the issues more clearly for yourself. In this way, you can regain a sense of control. Sometimes our thoughts and feelings can almost overwhelm us and the situation can become bigger than it needs to be. Talking to someone else can put things into perspective.

Supporting a friend or family member

You may find yourself in a position where you are supporting someone with mental health needs. Consider the following ways you can help:

- Be conscious of the embarrassment or shame they may feel; respect your friend or family member's right to privacy.
- Let them talk about their problems – it makes them feel heard.
- Try not to judge them. Understand that having a mental illness is like having a physical illness. It has created a chemical imbalance in their body. Let them know that you don't think any less of them because of it.
- Have faith in them. They are probably trying to get better, even though they may be feeling like it's never going to happen.
- Compliment them when they do things that will help them get better. To know what those things are, research as much as you can about their illness. This will also show them that you care about them.
- Encourage them to stay on any medication that they have been prescribed.
- Look after yourself. Ensure you don't get so involved in their illness that you stop doing all the things you enjoy — that will make them feel worse.

FIGURE 1.32 Just spending time with a friend can help them not to feel isolated.

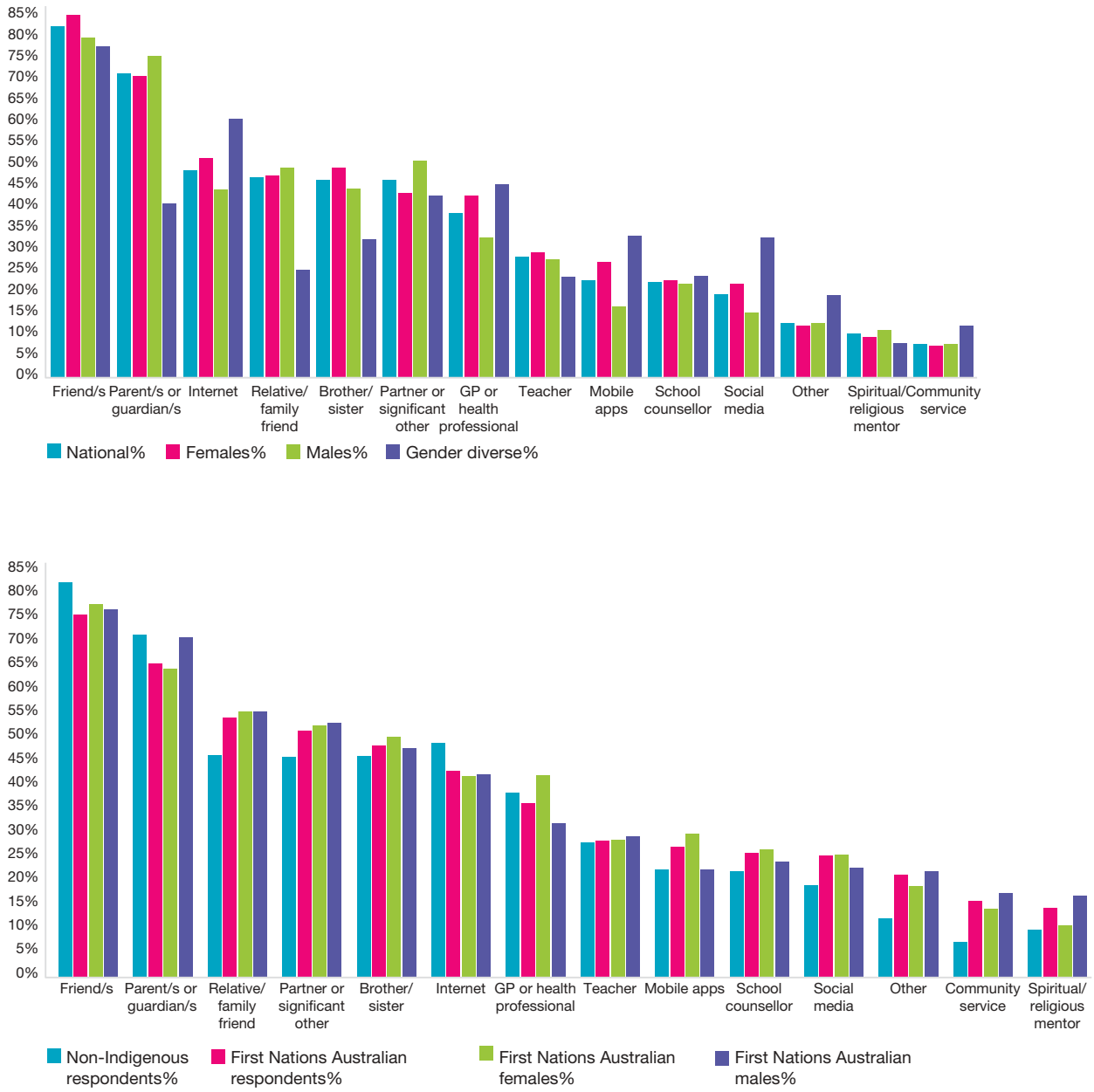
Without belittling their concerns (which are important to them), help them get some perspective by putting the problem into context. Remember to keep the lines of communication open. It is helpful for them to know

they have someone who is willing to talk and to listen. It could be a good idea to have the contact numbers or websites for Kids Helpline and Beyond Blue so that you can contact them if a situation seems to get out of control. Often, just spending time with a person suffering a mental illness is the most helpful thing you can do, so they don't feel socially isolated.

Support services

There are people and services available within the community that can provide support to young people in a range of areas, including providing assistance with emotional, physical and mental health issues. Support may be accessed through the student services area at your school. Most schools offer a range of support people and programs and they can connect students and their families with community support services. The Mission Australian annual Youth Survey reports on where young people commonly go to for help. Top sources of help include friends, parents or guardians, the internet, and relatives/family friends or siblings.

FIGURE 1.33 Mission Australia Youth Survey — Where young people go to for help with important issues



Source: Data based on Mission Australia Youth Survey Report 2021, p. 23 & 37. Mission Australia.

Community support services may include, but are not limited to:

- your local GP
- your local community health centre
- Beyond Blue
- Black Dog Institute
- headspace
- Orygen
- ReachOut
- Head to Health
- support groups that are funded by a range of organisations, such as not-for-profit, local government or religious centres
- local government programs
- maternal and child health centres
- Lifeline
- Kids Helpline.

There are also many great websites with information that can help you deal with mental illness. For example, ReachOut is an organisation designed to improve young people's mental health, and they supply information and referral services that young people can access. Use the weblinks in your Online Resources to check out this and other useful websites.

weblink

1.5.5 Some tips for positive mental health

There are many things you can do to keep yourself mentally fit, healthy and happy. It is important to remember that all aspects of your health — physical, mental and emotional — are connected, so changes in one area can affect the others. The following are some suggestions that may assist you in feeling good and staying in control of your life. Can you think of any more?

- Eat well
- Sleep well
- Exercise
- Find a hobby
- Spend time with friends and family
- Talk about your feelings
- Take time to chill out and relax
- Set goals
- Reward yourself
- Ask for help if you feel like you need it

DID YOU KNOW?

To build and maintain your mental health, there are three things you can do:

ACT Keep yourself as active as possible, physically, socially and mentally. You can do this by walking, swimming, reading or meditating.

BELONG Connect to your community by joining a group, chatting to a neighbour or meeting a friend.

COMMIT Do something meaningful and important to you. Try something challenging, or become a volunteer.

Source: Mental Health Council of Australia.

1.5 ACTIVITIES

1 Transitions and mental health

Use section1.5.1 and the information in this topic to write a paragraph about how the transition through adolescence can create stress and reduce mental health and wellbeing.

2 Refusal skills

a. Identify some situations that might increase the likelihood of you considering or being offered drugs or alcohol.
b. See the 'refusal skills' in section 1.4.8. How can these skills help you to say 'no' if a friend offered you drugs or alcohol?

3 Protecting yourself

Someone you like a lot wants you to take nude pictures of yourself and send them by phone.
a. Explain the role of social influence in this scenario.
b. Identify the positive and negative emotions you might feel in this situation.
c. Outline the steps you would take in this situation and justify your response.

4 Giving help

Write a dialogue between two friends in which one helps the other with their mental health using the prompts in section 1.5.5.

5 Building optimism

a. Look back through this topic and explain why this period of transition might create psychological distress for some young people.
b. Use the information in the topic to write a paragraph on why you feel optimistic that good mental health and wellbeing could be achieved. Things to consider could include:
- aspects of emotional wellbeing that can be a focus
- peers and relationships
- aspects of mental wellbeing that can be a focus
- support services
- tips for positive mental health.

6 Emotions

doc-14815

Complete the **Emotional responses** worksheet in your Online Resources to explore a range of situations and how your emotional responses might affect your interactions with others in those situations.

7 Take a step

weblink

Use the headspace **Take a Step** weblink in your Online Resources to better understand the connection between identity and the mental health and wellbeing of First Nations Australians.

1.5 Exercise

1.5 Exercise

Select your pathway

LEVEL 1	LEVEL 2	LEVEL 3
1, 2, 3, 4	5, 6, 8	7, 9, 10

These questions are even better in jacPLUS!

- Receive immediate feedback
- Access sample responses
- Track results and progress

Find all this and MORE in jacPLUS

Check your understanding

1. The transition through puberty and finding your identity is a time of positive and calm emotions for all young people. True or false?
2. MC Anxiety disorders:
   - A. involve harmful use of and addiction to drugs.
   - B. are characterised by changes in behaviour, lack of interest in previously enjoyable activities, becoming distant from friends and families, and denying there is a problem.
   - C. are characterised by mood swings, loss of enjoyment of life, fatigue and lack of concentration.
   - D. generally cause feelings of excessive nervousness, stress, tension and distress.
3. MC What common experiences can increase your risk of poor mental health in adolescence? Select all possible answers.
   - A. Feeling different from others around you
   - B. Being discriminated against and bullied for your culture or gender
   - C. Feeling pressure to deny your feelings regarding your identity
   - D. Being worried about being rejected or misunderstood
4. MC Emotions are generally:
   - A. positive in nature.
   - B. negative in nature.
   - C. positive and negative.
   - D. bad to experience.
5. MC Which of the following is NOT a way you can improve your mental health?
   - A. Communicating with friends so that relationships develop and strengthen
   - B. Limiting time spent with friends and family
   - C. Being honest with yourself
   - D. Eating nutritious food and getting enough sleep

Apply your understanding

6. **Explain** how emotions can affect relationships.
7. **Describe** how sense of self, health and wellbeing are related. **Explain** what this means for people who experience discrimination based on their identities.
8. If you were struggling with depression, **propose** the strategies or resources you could use. In what ways would you like your friends to support you?
9. **Reflect** on a situation in which you reacted with negative emotions. **Propose** how you could have changed your response to the situation to improve the chances of a positive outcome.
10. **Examine** if there are stereotypes about the way young people transition through adolescence. **Consider** the impact this might have on mental health and wellbeing.

LESSON
1.6 Review

Hey students! Now that it's time to revise this topic, go online to:

Review your results

Watch teacher-led videos

Practise questions with immediate feedback

Find all this and MORE in jacPLUS

1.6.1 What have I learned?

- Every person is different; each of us has our own personal identity.
- Our personal identity is made up of our past achievements, our present views and our goals for the future.
- Our identity is shaped by our family, friends, culture and community.
- Cultural influences have a major impact on shaping personal identity.
- Stereotypes can limit a person's ability to express themselves comfortably in society.
- Gender stereotypes can cause an imbalance of power in some relationships.
- Communicating our expectations and feelings allows a relationship to be positive and respectful.
- Relationships serve many purposes and may fulfil our social, intellectual, spiritual, physical and/or emotional needs.
- Everyone has rights and responsibilities in relationships.
- Everyone in a relationship has the right to feel safe, valued and respected.
- Balance of power in relationships means that a relationship is not one-sided.
- The friendships we establish are usually based on common interests; however, they are also dynamic and constantly changing.
- Friendships are crucial to our wellbeing and essential for forming our identity.
- A peer group is a group of people of similar age and background. Peer groups can be very influential in our lives.
- Intimate relationships involve strong emotions and may involve sexual intercourse.
- With increased independence comes more responsibility. Making your own decisions requires you to be responsible for the choices you make.
- Conflict resolution involves successful negotiation to solve a problem. Like any skill, it benefits from practice.
- Communication and cooperation skills are necessary to cope effectively with changes in relationships.
- Communication involves talking (clearly conveying a message) and listening (understanding the intended message).
- Being an active bystander/upstander in bullying situations helps stop the behaviour.
- Identity development and transitions can affect emotions and create a risk of poor mental health.
- Mental illness affects many Australians, including young people. Mental disorders include anxiety disorders, affective disorders and substance-use disorders.
- There are many print, web-based, telephone and face-to-face support services available for young people.

ESSENTIAL QUESTION REVIEWED

- Through the ups and downs of teenage life, how do you cope with changes and emerge with a greater sense of who you are?

Evaluate your initial response to the essential question now that you have studied the topic.

Resources

Interactivity Crossword (int-8996)

1.6.2 Key terms

behaviour patterns the way in which we behave; can be similar in certain situations
beliefs a philosophy or viewpoint on issues
body language non-verbal cues that can be read from the way a person holds their body
bystander person who is aware that a bullying situation is occurring but is not directly involved in it
commitment committing to and believing wholeheartedly in a cause, be it a viewpoint, opinion, event, course of action or person
communication the skill of being able to talk and listen to others
conflict a difference of opinion
cultures more than one culture as First Nations Peoples are not homogenous
diversity the differences between people and groups of people, including those of culture, race, religion, gender, and life experience. Diversity means understanding that each individual is unique and recognising individual differences.
emotional wellbeing awareness of and ability to cope with both positive and negative emotions
gatekeepers people or things that control our access to ideas or information
gender identity how you perceive your gender, how you show this to others, and how you want others to treat you
gender stereotypes generalisations (not necessarily accurate) of how individuals of a certain gender should behave or conduct themselves
independence the ability to think, decide and act for yourself, giving consideration to, but without being adversely influenced by, other factors, pressure, coercion or opinions
intimate relationship close relationship with a high level of sharing, trust and understanding
peer group group of friends of a similar age with similar interests, often from a similar social background
personal identity the qualities, skills, attitudes and beliefs that make each individual unique
privilege unearned or unacknowledged advantages over others
racism when prejudice is accompanied by the power to discriminate against, oppress or limit the rights of others
sexual activity sexual behaviour; usually involves contact with the genitalia
socialisation the way we are brought up and expected to behave in society, often based on gender
stereotypes conventional views or ideas (not necessarily accurate) about a group of people
upstander someone who sees or knows about bullying or other forms of violence that is happening to someone else and speaks up for the person or acts on their behalf
values beliefs about what is important and what is right or wrong

1.6 Exercise

1.6 Exercise

Select your pathway

LEVEL 1	LEVEL 2	LEVEL 3
1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 19	13, 15, 16, 17	11, 12, 14, 18

These questions are even better in jacPLUS!

- Receive immediate feedback
- Access sample responses
- Track results and progress

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Check your understanding

Identify whether the following statements are true or false.

Statement	True or false
1. Societal values can help shape your identity.	
2. During adolescence, as we develop our independence, we generally become more understanding of others' values.	
3. Gender roles and stereotypes can sometimes cause problems in relationships because there may be an imbalance of power.	
4. Gender stereotypes in sport have not changed.	
5. People can have different needs and expectations in relationships.	
6. It is a negative thing to be part of a peer group.	
7. In an intimate relationship, there is a high level of sharing, trust, affection and understanding.	
8. If you have a mental health problem, you will become isolated, as there is not much support available.	
9. How we manage responses to emotions in ourselves or others can determine the impact those emotions have on our relationships.	

Apply your understanding

10. **Describe** how taking responsibility can make others respect you more.
11. **Outline** who you think has the most influence on your values and attitudes. **Elaborate** why.
12. Think of a stereotype you have heard regarding teenagers. **Analyse** whether this stereotype is typical of all teenagers. If not, propose how you think it came about.
13. **Describe** how positive peer pressure can be beneficial in an adolescent's life.
14. **Identify** how people deal with conflict. **Determine** which strategies are most effective in leading to mutual understanding.
15. **Describe** what makes a relationship positive and respectful.
16. **State** how many adolescents on average are affected by mental illness.
17. **Identify** how aspects of identity can create a risk for poor mental health.
18. **Discuss** where you could find help dealing with a mental illness.
19. **Give** one example of how the transition from adolescence to adulthood requires management of emotions.

Hey teachers! Create custom assignments for this topic

Create and assign unique tests and exams

Access quarantined tests and assessments

Track your students' results

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Online Resources

on Resources

Below is a full list of **rich resources** available online for this topic. These resources are designed to bring ideas to life, to promote deep and lasting learning and to support the different learning needs of each individual.

Topic PDF

- 1.1 Identity, changes and transitions (tpdf-3589) ☐

Digital documents

- 1.2 My identity (doc-14802) ☐
- Cultural differences (doc-14804) ☐
- Media messages (doc-14805) ☐
- Express yourself (doc-14806) ☐
- Mapping independence (doc-14807) ☐
- 1.4 Behavioural expectations in relationships (doc-14810) ☐
- Being assertive (doc-14811) ☐
- Relationships — rights and responsibilities (doc-14812) ☐
- Challenging or unsafe situations (doc-14814) ☐
- Refusal skills (doc-14813) ☐
- 1.5 Emotional responses (doc-14815) ☐

Video eLessons

- 1.1 Identity, changes and transitions (eles-6098) ☐

Interactivities

- 1.6 Crossword (int-8996) ☐

Solutions

- 1.6 Answers: topic 1 (sol-1053) ☐

Weblinks

- 1.2 Walking in two worlds ☐
- Learning to navigate your cultural identity ☐
- 1.3 Teenager stereotypes ☐
- Missing: Young People in Australian News Media ☐
- Our biggest barrier is your lack of expectations ☐
- Understanding a different culture ☐
- Invisible discriminator ☐
- 1.4 Healthy relationships ☐
- 1.5 Peer pressure and fitting in ☐
- Mental health myths ☐
- headspace campaigns ☐
- Beyond Blue ☐
- Youth support ☐
- depressioNet ☐
- headspace ☐
- It's all right ☐
- ReachOut ☐
- SANE ☐
- Take a step ☐

Teacher resources

There are many resources available exclusively for teachers online.

To access these online resources, log on to **www.jacplus.com.au**.

2 Sexuality and sexual relationships

LESSON SEQUENCE

2.1 Overview 55
2.2 Sexuality and gender stereotypes 56
2.3 Gender equality and respectful relationships 66
2.4 Consent 76
2.5 Challenging stereotypes and assertive communication 86
2.6 Review 94

FIGURE 2.1 When you consider differences in others, you can either tolerate, accept or respect these differences. What are the implications of each of these responses for individuals who, for example, have a different sexual orientation to you?

LESSON
2.1 Overview

Hey students! Bring these pages to life online

Watch videos

Engage with interactivities

Answer questions and check results

Find all this and MORE in jacPLUS

2.1.1 Sexuality and relationships

As you grow and mature, you will begin to explore your sexuality. To keep yourself safe and healthy, it is important for you to be in control of your own sexual health, attitudes and behaviours. You will discover the characteristics that are important to you in sexual relationships, such as trust, respect and communication. It is important to consider the impact of stereotypes, inequality and power. Challenging stereotypes and developing empathy can promote inclusion and respectful relationships.

ESSENTIAL QUESTION

- Why are gender equality, respect, empathy and consent so important in sexual relationships?
- What strategies can be used to challenge stereotypes and promote gender equality?

STARTER QUESTIONS

1. What attitudes, values and assumptions can influence intimate relationships?
2. Why is gender equality important in relationships?
3. What rights, responsibilities and choices do you have in sexual relationships?
4. Do you know how to give and receive consent?
5. Do you know how to communicate assertively to challenge prejudice and stereotypes?

on Resources

Video eLesson Sexuality and sexual relationships (eles-6099)

LESSON
2.2 Sexuality and gender stereotypes

LEARNING INTENTIONS

- Analyse messages about sexuality, stereotypes and prejudice, gender norms and gender equality and consider their impact.

2.2.1 Exploring sexuality, values and attitudes

In this lesson, you will explore sexuality, including the differences between **sexual orientation**, **sexual behaviour** and **sexual identity**; the views and assumptions that are made about sexuality; and the stereotypes that arise from these views and assumptions. You will have the opportunity to think about and discuss your own views, assumptions and values about sexuality.

ENGAGE

weblink

On 17 May 1990, homosexuality was declassified as a mental disorder by the World Health Organization. On this date, the global community now observes the International Day Against Homophobia and Transphobia to help change community attitudes towards sexuality. Various past themes for IDAHOBIT have been 'Our Bodies, Our Lives, Our Rights', 'Justice and Protection for All', 'Breaking the Silence' and 'Together: Resisting, Supporting, Healing!'

Suggest some things that communities can do to help young people through adolescence and, more specifically, encourage discussions about sexuality in an open but safe way.

FIGURE 2.2 17 May is the International Day Against Homophobia and Transphobia.

2.2.2 Sexuality

Sexuality is more than just whether you are male or female, or whether you are attracted to males or females. It reflects personal identity, feelings and emotions, and how we think about ourselves and about relationships. Sexuality is about more than just sex. It is experienced and expressed in a variety of ways, including as thoughts, desires, beliefs, attitudes, values, behaviours, roles and relationships.

Sexuality is something that changes and develops as we mature. It can be a confusing and wonderful part of life and is something that everyone experiences.

How we deal with our sexuality is affected by a range of factors, including:

- personal background
- support systems
- culture
- experience
- personality.

sexual orientation a person's sexual or romantic attraction to another person; can include, but is not limited to, heterosexual, lesbian, gay, bisexual and asexual

sexual behaviour a broad range of behaviours in which we display our sexuality

sexual identity how you think of yourself in terms of who you are romantically and/or sexually attracted to

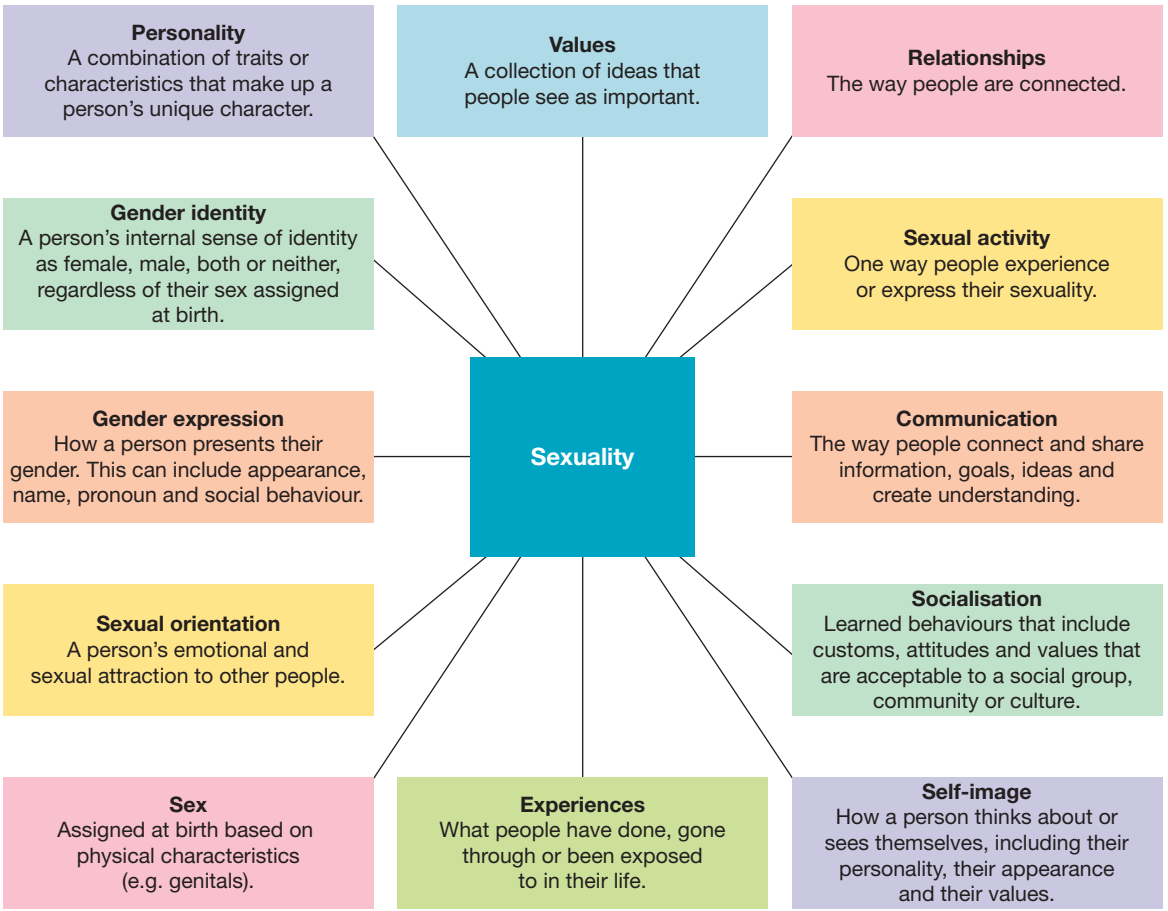
sexuality how you see and express yourself sexually

By being open about sexuality, we can come to understand:

- our own sexual behaviour
- our experience of gender roles
- what makes a respectful relationship
- how to communicate with our intimate partners
- how to prevent sexual health problems
- when and if we want to have children
- our expectations about pregnancies (wanted/unwanted)
- the impact of discrimination
- how to avoid sexual violence.

As well as involving a strong connection with another person, sexuality is a form of emotional expression. It has a significant impact on your identity and your sense of self-worth. Being supported and feeling safe to explore and express your sexuality promotes confidence and positive thoughts, and reduces stress and anxiety. In other words, it is good for your mental health.

FIGURE 2.3 Sexuality is how we see our bodies and how we express ourselves in relationships.



2.2.3 Values, attitudes and sexual health behaviours

The **World Health Organization (WHO)** says that the sexual development of a person is directly linked to their gender identity, and it unfolds within specific personal contexts. A person's sexual development has physical, psychological, emotional, social and cultural dimensions. In many communities, young people are exposed to and form opinions about sexuality based on several sources of information (e.g. their parents, teachers and peers, religion and the media). These can present them with alternative or even conflicting **values** about gender and sexuality.

World Health Organization (WHO) responsible for leadership of global health matters for the United Nations

values beliefs about what is important; guide our attitudes and behaviour

Values

Values are shown by what we think, feel, do and say about something. Consider how the values listed in table 2.1 influence what we think, feel, do and say in relation to sexuality. What sexual actions reflect these values? What value is upheld in someone's belief that sexual intercourse should only happen within marriage? What about the belief that it is important for teenagers to know how to use birth control and practise **safer sex** (use condoms)?

safer sex protecting the health of both you and your sexual partner

TABLE 2.1 Examples of core values relating to sexuality

- Freedom
- Security
- Loyalty
- Connection
- Respect
- Diversity
- Integrity
- Love
- Openness
- Self-Respect
- Honesty
- Communication
- Affection
- Empathy
- Sensitivity
- Generosity

Values like empathy, sensitivity, generosity, honesty and respect are important in intimate relationships. Upholding these values also encourages greater equality and less prejudice and discrimination. Being clear about your sexual values also means you are being clear about the sexual behaviour you feel comfortable with.

Attitudes

Attitudes are learned values. They are based on the beliefs and assumptions we hold. We use our attitudes to respond to people and situations and make decisions. They also affect our behaviours. Attitudes can change if we have favourable experiences.

Decisions you make now in regard to your **sexual health** and wellbeing could affect the decisions you make and the actions you take in the future. It's important to feel in control and make decisions that are right for you. In this way, you can help make sure that your intimate relationships are respectful and healthy and your sexual health is good.

sexual health a positive approach to sexuality and sexual relationships; having safe and pleasurable sexual experiences, free of coercion, discrimination and violence

Sexual health behaviours

The current WHO working definition of sexual health is:

> Sexual health requires a positive and respectful approach to sexuality and sexual relationships, as well as the possibility of having pleasurable and safe sexual experiences, free of coercion, discrimination and violence. For sexual health to be attained and maintained, the sexual rights of all persons must be respected, protected and fulfilled.

Besides values and attitudes, many other factors could influence your sexuality and sexual health behaviours. Understanding these factors helps us understand people's unique sexual responses and sexual health behaviours.

FIGURE 2.4 How would decision-making and sexual health be affected by the following attitudes?

Education/knowledge

The more informed you are about sexual health matters (such as STIs and keeping yourself safe), the more confident you can be in making the right decisions for yourself. You don't need to do what everyone else is doing; you need to do what is best for you.

- Are you confident in talking to your parents about sexual health? Does your school provide you with adequate education in order for you to make informed choices about your sexuality? How have you been educated about your sexual health?

Cultural factors

Sexuality can be influenced by cultural heritage, sociocultural factors (e.g. peer behaviour, your personal beliefs about sexual health behaviours and the behaviours of others), religious beliefs and parental approval.

- Do you have any pressures on you (in regard to sexual health) as a result of cultural factors? What would happen if you didn't abide by these cultural pressures? Have your parents put any expectations on you? Do your friends/peers pressure you in any way?

Media

Movies, advertisements, magazines and video games can portray unrealistic sexual behaviours and stereotypes. Music can often contain sexually explicit lyrics and promote an unequal balance of power in relationships. These influences can affect your sense of sexual identity. They can influence your understanding of cultural norms when it comes to sexuality, power in relationships and what are acceptable sexual behaviours.

- Has your behaviour been influenced by the media you watch?

FIGURE 2.5 Many factors, including culture, affect our sexuality and sexual health behaviours.

Biological/health-related factors

Hormones affect an individual's sexual behaviours and sexuality. Contraception, fear of pregnancy and fear of catching an STI can all influence your sexual health behaviours.

- Are you confident that if you were to become sexually active now, you would be able to keep yourself safe/healthy? How do hormones influence sexual behaviours?

Psychological factors

Your body image and self-esteem can influence your sexuality and sexual behaviours. How you feel about yourself plays an important role in forming your sexual identity.

- Do you think people with higher self-esteem have more of a sense of control over their own sexuality? How might someone's sexual behaviours be influenced if they have a negative body image and low self-esteem?

Sexual orientation

It can be a confusing time when you have to deal with sexuality as part of defining your personal identity. Who you are attracted to, or who you think you are attracted to, can have a huge influence on your sexuality and sexual health behaviours. Research has shown that an increasing number of young people are prepared to come out as experiencing same-sex attraction.

- Do you think it is easy for young people to determine their sexual orientation? How would someone who is same-sex attracted approach their sexuality around their peers? Do you think it is more acceptable to be same-sex attracted today compared to 10 years ago?

Gender and gender inequalities

Gender stereotypes and power imbalances can affect your expectations and those of your intimate partner.

- Are there expectations on males and females to act in certain ways when it comes to sexual behaviours? What happens when you don't 'live up' to these gender expectations? Where do these gender pressures come from?

2.2.4 Stereotypes and prejudice

Stereotypes are a set of characteristics used to categorise a group of people.

People are, but should not be, stereotyped based on:

- how they dress, their hairstyle or their brand of clothes
- their body type or physical appearance
- the level of ability they may have
- their personality
- the way they talk or walk
- where they hang out
- who they hang out with
- their religion, culture or family background.

Stereotypes often contain outdated ideas about what certain people should be like and how they should act. Such ideas limit people and do not allow any space to explore individual differences.

FIGURE 2.6 There is much more to people than their stereotype.

If your peers believe these stereotypes, they may expect you to meet them. If you don't, you have to decide how to respond. Do you stay true to yourself at the risk of being isolated from those peers, or do you act in a way that conflicts with your own values or feelings?

2.2.5 Gender norms and stereotypes

Stereotyping people based on **gender norms** causes problems for young people sorting out their sexuality. Gender norms are ideas or 'rules' about how people of the different genders (e.g. boys or girls) are expected to behave. These rules are particularly problematic because they tend to ignore how complex gender identity can be. For example, people can be **non-binary**. From the time we are born, we internalise and learn these 'rules'.

stereotypes conventional views or ideas (not necessarily accurate) about a group of people

gender norms ideas about how women and men should be and act

non-binary does not identify as exclusively male or female

Gender norms can promote a power and privilege imbalance that favours what is considered male or masculine over what is considered female or feminine. This strengthens inequality, which undermines the rights of women and girls and restricts opportunities for women, men and gender minorities to express their real selves.

Gender stereotypes include assumptions about:

- *Personality traits* — for example, women are more emotional, whereas men are rational.
- *Behaviours* — for example, girls are quiet and passive and boys are boisterous and active.
- *Preferences* — for example, girls prefer creative activities and netball and boys prefer construction toys and football.
- *Occupations and jobs* — for example, men are more suited to be managers or tradesmen and women are more suited to be nurses.
- *Physical appearance* — for example, girls have long hair, women wear make-up, men have short hair.

Attitudes that lead to gender norms and stereotypes are significant because they limit choices, behaviour, aspirations and achievements. They steer individuals in different directions based on their sex and they influence expectations of what is acceptable behaviour.

Research suggests that the stereotype that men should be dominant, in control, tough, aggressive and stoic can lead to men feeling that women should be under their control. This can ultimately result in sexism, disrespect towards women and violent behaviour.

Community attitudes can also influence how people respond to violence in relationships. So, attitudes that reflect gender inequality and power imbalance can lead to practices of sexual coercion, harassment and violence.

Gender stereotypes also put a lot of pressure on men. They may be expected to be physically and emotionally strong and to be the main source of income for their family. In Australia, stereotypes about masculinity also mean men are more likely to drink too much, take unhealthy risks and engage in violence. These gender norms can have a serious impact on men's health and wellbeing, especially since seeking help is seen as a sign of weakness. This makes men less likely to seek professional help or talk about their problems with friends or family.

FIGURE 2.7 Gender norms use and reinforce gender stereotypes about women, men and gender-diverse individuals.

2.2.6 Gender identity

Gender diversity

Gender isn't about someone's anatomy; it is about who they know themselves to be. The genders that are most recognised globally are male and female, based on the anatomy, physiology, hormones and genetics individuals were born with. However there are in fact more than two genders. Gender identities can include male, female, transgender, gender neutral, non-binary, agender (not having a gender), pangender (all genders), genderqueer, two-spirit, third gender (often called transgender), and all, none or a combination of these.

Being respectful and inclusive of all genders means understanding and using the appropriate terminology (language) associated with lesbian, gay, bisexual, transgender, intersex, queer, asexual and other sexually- or gender-diverse people. Using gender-inclusive language is a simple way of affirming someone's identity and showing them respect. It is also a way of reducing the prejudice and discrimination that LGBTIQA+ people face.

FIGURE 2.8 Gender neutral signs are being used as a way of being inclusive and respectful of diversity.

2.2.7 Gender equality

If there is **gender equality**, people of all genders have equal social status, power, resources and opportunities. Their voices, ideas and work are valued equally by society. However, there continues to be a problem with gender inequality in society.

gender equality when people of all genders have equal rights, responsibilities and opportunities

Examples of gender inequality include:

- not paying a person an equal wage, or offering them the same benefits as other employees, because of their gender.
- treating a person, often a woman, as a sexual object (objectification)
- using offensive (rude) language or making offensive jokes based on someone's gender
- not allowing people of a certain gender to participate in certain activities
- not letting a person access education because of their gender
- creating an environment in which people of certain genders feel unsafe or uncomfortable
- not supporting women's sports teams in the same way as men's sports teams (e.g. in terms of sponsorship, standard of accommodation, charter flights and media coverage).

FIGURE 2.9 Gender equality is important to a person's health and wellbeing.

Gender inequality causes problems for everyone. When women are viewed as inferior to men, some men are more likely to commit violence against women (e.g. physical, emotional or sexual violence). Men are also vulnerable due to the norm of being strong and masculine, which means they may be less likely than women to seek health services when needed. A person choosing a role considered to be the domain of a different gender will also face consequences. For example, what if a young man in regional Australia wants to become a nurse, or a woman wants to become a pilot? Both could face barriers to achieving their goals.

2.2.8 The relationship between sex, gender and sexuality

Understanding the differences between sex, gender identity, gender expression and sexual orientation can help you better understand yourself and other people. It can also reduce biases and prejudices and the consequences of these.

For example, by understanding the diversity with which people express their gender and sexuality, we can start to:

- include rather than exclude people
- respect people's choices
- be less confused about our own choices
- reduce the risk of experiencing violence because of gender or sexuality.

DISCUSS

More than 30 countries around the world currently formally recognise marriage equality, including Australia.

a. Outline some ways that sporting groups can ensure same-sex couples are accepted and respected.
b. Why is it important to same-sex couples that marriage be recognised by law?

DID YOU KNOW?

Most violence and harassment experienced by young LGBTIQA+ people happens in school.

2.2 ACTIVITIES

1 Alphabet key

doc-14818

a. Use the **Alphabet gender** worksheet in your Online Resources to complete an alphabet key. Individually, use a word for each letter of the alphabet to describe the characteristics of males and females.
b. In groups, compare your results. Are there any patterns? Do these word lists reinforce or challenge outdated gender stereotypes?

2 Values

a. Select three values from table 2.1.
b. Discuss how they may affect intimate relationships. Think about how they could affect:
i. behaviour **ii.** feelings **iii.** attitudes **iv.** sexual health.

3 What if…?

Discuss with a partner how the world would be different if we did not use or acknowledge gender.

4 Born this way

In 2011, Lady Gaga released her gay anthem 'Born This Way'.
a. Locate the lyrics to the song.
b. Identify the positive outcomes of the idea that a person is born with a sexual orientation rather than it being a choice.
c. Some people take issue with the idea that sexual orientation is fixed at birth. Why might this be the case?

5 Relationship rights

There have been changes to legislation that allow same-sex couples some of the same legal rights as heterosexual couples. In 2017, a referendum changed the law so that same-sex couples can be legally married in Australia.
a. Use the internet and other sources to research this issue.
b. Write three or four paragraphs discussing it. In particular, address the following questions:
i. Do you think same-sex marriage should have been legalised? Why or why not?
ii. How would you justify your opinion to someone who takes the opposite view?

6 Attitudes about young people and sexuality

a. Using the assumptions and myths mentioned in this lesson (or others of your choosing), develop a creative way to help participants to think about how young people are regarded by society. Some examples include:
- creating a game that the rest of your class or another small group can play
- designing an interactive website (this could be done individually or in pairs)
- writing and performing a play in front of your class
- organising a debate
- writing a poem
- designing a poster (this could be done individually or in pairs).

b. Your activity should encourage discussion or consideration of the following questions:
i. What are some of the assumptions, community attitudes and stereotypes about young people and sexuality that exist in today's society?
ii. Where do myths and misconceptions about sexuality come from?
iii. Who spreads them or keeps them alive?
iv. How do we work against them in our society and at a global level?
Ensure that your activity includes full instructions (if needed) and an evaluation sheet for the rest of the class.
c. Allow the class or another group to participate in or view your activity.
d. Have your audience or participants evaluate the activity. They should evaluate:
i. how the major assumptions, community attitudes and stereotypes were covered
ii. whether they learned more about other people's viewpoints
iii. how freely they were encouraged to discuss or think about their own viewpoints.

e. When the evaluations have been handed back, in your groups, discuss the following questions:
   i. How did the group feel the activity went?
   ii. Was there anything that surprised you about people's responses?
   iii. What aspects of the activity went as you expected? What aspects went differently?
   iv. Was something suggested that could be taken up at the whole year or school level? What further actions could be taken as a result of this activity?

7 When will she be right?

In 2021, through their When will she be right? campaign, UN Women Australia highlighted that gender equality is 100 years away in Australia. This prediction has since been increased to 134 years due to the COVID-19 pandemic, which limited employment opportunities for women and closed schools and childcare centres, increasing the need for women to return to the home or work from home. This means no-one today will ever see or benefit from a gender-equal society.

weblink
a. Use the weblink **When will she be right?** to view the video.
b. Use the weblink **Twelve small actions with big impact for Generation Equality** to identify ways to address gender inequality.
c. Select one action and identify how it would promote gender equality.

8 A level playing field

A recent report, *A Level Playing Field: the case for investing in women's sport* identified the following barriers to women's full and equal participation in sport in Australia:

- negative gender stereotypes
- self-image and perceptions of body, especially among teenage girls
- the unequal burden of care work
- less visible role models
- representations in the media
- inadequate facilities and infrastructure
- inadequate funding
- sexual harassment and abuse
- unequal pay.

weblink
You can view this report using the **A level playing field report** weblink in your Online Resources.

a. Identify actions that could be taken by the following groups to address each of these barriers:
   i. elite and community sporting organisations
   ii. the media
   iii. the government
   iv. the public/fans
   v. businesses.

2.2 Exercise

2.2 Exercise

Select your pathway

LEVEL 1	LEVEL 2	LEVEL 3
1, 2, 3, 4, 5, 6	7, 10	8, 9

These questions are even better in jacPLUS!

- Receive immediate feedback
- Access sample responses
- Track results and progress

Find all this and MORE in jacPLUS

Check your understanding

1. MC Sexuality includes:
   A. physical and psychological dimensions.
   B. emotional and social dimensions.
   C. cultural dimensions.
   D. All of the above

2. Being clear about your sexual values will allow you to be clearer about the sexual behaviour you are comfortable with. True or false?
3. MC Gender norms:
   A. are ideas or 'rules' about how girls and boys and women and men are expected to be and act.
   B. can promote power and privilege imbalances.
   C. support inequality.
   D. All of the above
4. Gender stereotypes can be unhelpful to people of all gender orientations. True or false?
5. MC Which of the following are forms of gender inequality? Select all options that apply.
   A. Not paying a person an equal wage, or not offering them the same benefits as other employees, because of their sex or gender
   B. Creating an environment in which all genders feel comfortable
   C. Using offensive language or making offensive jokes based on someone's sex or gender
   D. Supporting girls' and boys' sporting teams with the same resources

Apply your understanding

6. **Identify** the difference between sex and gender expression.
7. **Explain** why it is important to someone's identity and dignity to use inclusive terminology when describing their sexuality.
8. **Discuss**, using examples, how being clear about your values could influence whether you choose to be in an intimate relationship.
9. **Describe** some of the ways gender equality still exists:
   - in social settings
   - within families
   - through the media
   - in workplaces.
10. **Identify** someone in the media or public life who does not follow gender norms.

LESSON
2.3 Gender equality and respectful relationships

LEARNING INTENTIONS

- Describe the characteristics of respectful relationships.
- Investigate gender equality, balance of power and gender-based violence.
- Analyse the implications of attitudes and behaviours such as prejudice and homophobia.
- Investigate the forms that bullying can take.

2.3.1 Independence and responsibility

Adolescence is a time of substantial growth and development, both for the body and the brain. During this stage of your life, there are more opportunities to develop your independence. However, with these opportunities comes greater responsibility for your own actions, particularly with regard to sexual activity and relationships.

adolescence period between childhood and adulthood; the World Health Organization defines it as between the ages of 10 and 19

During adolescence, you may need to consider whether or not to become involved in a relationship. Then you may need to decide what type of relationship you would like (friendship, emotional or sexual). There are emotional, mental and physical aspects to the decisions you make, no matter which type of relationship you choose. There may also be pressure to take the relationship 'to the next level'.

ENGAGE

Respect in relationships is the top reason young adults seek help online and the second most sought-after topic for teenagers, according to new figures. Of the Kids Helpline website pages offering information to young adults, the topic 'respect in relationships' was most clicked during 2020.

What questions could you ask yourself to determine whether a relationship is respectful?

FIGURE 2.10 Respect is a key factor in the development of an intimate relationship.

DISCUSS

What do you think the term 'intimacy in a relationship' means?

2.3.2 Safe sexual relationships

sexual relationship a relationship that involves any form of sexual activity

intimacy a feeling of being close, emotionally connected and supported

During adolescence, we develop a sense of independence and start to form relationships based on our own values and ideals. This is also the case with **sexual relationships**. However, there can be added pressure on a relationship when participating in sexual activity for the first time and the level of **intimacy** increases.

You should never let others pressure you into sexual activity. The decision to engage in sexual activity is yours, not anyone else's, whether it is the first time or any time after that.

FIGURE 2.11 You need to consider if you are ready to be in a relationship.

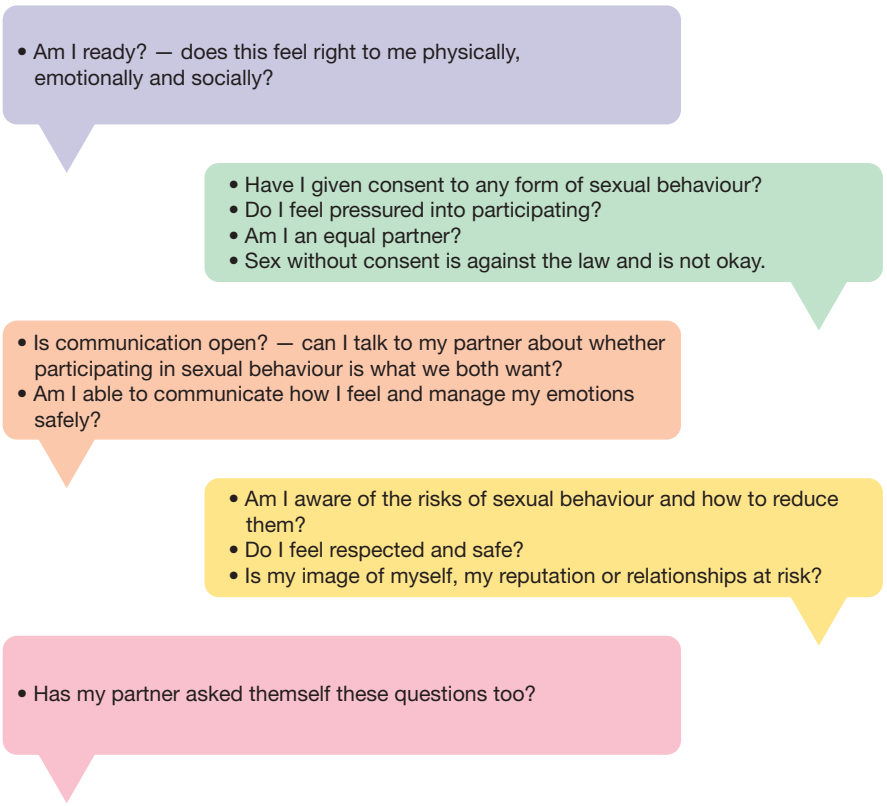
Often, there is a belief that most young people are having sex. For young people, there is often pressure to keep up and be 'normal'. However, research from the *6th National Survey of Australian Secondary Students and Sexual Health 2018* (the most recent) shows that more than half of all young people are not having sex. The survey addressed students from Years 10, 11 and 12 from across Australia, with results showing that if you haven't had sexual intercourse by Year 12, you are in the majority. There are other sexual activities in which people participate, with some carrying more risk than others; for example, deep kissing, genital touching and oral sex. These risks need to be considered when making decisions about any form of sexual behaviour.

TABLE 2.2 Students' reported sexual activities

Activity	Males		Females		Total	
	%	(n)	%	(n)	%	(n)
Deep kissing	69.4	1891	78.3	2719	74.4	4656
Touching a partner's genitals	62.7	1699	66.9	2307	65.0	4047
Being touched on your genitals	61.6	1666	68.7	2370	65.6	4077
Giving oral sex	47.1	1269	56.2	1939	52.1	3238
Receiving oral sex	49.4	1333	53.0	1831	51.4	3192
Anal sex	14.3	387	11.2	389	12.6	786
Vaginal sex	38.7	1047	48.9	1689	52.9	2757

Note: (n) stands for number of students who responded.

FIGURE 2.12 Ask yourself these questions when beginning any sexual relationship.



2.3.3 Respectful sexual relationships

In a respectful sexual relationship, mutual respect and trust are present. **Respect** is about how we treat others and how we treat ourselves. If you respect someone, you accept them for who they are, even when they're different from you or you don't agree with them. Respect in your relationships builds feelings of trust, safety and wellbeing.

respect recognising and appreciating the differences between people and treating them fairly

Communication is the key to building and maintaining a respectful sexual relationship. Communication helps you to make sure you both want and expect the same things. This involves talking and listening to one another. Everyone has the right to feel safe, valued and cared for when starting a closer, intimate relationship.

All respectful sexual relationships, including sexual ones, are based on or include:

- respect for yourself and your partner
- trust
- open communication that involves listening and being heard
- equality
- both shared and individual interests
- understanding
- feeling comfortable
- emotional support
- being able to say 'no'
- being able to make your own decisions
- feeling accepted and free to be yourself
- being able to express your thoughts and feelings honestly with each other
- being able to talk things through together and make compromises
- supporting each other.

Communicating genuine **empathy** is also important in respectful sexual relationships as it allows the other person to feel respected, accepted and understood. Empathy is key to establishing both trust and respect. Empathy involves trying to understand another person's situation and feelings.

empathy the ability to identify, appreciate and understand another's situation or feelings

2.3.4 Gender equality and power

Power in a relationship relates to the ability to exercise influence or control over others. In a relationship, this can mean being able to exert influence over the other person in decision-making. Healthy relationships have a balance of power, where no one partner has more power than the other. When there is a balance of power in a relationship, the partners recognise that they both matter and can influence decisions. This supports both partners' sense of self-worth. For people to be safe, they must be equal.

power the ability to exercise influence or control over others

Gender norms can shape men's control over women in intimate relationships and can contribute to patterns of coercive behaviour. The assumption that men should be in charge in a relationship can make power and control the norm and prevent people from recognising violence in relationships.

A power imbalance can contribute to the following challenges in a relationship:

- less intimacy and connection
- one partner can withdraw
- frustration and anger, anxiety, fear and shame
- reduced self-esteem, poor self-image and a sense of low personal value
- isolation, threats and abuse as a means of maintaining the power imbalance
- lack of trust
- low resilience.

FIGURE 2.13 Power imbalances can lead to less intimacy and connection.

Coercion

Coercion describes any attempt to control your behaviour with threats or manipulation. If someone makes you feel obligated or forced to do something you don't want to do, you are experiencing coercion. **Sexual coercion** is unwanted sexual activity that happens when you are pressured, tricked, threatened or forced.

coercion persuading or compelling someone to do something through the use of threats or force

sexual coercion when someone won't accept 'no' and continues to try to convince you to engage in sexual activity

This could include:

- influencing your decision through the use of alcohol or drugs
- using guilt, humiliation and repeated begging to wear you down so you agree
- using a position of power over you to pressure you
- lying to you or promising things
- threatening to spread rumours about you or to end the relationship.

A cycle of gender inequality

Power imbalance, coercion or violence within the home can lead to children and teenagers accepting violence as a 'normal' part of intimate relationships. This can spread intimate partner violence across generations.

Through violence in the home, children see, learn and internalise power imbalances between and within genders. This means that children and teenagers who witness or experience violence in the home are significantly more likely to commit or experience domestic violence as adults, compared to those whose childhood homes were violence-free.

Harassment

Harassment involves a more powerful person or group oppressing a less powerful person or group, often on the grounds of 'difference'. These differences can be related to culture, ethnicity, gender, sexuality, ability, religion, body size and physical appearance, age, marital status, parenting status or economic status.

harassment a kind of bullying; any form of behaviour that is not wanted or is offensive, humiliating or intimidating

There are many types of harassment, including:

- physical (e.g. hitting, kicking, pinching)
- verbal (e.g. name calling, teasing)
- psychological (e.g. standover tactics, threats)
- social (e.g. social exclusion, rumours, put-downs)
- sexual (e.g. physical, verbal or non-verbal sexual conduct)
- cyber (e.g. using the internet, texting, email and other digital technologies to harass someone).

Sexual harassment

The Australian Human Rights Commission defines sexual harassment as any unwanted or unwelcome sexual behaviour that makes a person feel offended, humiliated or intimidated.

Sexual harassment may include:

- staring or leering
- unwelcome touching
- suggestive or insulting remarks
- sending sexually explicit emails or text messages
- inappropriate advances on social networking sites
- accessing sexually explicit internet sites.

The *Sex Discrimination Act* makes it unlawful for a person to sexually harass another person in a number of areas, including education. It defines sexual harassment as 'any unwanted or uninvited sexual behaviour that is offensive, intimidating or humiliating. It has nothing to do with mutual attraction or friendship'. However, despite this, sexual harassment continues to occur. Each person has the right to be free from harassment. We all have the responsibility to treat others how we would like to be treated. Go to the **Sexual, gender and bodily diversity discrimination** weblink in your Online Resources to learn more.

weblink

2.3.5 Sexual orientation

All people have the right to be free from discrimination because of sex, gender identity, gender expression and sexual orientation. In any respectful relationship, whether it be a same-sex relationship or a **heterosexual** relationship, each partner needs to take responsibility for themselves. Good communication is vital. Some people may not accept **same-sex attraction** or bisexual sexuality and may display homophobic feelings. People can get caught up in myths and misconceptions, or are influenced by culture, religion, stereotypes and peers. This can mean they are unable to understand or acknowledge that people have the right to same-sex attraction.

heterosexual being sexually attracted to someone of the opposite gender

same-sex attraction people who are emotionally and sexually attracted to people of the same sex. They often identify themselves as being gay or lesbian.

Within their sexuality, everyone has a sexual orientation. Your sexual orientation might stay the same your whole life or it may change. Sexual orientation refers to a person's emotional, physical and sexual attraction to others. Each person's sexual orientation is a part of their identity. You may know at a very early age what your sexual orientation is, or you may not.

Some misconceptions about sexuality and sexual behaviour that stem from stereotypes are listed below.

- 'Young people aren't mature enough to learn about sexuality.'
- 'Sexual orientation is a choice or a lifestyle.'
- 'All young people are doing it.'
- 'The media is responsible for young people becoming sexually active.'
- 'Gay and lesbian people can easily be identified by the way they look and act.'

Breaking norms can be perceived by some individuals as a threat. When a person expresses a non-heterosexual sexual orientation, they may be:

- excluded from a group
- gossiped about
- attacked, verbally or physically.

It is not always easy to tell people about your sexual orientation. Many same-sex attracted young people fear the reaction they will get from anyone they tell.

2.3.6 Homophobia

Homophobia can take many different forms. It can include negative attitudes and beliefs, and discrimination against, same-sex attracted people, or LGBTIQA+ people more broadly. Homophobia can have strongly negative effects, especially when the targets of homophobic bullying are young. Bullying as a result of homophobia can include:

homophobia irrational fear of, dislike of or discrimination against people who are homosexual or same-sex attracted. It can also refer to stigma arising from social ideologies about homosexuality.

- name calling
- put-downs
- inappropriate 'jokes'
- sexual harassment
- physical violence
- threats
- damage to property
- social exclusion
- online harassment.

Homophobia is often based on irrational fear and misunderstanding. It may be based in religious beliefs or values taught by parents and families. Young people often find themselves in an environment where they are surrounded by negative messages about being gender- or sexuality-diverse. This can be very overwhelming and isolating. In extreme cases, some young people can react by turning to drugs or self-harm to cope with or escape the prejudice and discrimination.

FIGURE 2.14 *Another Perspective*, aimed at raising awareness of homophobia, has just been relaunched by Minus18, a national organisation for young LGBTIQA+ Australians.

A groundbreaking campaign is exploding the silence around LGBTIQ family violence

Sage Akouri was attending an all-girls school in Melbourne when, at age 14, they first came out as gay to their "strict" Lebanese parents — not that they wanted to.

At the time, Sage was in the early stages of privately exploring their sexuality with a close friend when their father installed a recording device on the home phone, so he could listen back to Sage's calls.

"He heard a conversation that revealed what was going on between her and I, and that's how I was forced to come out to my family," said Sage, 29, who now identifies as trans non-binary, meaning they don't identify with the sex they were assigned at birth, and feel neither male or female.

"In my culture those things weren't really accepted," Sage said. "I'd see the way my parents would speak about gay people in particular, and I knew it wasn't something they'd be accepting of in me." In their family's Maronite Christian faith, Sage said, homosexuality was considered a "sin", and their Lebanese community was focused on protecting family honour.

But that initial painful confrontation was just the start of years of family violence from which Sage says they're still recovering. Though they've since rebuilt a strong bond with their mother, who has unexpectedly become one of their greatest allies, Sage's relationship with their father never recovered.

"My dad was already very controlling and physically and verbally abusive," they said. "But the second he found out about my sexuality he treated me very differently — it was almost fuel for his abuse."

If they spoke to their father, Sage said, "it was only because of the violence" or to defend their sexuality, their identity: "He wanted to get rid of it, deny it, squash it, I guess, and he tried to talk me out of it."

Shattering the silence

… A survey published by La Trobe University last year alarmingly found six in 10 participants reported they had been abused by an intimate partner, while more than six in 10 reported they had been abused by a family member — most commonly a parent.

… Now, a groundbreaking campaign is aiming to shatter the silence by raising awareness of the kinds of family violence LGBTIQ+ people can experience — how coming out can be a trigger for abuse, for example — and highlight the crucial role families can play in protecting queer communities from the too-often deadly consequences of homophobia, transphobia and rejection.

The campaign, by Respect Victoria, tells the stories of families who have grappled with sometimes confusing and challenging issues around sexuality or gender identity, yet worked through them together, with love.
…

‘We almost took Sage’s future away’

Some parents, of course, don’t understand how important supporting their LGBTIQ+ children is until serious harm has been done.

By the time Sage’s mother Leila Chayeb realised how much Sage was struggling with their parents’ rejection, Sage was severely depressed and self-harming. …

It wasn’t until Sage was much older, after their parents had separated, that Leila took steps to repair their relationship. She began researching gender identity and sexuality, she said, and seeing a psychologist. …

“Denying Sage’s sexuality and gender identity didn’t change Sage or make them become who I wanted them to be, it only caused them pain and trauma that they’ll carry with them forever. We as parents have the power to influence our children’s futures and we almost took Sage’s future away from them.”

These efforts, it turned out, helped Sage feel comfortable enough to come out as trans to Leila three years ago. “At the start she had a lot of questions, she couldn’t understand what it all meant,” Sage said of their mother. “But we talked about it, and I said, ‘Look, I don’t really understand it either, but I just need your support and respect and if we have that, we’ll be able to work through it all together’.”

…

It’s why Sage is now throwing their support behind the Respect Victoria campaign — to “be visible” to other young LGBTIQ+ people who might be struggling with their identity, and speak out about family violence and abuse. “I hope families and particularly parents will watch these videos and see how big a difference their support can make to their child or the person they’re caring for,” Sage said.

“And I hope in my and my mum’s story people who may be estranged from their family can see there’s hope things can change.”

Source: Hayley Gleeson, A groundbreaking campaign is exploding the silence around LGBTIQ family violence, 2021. ABC.

2.3.7 Homophobic and transphobic bullying

Young people who are **same-sex attracted**, or who are thought to be same-sex attracted, are sometimes the targets of bullies and are abused and harassed. Likewise, people who are, or are perceived to be, gender-diverse can become subject to bullying.

Homophobic bullying is discrimination against people who are, or are thought to be, same-sex attracted. You are not born homophobic, just as you are not born racist. These are learned behaviours that are based on ignorance and prejudice.

Similar to homophobic bullying, **transphobic bullying** is based on prejudice or negative attitudes, views or beliefs about transgender individuals; that is, individuals whose gender is not the same as, or who do not identify with, the sex they were assigned at birth. As with homophobia, transphobia is a learned behaviour that can, and should be, overcome.

This difference between homophobic and transphobic bullying is that homophobic bullying targets someone’s sexual orientation (real or perceived), whereas transphobic bullying targets someone because of their gender identity. As you know by now, it is important to recognise the difference between ‘gender identity’ and ‘sexual orientation’ because a person’s gender identity does not tell us anything about their sexual orientation. Both are forms of **prejudice-based bullying.**

same-sex attraction people who are emotionally and sexually attracted to people of the same sex. They often identify themselves as being gay or lesbian.

homophobic bullying discriminating against people who are, or who are thought to be, same-sex attracted

transphobic bullying discriminating against individuals who are transgender; that is, individuals whose gender is not the same as, or who do not identify with, the sex they were assigned at birth

prejudice-based bullying bullying behaviour as a result of prejudice that relates to perceived or actual differences

Gender stereotypes in schools can also create a basis for bullying if people are perceived as not conforming to those norms.

Challenging bullying

Actions we can take to challenge homophobia and transphobia include the following.

- Be aware that language such as 'that's so gay' can hurt others.
- Don't make assumptions or believe stereotypes about LGBTIQA+ people.
- Be an ally of the LGBTIQA+ community and learn about LGBTIQA+ issues.
- Respect LGBTIQA+ people's decisions about when and where to come out, and show respect for and interest in their partner.
- Accept people for who they are, embrace differences and remember that being LGBTIQA+ is just one aspect of a person's identity.
- Speak up when other people are making offensive jokes, using negative language, or bullying or harassing someone because of their sexual orientation if you feel safe to do so.

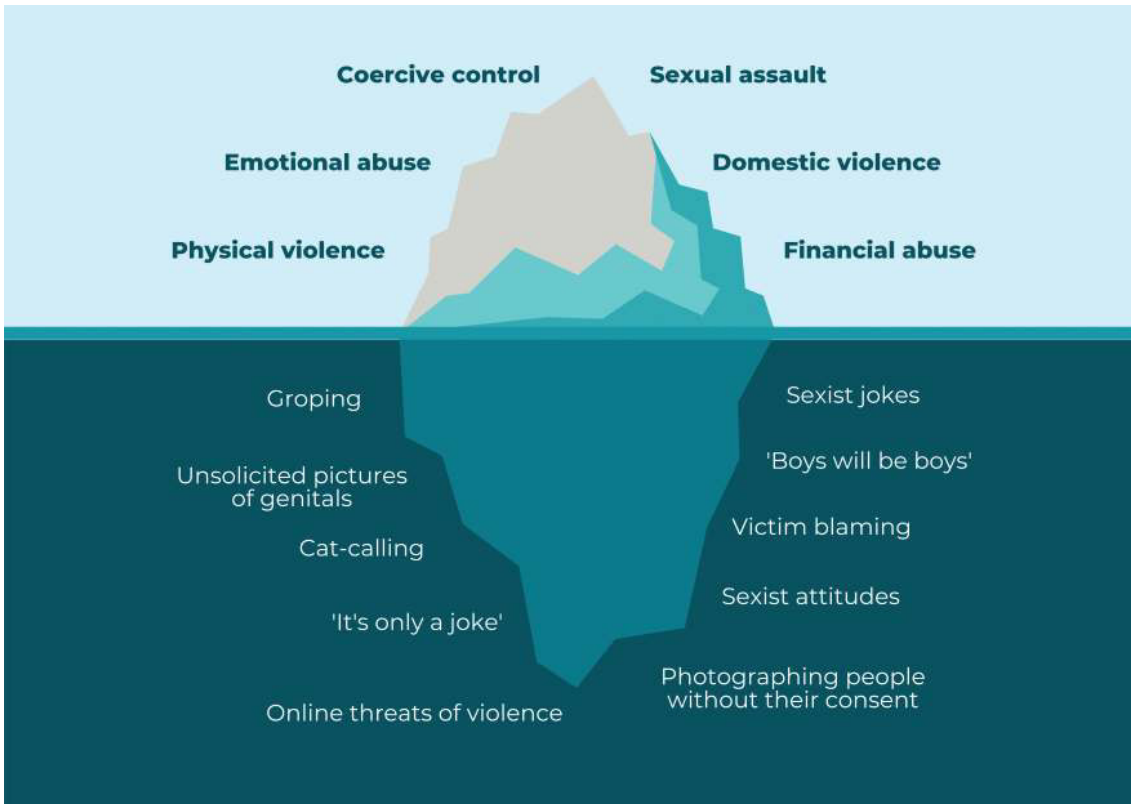
2.3.8 Gender-based violence

According to the UN Refugee Agency (UNHCR), gender-based violence refers to 'harmful acts directed at an individual based on their gender'. Gender-based violence is caused by gender inequality, the abuse of power and harmful gender norms.

The risk of violence against women is increased by:

- violence against women being thought of as normal
- men's control of decision-making
- women having limited independence in public and private life
- rigid gender stereotyping
- cultures of masculinity that emphasise aggression, dominance and control.

FIGURE 2.15 Gender-based violence can include sexual, physical and mental abuse and can occur in person or through digital technology.



Domestic violence is a form of gender-based violence. It can include the following:

- *Economic violence* — making or trying to make a person financially dependent. This is done by maintaining total control over financial resources and withholding access to money.
- *Psychological violence* — causing fear by intimidation; threatening physical harm or isolation from friends, family, school and/or work.
- *Emotional violence* — undermining a person's sense of self-worth through constant criticism and belittling their abilities, damaging their relationship with their children or not letting them see their friends or family.
- *Physical violence* — hurting or trying to hurt a partner using physical force.
- *Sexual violence* — forcing a partner to take part in sexual activity when the partner does not consent.

2.3 ACTIVITIES

1 Finding themes

a. Review this lesson about gender equality and respectful relationships. Record words, phrases or quotations that are particularly interesting or meaningful to you.
b. Identify a theme and message that represents some or all of the language you have selected. A theme is a broad concept, such as respect, while a message is a specific idea you would like to express about this theme. This may be in the form of a famous quote.
c. Create an infographic, poster, sticker or tweet of your theme and message.
d. Conduct a gallery walk as a class to view other themes and messages.

2 SIT — Surprising, interesting, troubling

a. After reading this lesson, identify the following:
  i. One **S**urprising fact or idea
  ii. One **I**nteresting fact or idea
  iii. One **T**roubling fact or idea.
b. Share your S-I-T responses either in pairs or as a class.

3 Mapping the impact of gender discrimination

doc-38004
weblink

Access the **Mapping disrespect** worksheet and the **A groundbreaking campaign is exploding the silence around LGBTIQ family violence** weblink in your Online Resources. Create your own map of the impact on Sage of power imbalance, discrimination and violence.

4 Three whys

a. Investigate the significance of gender equality by asking yourself these three 'Whys?'.
  i. Why might understanding gender equality matter to me?
  ii. Why might it matter to my family, friends or my country?
  iii. Why might it matter to the world?
b. Compare responses across the class.

5 Respectful perspectives

Explain how taking the actions listed in the Challenging bullying section would also help heterosexual parents build a respectful relationship with their child who is LGBTIQA+.

2.3 Exercise

2.3 Exercise

Select your pathway

LEVEL 1	LEVEL 2	LEVEL 3
1, 2, 3, 4, 5	7, 8	6, 9

These questions are even better in jacPLUS!

- Receive immediate feedback
- Access sample responses
- Track results and progress

Find all this and MORE in jacPLUS

Check your understanding

1. MC Intimacy is:
   - A. being close to your partner.
   - B. emotional and spiritual closeness.
   - C. physical closeness.
   - D. All of the above
2. MC The challenges created by a power imbalance in a relationship can include:
   - A. less intimacy and connection.
   - B. lack of trust and resilience.
   - C. reduced self-esteem.
   - D. All of the above
3. MC A young person in an environment where they are surrounded by negative messages about being gender- or sexuality-diverse could feel:
   - A. isolated.
   - B. overwhelmed.
   - C. anxious or depressed.
   - D. All of the above
4. Some young people know clearly how they feel and who they're attracted to. Others can feel confused because their feelings and attractions are different from what their friends are experiencing or what they see in the media. True or false?
5. Select either 'coercion' or 'power' to fill in the appropriate blank.
   _____in a relationship is a person's ability to exercise control over others. _____ is any attempt to control someone's behaviour with threats or manipulation.

Apply your understanding

6. **Contrast** the concepts of respect and coercion in your own words.
7. **Explain** the links between gender equality and gender-based violence.
8. **Outline** the characteristics of a safe and respectful sexual relationship.
9. **Analyse** how the International Day Against Homophobia and Transphobia could help change community attitudes towards sexuality.

LESSON
2.4 Consent

LEARNING INTENTIONS

- Describe the rights and responsibilities of respectful relationships.
- Examine the role of respecting boundaries and assertive communication in seeking, giving and denying consent.
- Explain the role of consent in the development of respectful face-to-face or online relationships. Investigate the legal requirements in relation to consent in both online and offline relationships.

2.4.1 Choosing to be in a sexual relationship

Deciding when, how and if to become sexually active requires decision-making skills. You have choices when it comes to deciding whether or not to have sex — and what sort of sexual activity you want. Others might try to

make the decision for you or force you into deciding faster than you would like. However, sex is an individual choice, and those who make it at the right time and for the right reasons usually find that they have few regrets.

When is the right time for someone to have sexual intercourse? The answer is 'when it feels right'. But what does that really mean? To weigh up when is the right time for you, you need to consider the following.

- *Legal age*. This varies in each state. More information can be accessed from the legal aid services for your state.
- *Consent*. Why do you want to do what you're doing with this partner? Both partners need to have discussed and freely chosen to say 'yes' or give **consent**. This includes for sex or any sexual activity, including touching or kissing. There should be no pressure on either partner to say yes, and 'yes' should always be clearly communicated. Without consent, any sexual activity is against the law.
- *Maturity.* You should be physically and emotionally ready to participate in sexual activity.
- *Values*. Is this something you want to do? Does having sex now fit with the values you have? This varies among individuals.
- *Communication*. Can you talk honestly with your partner? Do you feel safe with the person you are thinking about being sexually active with? Before having sex, you should discuss with your partner all your concerns; for example, contraception, STIs, and how you will feel afterwards about yourself and your partner.
- *Information*. Do you know how to keep yourself safe? Are you aware of the possible emotional and physical health outcomes if you are sexually active when you are not fully ready or prepared?

consent informed and freely given agreement to engage in an activity, or permission for a specific thing to happen. This includes agreement and permission giving in online and offline situations.

ENGAGE

Discuss how you could use a traffic light system to seek, give and deny consent.

RED: Signs you should STOP

AMBER: Signs you should PAUSE and TALK

GREEN: Signs that you have consent to GO.

FIGURE 2.16 Seeking, giving and denying consent has been likened to a traffic light system.

Rights and responsibilities in relationships

Knowing your rights and responsibilities in a relationship makes it easier to do the right thing for yourself and your partner.

FIGURE 2.17 In a relationship, you have the following rights and responsibilities.

Rights

- To be treated with respect — always
- To be in a healthy relationship
- To not be abused — physically, sexually or emotionally
- To enjoy friends and activities apart from my romantic partner
- To express myself honestly
- To recognise my culture and identities
- To determine my values and set limits
- To decide what I share with whom
- To say no
- To feel safe in relationships
- To be treated as an equal
- To feel comfortable being myself
- To leave or stay in a relationship

Responsibilities

- To communicate my values and limits
- To respect my romantic partner's limits, values, feelings and privacy
- To accept my romantic partner's culture and identities
- To not abuse — physically, sexually or emotionally
- To listen and be considerate
- To communicate clearly, honestly and respectfully
- To give my romantic partner space to enjoy activities and friendships outside of our relationship
- To not exert power or control in relationships
- To compromise when needed
- To admit to being wrong when appropriate
- To ask for help from friends, family

2.4.2 Communicating and respecting boundaries

You can use assertive communication to set boundaries about what you are comfortable with in a relationship. It is common to worry about setting boundaries in case we offend someone. However, while you are not responsible for other people's emotions and reactions, you can communicate clearly and with empathy. Physical boundaries in a relationship can include asking not to be hugged. The right boundaries to set are the ones that make you feel healthy, safe, respected and comfortable. Ways to do this are listed below.

- Show empathy and put yourself in the other person's shoes. Imagine if your roles were reversed. What would you expect your partner to say if they were in your shoes?
- Be honest and direct.
- Talk calmly — the person you are talking to is likely to respond calmly also.
- Listen actively, rather than just thinking about what you will say next.
- Ask questions.
- Be specific.
- Focus on the behaviour that is the problem, not the person.
- Make it about you by using 'I' statements.
- Be clear about your needs or desired outcomes.
- Prepare for your partner to be surprised — remember that everyone reacts differently.
- Be willing to give them time and space to process and respond. Allow them to ask questions. If you can't answer all of their questions, visit a health clinic or search online together to learn more.

If someone is crossing your boundaries, here's what Kids Helpline suggests you say to assertively — politely but firmly — reinforce your boundaries:

- 'I feel …' (share your emotions).
- 'When (x) happened' (be specific about the behaviour that crossed your boundary).
- 'I'm going to …' (be clear on your boundary).
- 'I would like it if you …' (tell them how they can respect your boundary).

DID YOU KNOW?

Consent is about respecting personal and emotional boundaries, not just about agreeing to sexual activity. It applies to touching and sharing information in all relationships.

It is a person's right to say no to sexual activity at any time, even within marriage. If consent is withdrawn at any time and you proceed to have sex, you have broken the law.

ALERT!

This topic includes discussion of issues such as power in relationships, sexual assault, physical and emotional abuse, and discrimination and harassment. This content may be difficult to think about for some young people. It is important that you care for your safety and wellbeing. If any of this content makes you feel uncomfortable or could trigger negative thoughts or feelings, remember to seek support. Possible sources of support include:

- a teacher or your school counsellor
- Kids Helpline (1800 55 1800)
- online youth support groups, such as ReachOut, Beyond Blue and Lifeline eheadspace
- your doctor
- a youth health service.

2.4.3 Seeking, giving and receiving consent

Consent isn't just about sex. It is our right to say no to anything we're not comfortable with. It is about respecting personal and emotional boundaries. We can clearly define sexual assault, rape and consensual sex, and conversations are happening more and more frequently to protect sexual health and respectful relationships. But we need to remember that practising consent involves far more than agreeing to sexual activity.

In order for all relationships to be respectful and on equal grounds, we must also practise consent in terms of shared information, touch and conversations.

- *Shared information.* If someone shares a personal story or photo with you, consent means that you don't share this information with anyone else without their permission. They need to be in charge of how that story is told and who hears it or who views an image or video.
- *Touch.* Any type of touch, such as hugging or tickling or touching people to move around them in schools or workplaces, needs consent before it occurs.
- *Conversations.* Consent in conversations means making sure the other person is okay to talk about a particular topic and respecting their wishes and not forcing a conversation.

Sexual consent and the law

It is against the law to participate in any sexual activity without first gaining the other person's consent. Consent must be given by both partners. It is about asking, listening and showing respect. There is no reason for someone to pressure a partner because the desired response was not received. When someone says 'no', they do not mean 'yes', 'try harder' or 'maybe'. 'No' *always* means 'no'.

Whenever someone is asked for consent in any relationship, they are free to say 'no'. You must accept the answer and move on without pressuring them to change their mind. It's okay to feel disappointed with their answer of 'no'. Always remember that respecting personal boundaries is the right thing to do.

FIGURE 2.18 Consent is our right to say no to anything we're not comfortable with.

FIGURE 2.19 Kids Helpline describes what consent looks like

Mutual	Both partners need to agree, every single time.
Freely given	You both need to choose without pressure, guilt or threats.
Informed	You both understand what's about to happen.
Certain and clear	Your consent is a YES, not a 'maybe', 'I think so' or 'I guess so'.
Enthusiastic	You are positive and WANT to participate in the sexual activity.
Reversible	You can stop or change your mind at any time.
Specific	If you say yes to one thing, it doesn't mean that you are saying yes to everything.
Ongoing	Consent must be given before and during any sexual activity, every time.

Source: https://kidshelpline.com.au/teens/issues/what-consent

If consent is withdrawn at any time and you continue the activity, you have broken the law. There are times when someone is unable to give consent. This might be because the person is affected by alcohol or other drugs, has an intellectual disability or is too young. If consent can't be given, any sexual activity is against the law.

Alcohol, other drugs and consent

Alcohol and other drugs complicate sexual activity because they impair:

- judgement
- capacity to communicate
- ability to read and interpret others' communication.

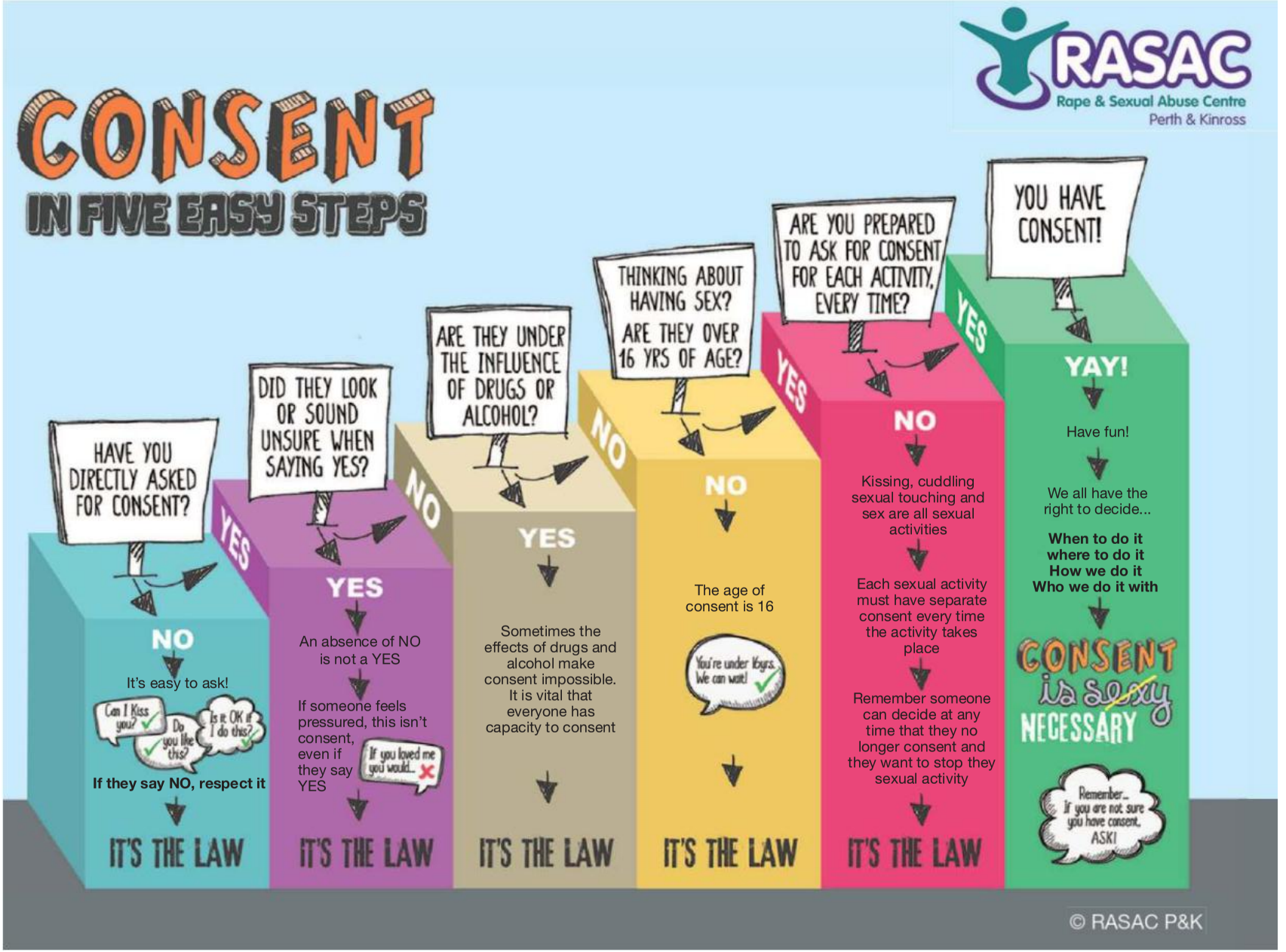
This may lead to someone pressuring you into doing something against your will (coercion). In Victoria, the law considers that a person cannot give consent if they are impaired by alcohol or another drug. It is everyone's responsibility to recognise and respect when someone is too intoxicated to give consent freely, enthusiastically and in an informed manner.

Alcohol can affect the body for a long time after a person's last drink. Being responsible means noticing whether the other person can understand what's happening over time and stopping if they want to. Having sex or participating in sexual activity with a person affected in a way that means they cannot give consent is considered sexual assault and can result in criminal action.

Research from the *6th National Survey of Australian Secondary Students and Sexual Health 2018* (the latest) showed that:

- just under one-third of the secondary students surveyed reported experiencing unwanted sex
- young women were more likely than young men to have experienced sex when they did not want to
- alcohol and pressure from their partner were the most common reasons for students having sex when they did not want to.

FIGURE 2.20 Consent in five easy steps



2.4.4 Support for young people managing relationships

Being in an unhealthy relationship or living with unhealthy relationships between parents/caregivers can negatively affect your wellbeing. You might feel anxious and nervous or not free to make your own decisions.

Many support organisations are available to provide young people with help on relationship issues and sexual and reproductive health. The following organisations provide free or subsidised services:

- Family Planning or sexual health organisations in your state
- ReachOut
- Centres Against Sexual Assault
- Relationships Australia
- Alcohol and Drug Foundation
- eSafety Commissioner
- Government websites (e.g. www.respect.gov.au)
- Royal Women's Hospital
- National Legal Aid
- Australian Indigenous Health Promotion Network
- Women's Information (WIRE)
- World Health Organization
- Headspace
- Healthdirect
- Kids Helpline
- Lifeline
- Multicultural health services
- Your local or metropolitan same-sex attracted support group
- Your local community health centre
- Your family nurse/doctor
- GPs.

FIGURE 2.21 Friends can be supportive, but sometimes you need support from professionals with more experience.

2.4.5 Consent and online communication

Sexting

Using a mobile phone or the internet to take, send, ask for or receive intimate photos or videos is called **sexting**. Sexting is not a crime if everyone involved is over 18 and consents. However, even if you are happy to send or receive a message from someone, once you have sent it, your control over it has gone. Any information that you leave about yourself in an online environment adds to your **digital footprint**, which can be seen at any time in the future. When you sext, you are not only risking the chance that someone you don't want to see the images will see them, but you are also making yourself vulnerable to online predators.

sexting laws sending photos, images, video or text messages of a sexual nature via mobile phones and social media sites

digital footprint any information that you leave about yourself in an online environment

It is a crime to share an intimate image or video of someone without their consent. If the person in the image is under 18, it is always a crime, even if they consent. Sexting can also be a form of harassment. Threatening to share or sharing an intimate image or video without consent is called image-based abuse.

If someone is pressuring you to send them a sext you can:

- Ask them to stop.
- Send something else like a clever oneliner.
- Tell someone you trust.
- Collect evidence by taking screenshots and reporting them to the social media platform they're using.
- Get more support from organisations such as ReachOut, Kids Helpline or the eSafety website.

weblink

Addressing image-based abuse

If you have sent a sext, you regret doing it and you are worried about what might happen next, there are some things you can do.

- Ask the person who received the image or text to delete it.
- If the image is posted online, untag yourself, then report the image so it can be removed.
- Talk to a trusted adult, such as an older sibling, parent or teacher, to seek advice about what to do next.

If someone else posts sexual or naked photos of you or one of your friends online, report them to the service the image was posted on. If you go to school with them, tell a teacher or talk to your school counsellor. It is not okay for anyone to share your images without your permission.

If someone sends you an image of a sexual nature, think about how you will deal with the situation.

- Ask them to stop.
- Do not forward the image to anyone else.
- Tell that person you don't want to receive such images and ask them to stop.
- If they continue, block or unfriend them from social networking sites and block their number on your phone.
- If they continue, speak to a trusted adult to seek advice about what to do next.

FIGURE 2.22 It is a crime to send an intimate image or video of someone without their consent.

Some statistics from the *6th National Survey of Australian Secondary Students and Sexual Health 2018* in regard to technology and sexual behaviour (see table 2.3) include:

- Half of all students surveyed reported having received a sexually explicit text message.
- Over a third of students reported that they had sent a sexually explicit photo of themselves.
- Over 40 per cent of students had received a sexually explicit nude or nearly nude photo or video of someone else.

TABLE 2.3 Students' sexual experiences using new technologies

	Males		Females		Total	
	%	(n)	%	(n)	%	(n)
Sent a sexually explicit written text message	43.3	1130	37.7	1247	40.4	2451
Received a sexually explicit written text message	49.8	1301	51.3	1708	50.7	3086
Sent a sexually explicit nude or nearly nude photo or video of yourself	31.3	806	32.6	1062	32.0	1913
Sent a sexually explicit nude or nearly nude photo or video of someone else	7.2	188	4.6	154	5.8	354
Received a sexually explicit nude photo or video of someone else	44.1	1147	44.2	1465	44.1	2672
Used a social media site for sexual reasons	38.8	1008	23.2	768	30.3	1829

Note: (n) stands for the number of people in the survey who answered the question.

If you ever feel pressured to take part in sharing sexual images in a relationship, remember you have the right to say no. If it makes you feel uncomfortable, do not do it. A person under the age of 18 cannot consent to their intimate image being shared. This means that even if they agree, it is still illegal.

FIGURE 2.23 In relationships, individuals need to independently decide what sort of sexual activity they want and then, together, agree on how to manage their decisions.

Sexting and the law

The *Commonwealth Criminal Code Act 1995* makes it illegal to access, transmit, publish, possess, control, supply or obtain child pornography. Australian State and Commonwealth child pornography laws don't recognise whether both parties are the same age or if a sexual image was willingly sent. If the images or video in question are of someone under the age of 18, the individual who possesses or distributes the material might be in breach of the law. This puts them at risk of being charged with child pornography offences and placed on the sex offender register.

DISCUSS

What do you think the future implications will be for a young person charged with child pornography offences?

Some states in Australia, such as Victoria and Tasmania, have changed the laws to create new 'sexting' consequences for offenders. The changes mean that people who receive or send non-exploitative sexts can be spared from child pornography offences and will not be placed on the sex offender register if certain conditions apply. This means that young people under 18 who create, possess or distribute a sext of themselves or another child who is less than two years younger will not be guilty of a child pornography offence.

Australia has a national, independent regulator for online safety. The eSafety Commissioner was established under the *Enhancing Online Safety Act 2015* (Cwlth) with the primary aim of improving online safety for Australian children. Two of the three main functions of eSafety are:

- *Protection*. Using regulatory powers to facilitate the rapid removal of harmful content online.
- *Prevention*. Informing Australians about online safety risks, how to be safe online and where to go for help.

eSafety has a civil penalties scheme to deal with image-based abuse. If you report image-based abuse to them, they can help to get the material removed as quickly as possible. Sometimes, they can also take action against the person who posted, or threatened to post, an intimate image without consent. Explore more with the **Consent** worksheet, and the weblinks **Sexting laws** and **eSafety Commissioner** in your Online Resources.

doc-33400

DID YOU KNOW?

A 2020 government report expressed growing concern about the possible negative effects of increased exposure to pornography among children and young people. These include the possibility of poor mental health; sexual aggression and violence; and unhealthy and sexist views of women, power and sex. Pornography can portray relationships and sexual activity in an unrealistic manner and ignore the importance of consent.

2.4 ACTIVITIES

1 Giving and seeking consent

You are at a party with your partner. Both of you are enjoying the music and the group of friends you are with. Your partner is a bit drunk. They approach you and whisper for you to meet them in one of the bedrooms. As you enter the room together you start kissing. You lay on the bed, and they begin to touch you in an intimate manner. Although your partner wants to have sex, you don't feel emotionally ready or comfortable about having sex for the first time in a situation like this.

a. Use figure 2.17 to identify the rights and responsibilities that you and your partner have.
b. Explain how your partner can gain consent and respond appropriately. Explain how you can give consent.

2 Finding local support services

a. Find a map of your local area and mark the positions of all the support agencies available to help you with issues related to relationships, sexuality and family.
b. Identify the most suitable route for getting to one of the agencies from your home.
c. Visit an agency and collect information about the services it offers, including information on access, cost, confidentiality and the type of issues for which it offers assistance. (*Note:* It may be easier to organise a class visit to a range of support agencies or to invite members of an agency to visit the class.)
d. During your contact with the agency and its staff, collect any pamphlets that describe the work it does. Be prepared to share this information with the class, reporting the details of your visit and the type of support available to young people from this support service.

3 Rights and responsibilities

As a class, create a code of conduct that clearly outlines your rights and responsibilities to ensure that everyone's sexuality is protected.

weblink

4 Consent information

Access the Kids Helpline weblink **What is consent?**

Create your own infographic, padlet wall, poster for the classroom or brochure to be displayed in a student area that will provide information to young people about the issue of consent.

5 Sexting laws

a. Use the **sexting laws** weblink in your Online Resources to read an article about the laws introduced by the Victorian Government in 2014.
b. As a class, discuss this legislation.
  i. Do you agree with the changes made?
  ii. Why were the changes made?
  iii. What are the implications of these laws for young people?

sexting laws sending photos, images, video or text messages of a sexual nature via mobile phones and social media sites

6 Everyday consent

Create an infographic for young people about how to report unwanted behaviour. As part of your infographic:
a. Create an infographic for young people about practising consent in everyday situations.
b. Outline the situations other than sexual activity that require you to think about someone's personal and emotional boundaries.

2.4 Exercise

2.4 Exercise

Select your pathway

LEVEL 1	LEVEL 2	LEVEL 3
1, 2, 3, 4, 5, 6	7, 8	9, 10

These questions are even better in jacPLUS!

- Receive immediate feedback
- Access sample responses
- Track results and progress

Find all this and MORE in jacPLUS

Check your understanding

1. MC What factors can affect young people's decisions about sexual health?
   A. Stereotypes represented by the media
   B. Society's expectations
   C. Personal values and beliefs
   D. All of the above
2. MC During adolescence, you should have sex:
   A. when you are ready.
   B. when your partner wants to.
   C. when your friends tell you to.
   D. never.
3. Sexual relationships have rights and responsibilities. True or false?
4. MC What does mutual consent mean?
   A. That both parties in the relationship agree with the decision
   B. That only one party in the relationship agrees with the decision
   C. The pressure to agree with a decision even if you don't want to
   D. None of the above
5. MC Sexting is the sharing of:
   A. intimate photos.
   B. intimate videos.
   C. intimate text messages.
   D. Any of the above

Apply your understanding

6. **Identify** the questions you need to ask yourself to determine whether you are ready to participate in sexual activity.
7. **Explain** why respect is both a right and a responsibility in relationships.
8. **Describe** what mutual consent means.
9. **Justify** each of the 5 easy steps to consent in figure 2.20.
10. **Create** a list of actions that you could take to protect yourself against someone pressuring you to participate in sexting or someone sending you unwanted nudes.

LESSON
2.5 Challenging stereotypes and assertive communication

LEARNING INTENTIONS

- Explain strategies for assertive communication and ways to challenge stereotypes and promote inclusion.
- Explore the intergenerational nature of inequity, violence and discrimination, and strategies for reconciliation, such as truth telling.

2.5.1 Challenging gender stereotypes

Gender stereotypes can be challenged by reading about, thinking about and discussing gender roles and how these are reflected in our own lives. We can give voice to these issues by talking about them in our families, with our friends and with our intimate partners in order to break the societal taboo that may surround them.

Sometimes, it can be hard to talk about gender stereotypes and people can be resistant to hearing about them. However, it's important to spread the message that rigid gender norms and inequality hurt everyone, including men and boys. These strict gender norms can be an underlying cause of gender-based violence.

ENGAGE

In 2020, Harry Styles became the first solo male on the cover of Vogue magazine, and he did so wearing a dress. The cover went viral.

Discuss whether these actions have an impact on redefining gender norms and challenging stereotypes. What does our society make of the idea that masculinity and femininity are not set in stone and should not limit people? How do you feel about the comment 'Women show up every day in pants, but the minute a man wears a dress, the seas part'?

FIGURE 2.24 Billy Porter, a US actor, has stated, 'My goal is to be a walking piece of political art every time I show up. To challenge expectations. What is masculinity? What does that mean? Women show up every day in pants, but the minute a man wears a dress, the seas part.'

Challenging stereotypes of any sort is essential to promoting inclusion and equality. Figure 2.25 outlines some things we can do to challenge stereotypes.

FIGURE 2.25 How to challenge stereotypes

Attitudes	• Believe that it's important for everyone to have the same opportunities and resources. • Reject the idea that discrimination is okay. • Believe that it's important to be equitable and inclusive. • Don't think of gender inequality as only a women's issue. • Be aware that a stereotype creates an emotional bias. Think about why it exists. • Value diversity as a resource rather than something to be feared.
Relationships	• Be able to have open and assertive conversations. • Respect and hear the voices of those who are discriminated against. • Remember that there are no traits, behaviours or preferences that are common to all women, or to all men. • Consider what you have in common with others rather than differences. • Develop empathy for others and try to 'walk in their shoes'.
Norms	• Treat everyone as an individual with unique characteristics and respect them for it. • Celebrate men who show vulnerability and help-seeking behaviour. • Embrace everyone's participation in all sports and representation of everyone in the media. • Understand that stereotypes about gender, culture or religion are outdated and limiting.
Language	• Use alternatives to common gendered nouns and pronouns. For example, use 'police officer' rather than 'policeman' or 'policewoman' and use the third person 'they'. • Do not provide irrelevant information about people's gender or cultural background (e.g. a female teacher or an Asian lawyer). • Use inclusive, positive language. For example, rather than saying something like 'Real men show their emotions', say 'It's healthy to show emotions'.
Media and advertising representations	• Reflect the diversity of gender, culture and ability in the population by including a wide range of people in digital and print media. • Make sure to check how roles are shown. For example, are only males shown in positions of power, or are all nurses shown as female? If so, change this to better represent the diverse population.
Laws and policies	• Support and abide by laws regulating the use of stereotypes in advertising. • Abide by gender discrimination policies. • Support human rights actions

2.5.2 Assertive communication about sexual health

Setting limits

Any relationship involves being aware of your values and setting the limits that feel comfortable to you. Being in an intimate respectful relationship doesn't just mean thinking about how often to call, text and when to hang out together. It also involves thinking about sharing private and personal information and deciding on what amount of physical intimacy feels right for you.

For example, making a choice about whether or not you would like to engage in sexual activity may involve thinking about:

- your reasons for wanting to explore sexual activity and if it fits with your own personal values, beliefs and comfort level
- if you feel safe with this person
- if there is anything you need to know before engaging in any sexual activity
- if you are trying to prevent pregnancy and, if so, what information/contraception might help you to do this
- if you are trying to prevent sexually transmitted infections (STIs) and, if so, what information/supplies you need
- if the sexual activity is legal in terms of age of consent
- what you can do to ensure that sexual activity is consensual.

Making the choice to be involved in sexual activity will also require you to talk with your potential partner about your expectations and sexual histories, consent and your desire to use safer sex or prevent pregnancy if relevant.

You will need to communicate your boundaries in an assertive manner. Assertive communication is about expressing your thoughts, feelings, opinions and boundaries in a way that makes your views and needs clearly understood by others, without putting down their thoughts, feelings or opinions.

When you communicate assertively, you can:

- say how you feel
- ask for what you want or need
- disagree respectfully
- offer your ideas and suggestions
- say 'no' without feeling guilty
- speak up for someone else.

In any relationship, you have the right to be assertive. In a sexual relationship, it is important to honestly express your thoughts and feelings. You need to do this in a way that shows respect for the other person's feelings, wants or needs. Positive sexuality occurs when both people in a relationship feel secure and not threatened or scared about the topic of sex. Using assertive communication promotes positive sexuality because it ensures that neither partner is pressured into doing things they don't want to.

Here is a script to help with assertive communication:

- 'I think ...' (simply express the facts of the situation and your perception of them).
- 'I feel …' (share your emotions or thoughts about the situation with an 'I' statement).
- 'I want ...' (clearly state the actions you want from the other person or what you want to happen).

FIGURE 2.26 If you are considering having sex, you must talk with your partner about contraception.

Safe sex

Sexual contact that doesn't involve the exchange of semen, vaginal fluids or blood between partners is considered safe sex. In a heterosexual relationship, there is a risk of unplanned pregnancy. It is the responsibility of both partners to take effective precautions to prevent an unwanted pregnancy. If pregnancy is not a risk, STIs can be.

In the 1960s, the contraceptive pill gave women the power to control if and when they became pregnant. This has led to some people believing it's only a woman's responsibility to use birth control in a heterosexual relationship. However, it is the responsibility of both partners to start a conversation about contraception. Each

weblink partner needs to communicate clearly and assertively about the issue of contraception. See the weblink **Being assertive and setting boundaries** in your Online Resources to learn more.

Detailed information about contraception can be found in *Jacaranda Health & Physical Education 7 & 8*, in Topic 3.

2.5.3 Challenging gender-based violence

A significant factor in reducing gender-based violence is addressing its causes. These include the unequal distribution of power and resources between the genders and sticking to rigid gender roles in communities and relationships.

Changing the story for women and girls

Our Watch, in their strategy 'Change the story', has developed a coordinated and effective national approach to preventing violence against women. Some of the actions they recommend include:

- challenging the idea that violence against women is okay
- promoting women's independence and decision-making
- building new social norms that aren't limited by rigid gender stereotypes
- supporting men and boys to develop healthy masculinities and positive, supportive male peer relationships
- promoting and normalising gender equality
- addressing gender inequality, as well as other forms of discrimination
- strengthening positive, equal and respectful relations between and among women and men, girls and boys.

The organisation White Ribbon Australia is part of a global social movement working to eliminate gender-based violence. Their research suggests that:

- women are far more likely than men to experience sexual violence and violence from an intimate partner, and with more severe impacts
- women are more likely than men to be afraid of, hospitalised by or killed by an intimate partner
- around 95 per cent of all victims of violence, whether women or men, experience violence from a male perpetrator.

The Australia Government's 'Let's stop it at the start' campaign (see Figure 2.27) is based on research that showed that while Australians agree that violence against women is wrong, they also tend to excuse disrespectful and aggressive behaviour towards girls from a young age. The research found that:

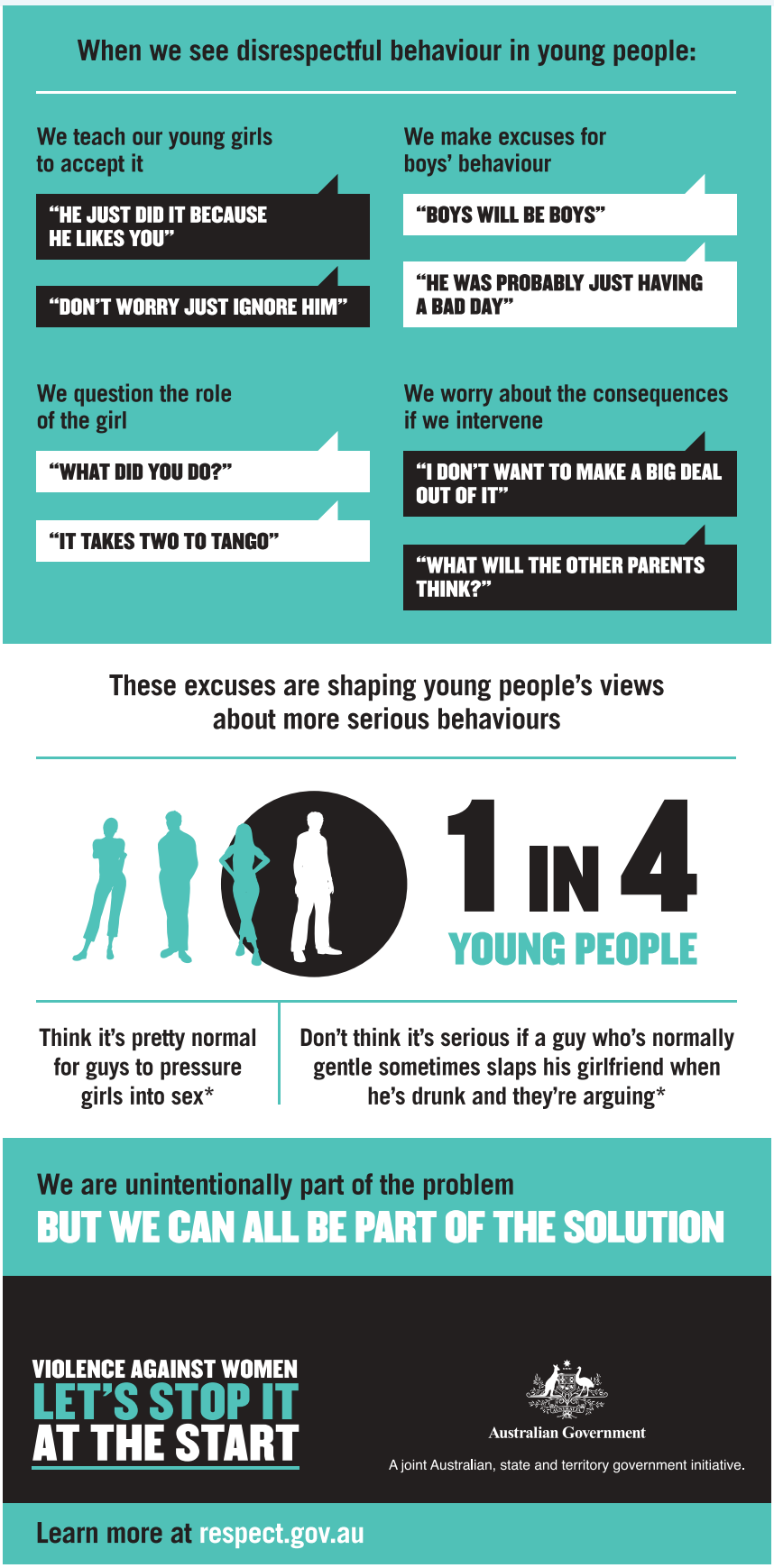
- young people begin to believe there are reasons and situations that can make disrespectful behaviour acceptable
- girls blame themselves and question whether the behaviour is potentially their fault
- boys blame others, particularly the female, and deflect personal responsibility
- adults accept the behaviour when they say 'it takes two to tango' or 'boys will be boys'
- parents worry about doing something in case it embarrasses their child, or even themselves
- teachers and coaches are unsure how far to go.

Changing the story for men and boys

In the 2020 report *Masculinities and Health*, VicHealth states that many young people, especially young men:

- feel there is social pressure on men to behave or act in a certain way because of their gender
- believe men need to be strong, not show vulnerability and always be in control
- still regard men as the main income earner and head of the household
- are unlikely to act if they witness abuse or disrespect of women
- have poor knowledge of gender equality
- have a low level of support for gender equality.

FIGURE 2.27 Let's stop it at the start campaign



If we want to prevent gender-based violence, we need to change the story for men as well as women. Gillette's ad 'The best men can be' used the razor brand's motto to show men differently to address gender stereotyping. 'The best men can be' tackles bullying, sexual harassment, inequality in the workplace and sexism on screen. It does this by using the men as role models to promote courage, humility, responsibility and kindness. The ad challenges viewers to question what masculinity is and what sort of behaviour defines 'manliness'. The campaign divided consumers, with some applauding its bravery, while others threatened to boycott the brand.

weblink See the weblinks **The best men can be** and **Breaking free from gender stereotypes** in your Online Resources to learn more.

2.5.4 Building respectful relationships through truth telling

Currently, in Australia, First Nations Australian women report experiencing violence at more than three times the rate of other Australian women. Over 70 per cent of First Nations Australian women report having experienced physical violence in their lifetime. The physical, verbal, sexual and emotional abuse they suffer is also often severe.

For many, gender inequality cannot be separated from other forms of discrimination and inequality. When discrimination, lack of respect and lack of empathy occur, relationships become unhealthy. For this reason, we can look to the history of **trauma** experienced by First Nations Australians to better understand violence against women in these communities, and how this might be overcome.

trauma a response to an event that is so overwhelming it leaves the person unable to come to terms with it

intergenerational trauma trauma that has lasting effects carried on from those who directly experienced it to their children and grandchildren

First Nations Peoples of Australia have experienced trauma as a result of colonisation. This has included violence, loss of culture and land, and discriminatory policies such as the forced removal of children. In many First Nations families and communities, who haven't had the opportunity to heal the pain and distress they feel, this can leave them feeling powerless and unable to cope, causing **intergenerational trauma**.

Experiencing intergenerational trauma increases the likelihood of someone:

- living in a state of distress or helplessness and having difficulty managing emotions
- questioning their sense of self and self-worth
- being homeless
- experiencing substance abuse
- having difficulty establishing their identity
- experiencing depression or suicide
- experiencing issues with communication patterns and trusting and connecting with others
- feeling a disconnect from their extended families, isolation and withdrawal
- having poor relationships with their own children, having been denied the opportunity to be nurtured themselves.

This can create a cycle of trauma where the impact is passed from one generation to the next.

Some of the outcomes of colonisation that contribute to violence against First Nations Australian women include:

- loss of family structure
- anger and rage
- the physical and psychological abuse of children who were removed from their families
- unemployment, financial problems, poverty and economic exclusion
- poor access to services
- intergenerational trauma, sometimes affecting three generations
- lack of education
- exposure to racism
- inadequate and overcrowded housing
- social isolation and deprivation.

Having traumatic events acknowledged and treated with respect by the wider Australian community can contribute to healing for First Nations Australians. This is where truth telling can help.

Truth telling is the recording and sharing of the histories and cultures of First Nations Peoples and their experiences following British colonisation. Through truth telling, we can also gain a better understanding of how First Nations Australian women and girls experience discrimination on the basis of gender, race, sexual orientation, gender identity, education and class, all at the same time. According to Our Watch research, truth telling is essential to understanding the conditions that have created and continue to contribute to the violence and gender inequality experienced by First Nations women and girls. Breaking down stereotypes is also an important step in reconciliation in Australia.

truth telling to record evidence about past actions and share culture, heritage and history with the broader community

weblink See the **Intergenerational trauma** weblink in your Online Resources for more information.

2.5 ACTIVITIES

1 There is more to me than what you see…

Create a poster that shows how a person of a particular culture, religion or gender can be more than the characteristics that are usually associated with a stereotype.

2 Respect checklist

weblink Use the **Respect checklist** and **Excuse interpreter** weblinks in your Online Resources to discuss how they would reduce disrespectful behaviour towards girls and change the attitudes of men and boys where necessary.

3 Sexual health information

With a partner, create a comprehensive list of sources that young people can access for information about their sexuality and sexual health. Once your list is compiled, consider:

a. How can the information be accessed?
b. How reliable is each source?
c. How do you determine what is a reliable or valid source?
d. How likely is it that young people will access each of these sources of information?

4 Assertive communication

a. Consider how assertive communication can work in a sexual relationship.
Billie is 17 and feels ready to have sex for the first time with their partner, who is 16 and a virgin. Billie respects and loves their partner and is not quite sure how to bring up the topic of sex without appearing to be putting pressure on them.
- *Billie discusses this in person with their partner when they are walking home alone.*
- *Billie brings up the topic by using 'I' statements such as 'I respect and love you very much. I believe that I am ready to take the next big step in our relationship'.*
- *Billie then states in a relaxed and comfortable tone, keeping eye contact, that their partner's beliefs will be respected and they will not be forced or pressured into doing anything they do not want to do.*
- *Billie tells them 'I am ready whenever you are ready'.*

b. Give examples of how Billie is using assertive communication skills.
c. Identify the impact on the relationship between Billie and their partner in terms of boundaries and safety.

5 Change the story

a. With a partner, select one of the actions to address violence against women suggested by Our Watch. Remember that you can also address violence against people who identify as trans or non-binary.
b. Brainstorm a range of ways to implement this action in your life, your school or the community in general.

6 Through a different lens

a. Create a presentation that challenges stereotypes.
b. In your presentation, include the media-driven perceptions and stereotypes about a cultural, gender or religious group and explain how people may have misconceptions about them as a result.
c. Use photography and authentic stories to give the group a voice.

2.5 Exercise

2.5 Exercise

Select your pathway

LEVEL 1	LEVEL 2	LEVEL 3
1, 2, 3, 4, 5, 6	7, 8	9, 10

These questions are even better in jacPLUS!

- Receive immediate feedback
- Access sample responses
- Track results and progress

Find all this and MORE in jacPLUS

Check your understanding

1. Assertive communication means giving choices that reflect only your own needs. True or false?
2. Violence against women and girls is caused by rigidly defined gender roles and unequal distribution of power and resources between men and women. True or false?
3. Changing the story for women only will prevent gender-based violence. True or false?
4. MC Which of the following factors contribute to violence against First Nations Australian women?
   A. Loss of family structure
   B. Unemployment and financial problems
   C. Poorer status in relationships
   D. All of the above
5. Truth telling is important for understanding violence against First Nations Australian women and girls. True or false?

Apply your understanding

6. **Identify** what being assertive would look like in a situation that is relevant to you.
7. **Summarise** the things you can do to challenge stereotypes.
8. **Explain** why strategies to address gender stereotypes and violence against women all mention 'healthy masculinity'.
9. **Explain** how truth telling can help to reduce violence against First Nations Australian women and girls.
10. Briefly **propose** how either the Voice to Parliament or treaty could help to break the cycle of intergenerational trauma.

LESSON
2.6 Review

Hey students! Now that it's time to revise this topic, go online to:

Review your results

Watch teacher-led videos

Practise questions with immediate feedback

Find all this and MORE in jacPLUS

2.6.1 What have I learned?

- Sexuality is more than just who a person is attracted to. It reflects who we are as people, is influenced by external factors and is subject to change throughout our lives.
- Stereotypes are a set of characteristics typically used to categorise a group of people. They often contain outdated ideas about what certain types of people should be like.
- Gender norms can promote a power and privilege imbalance that favours what is considered male or masculine over what is considered female or feminine.
- Gender norms and stereotypes are significant because they limit choices, behaviour, life goals and achievements.
- If there is gender equality, people of all genders have equal social status, power, resources or opportunities, and their voices, ideas and work are valued equally by society.
- Becoming independent involves being able to make choices based on the range of possible consequences and taking responsibility for your own decisions and actions.
- Respect means that you accept somebody for who they are, even when they're different from you or you don't agree with them.
- Communication is the key to building and maintaining a respectful sexual relationship.
- There are pressures on young people to be sexually active. The right time to participate in sexual activity is when you feel ready, not when you are feeling pressured into doing it.
- The majority of young people have not had sexual intercourse by Year 12.
- When there is a balance of power in a relationship, both people recognise that they matter and can influence decisions.
- Coercion describes any attempt to control your behaviour with threats or manipulation.
- When you give consent to engage in sexual activity, it must be voluntary, affirmative, freely given and ongoing.
- You must obtain consent from your partner for any sexual activity. This is part of a respectful relationship and is also required by law.
- Any information that you leave about yourself in an online environment adds to your digital footprint, which can be seen at any time in the future.
- Half of all secondary school students report having received sexually explicit messages.
- Alcohol and other drugs complicate sexual activity because they impair our judgement, capacity to communicate and ability to read and interpret others' communication. This may lead to someone pressuring you into doing something against your will.
- Many support organisations are available to provide young people with help with relationship issues and their sexual and reproductive health needs.
- In any relationship, you have the right to be assertive.
- We need to change the story for men as well as women if we want to prevent gender-based violence.
- Truth telling is essential to understand the conditions that have created and continue to contribute to the violence and gender inequality experienced by First Nations Australian women and girls.

ESSENTIAL QUESTION REVIEWED

- Why are gender equality, respect, empathy and consent so important in sexual relationships?
- What strategies can be used to challenge stereotypes and promote gender equality?

Evaluate your initial responses to the essential questions now that you have studied the topic.

on Resources

Interactivity Crossword (int-8997)

2.6.2 Key terms

adolescence period between childhood and adulthood; the World Health Organization defines it as between the ages of 10 and 19
coercion persuading or compelling someone to do something through the use of threats or force
consent informed and freely given agreement to engage in an activity, or permission for a specific thing to happen. This includes agreement and permission giving in online and offline situations.
digital footprint any information that you leave about yourself in an online environment
empathy the ability to identify, appreciate and understand another's situation or feelings
gender equality when people of all genders have equal rights, responsibilities and opportunities
gender norms ideas about how women and men should be and act
harassment a kind of bullying; any form of behaviour that is not wanted or is offensive, humiliating or intimidating
heterosexual being sexually attracted to someone of the opposite gender
homophobia irrational fear of, dislike of or discrimination against people who are homosexual or same-sex attracted. It can also refer to stigma arising from social ideologies about homosexuality.
homophobic bullying discriminating against people who are, or who are thought to be, same-sex attracted
intergenerational trauma trauma that has lasting effects carried on from those who directly experienced it to their children and grandchildren
intimacy a feeling of being close, emotionally connected and supported
non-binary does not identify as exclusively male or female
power the ability to exercise influence or control over others
prejudice-based bullying bullying behaviour as a result of prejudice that relates to perceived or actual differences
respect recognising and appreciating the differences between people and treating them fairly
safer sex protecting the health of both you and your sexual partner
same-sex attraction people who are emotionally and sexually attracted to people of the same sex. They often identify themselves as being gay or lesbian.
sexting laws sending photos, images, video or text messages of a sexual nature via mobile phones and social media sites
sexual behaviour a broad range of behaviours in which we display our sexuality
sexual coercion when someone won't accept 'no' and continues to try to convince you to engage in sexual activity
sexual health a positive approach to sexuality and sexual relationships; having safe and pleasurable sexual experiences, free of coercion, discrimination and violence
sexual identity how you think of yourself in terms of who you are romantically and/or sexually attracted to
sexual orientation a person's sexual or romantic attraction to another person; can include, but is not limited to, heterosexual, lesbian, gay, bisexual and asexual
sexual relationship a relationship that involves any form of sexual activity
sexuality how you see and express yourself sexually

sexually transmissible infection (STI) an infection that is spread via sexual activity
stereotypes conventional views or ideas (not necessarily accurate) about a group of people
transphobic bullying discriminating against individuals who are transgender; that is, individuals whose gender is not the same as, or who do not identify with, the sex they were assigned at birth
trauma a response to an event that is so overwhelming it leaves the person unable to come to terms with it
truth telling to record evidence about past actions and share culture, heritage and history with the broader community
values beliefs about what is important; guide our attitudes and behaviour
World Health Organization (WHO) responsible for leadership of global health matters for the United Nations

2.6 Exercise

2.6 Exercise

Select your pathway

LEVEL 1	LEVEL 2	LEVEL 3
1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 13	12, 15, 16	14, 17, 18, 19, 20

These questions are even better in jacPLUS!

- Receive immediate feedback
- Access sample responses
- Track results and progress

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Check your understanding

Identify whether the following statements are true or false.

Statement	True or false
1. Sexuality is binary and cannot change after birth.	
2. Values and attitudes affect what we think, feel, do and say.	
3. Gender equality is when people of all genders have the same status, power, resources and opportunities.	
4. Most young people are having sex.	
5. Consent only applies in sexual relationships.	
6. It is against the law to participate in any sexual activity without first gaining the other person's consent.	
7. Sexting can be against the law even if you have consent.	
8. Gender norms can influence sexual behaviour such as contraceptive use.	
9. Violence against women and gender-diverse individuals is a symptom and a cause of gender inequality.	
10. Rigid gender norms hurt everybody.	

Apply your understanding

11. **Identify** the meaning of sexuality.
12. **Examine** the impact gender norms and stereotypes can have on sexuality.
13. **Describe** how values and attitudes affect sexual behaviour.
14. **Justify** why gender equality is an important aspect of respectful relationships.
15. **Describe** what consent means.
16. **Explain** the traffic light analogy for consent.
17. **Examine** the impact of power and coercion on relationships.
18. **Propose** how you communicate boundaries in a sexual relationship.
19. **Justify** the importance of truth telling in breaking the pattern of violence and discrimination against First Nations Australian women.
20. **Examine** what individuals and communities need to do about gender stereotypes to support safe and respectful relationships.

Hey teachers! Create custom assignments for this topic

Create and assign unique tests and exams

Access quarantined tests and assessments

Track your students' results

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Online Resources

on Resources

Below is a full list of **rich resources** available online for this topic. These resources are designed to bring ideas to life, to promote deep and lasting learning and to support the different learning needs of each individual.

Topic PDF

2.1 Sexuality and sexual relationships (tpdf-3590) ☐

Digital documents

2.2 Alphabet gender (doc-14818) ☐
2.3 Mapping disrespect (doc-38004) ☐
2.4 Consent (doc-33400) ☐

Video eLessons

2.1 Sexuality and sexual relationships (eles-6099) ☐

Interactivities

2.6 Crossword (int-8997) ☐

Solutions

2.6 Answers: topic 2 (sol-1054) ☐

Weblink

2.2 Sexual identity ☐
When will she be right? ☐
Twelve small actions with big impact for Generation Equality ☐
A level playing field report ☐
2.3 Sexual, gender and bodily diversity discrimination ☐
A groundbreaking campaign is exploding the silence around LGBTIQ family violence ☐
2.4 ReachOut ☐
Kids Helpline ☐
Sexting laws ☐
eSafety Commissioner ☐
Kids Helpline — What is consent? ☐
2.5 Being assertive and setting boundaries ☐
The best men can be ☐
Breaking free from gender stereotypes ☐
Intergenerational trauma ☐
Respect checklist ☐
Excuse interpreter ☐

Teacher resources

There are many resources available exclusively for teachers online.

To access these online resources, log on to **www.jacplus.com.au**.

3 Managing risks

LESSON SEQUENCE

3.1 Overview 99
3.2 Risk and safety 100
3.3 Personal safety practices — alcohol, smoking, vaping and illicit drugs 109
3.4 Responding to emergencies — first aid and CPR 130
3.5 Support services in the community 153
3.6 Review 164

FIGURE 3.1 Not all risks should be avoided. If they are done safely, they can make worthy challenges.

LESSON
3.1 Overview

Hey students! Bring these pages to life online

Watch videos

Engage with interactivities

Answer questions and check results

Find all this and MORE in jacPLUS

3.1.1 Taking risks safely

Throughout your life, you will take part in many different kinds of challenging activities and come across a range of risks to your health and safety. The best part about being an adolescent is that you have all of life's experiences ahead of you! But in order to live a full, active and healthy life, having the skills and knowledge to keep yourself and your friends safe is important.

ESSENTIAL QUESTION

- Where in your life have you experienced risk?
- What strategies did you use to reduce the risk of harm?

STARTER QUESTIONS

1. What are some risks you've taken in the past year and how did you keep yourself and/or others safe?
2. What dangers can be associated with alcohol misuse and illicit drug use?
3. What is DRSABCD and how could it be used to save a life?
4. If a friend needed help, what support services within the community could you tell them to access?

on Resources

Video eLesson Managing risks (eles-6100)

LESSON
3.2 Risk and safety

LEARNING INTENTION

- Identify positive and negative risks, and plan and evaluate strategies to manage these situations.

3.2.1 Taking risks

Each day, people are presented with challenges, and they must make decisions about if and how they respond to these challenges. Making the right choice or responding in the most appropriate manner affects your ability to maintain good health and personal safety.

Risk refers to meeting challenges. These challenges can have the potential to cause harm, loss or injury. The harm or injury can be to you or others, and the loss can range from money and material possessions through to self-esteem and relationships. It is the process of meeting these challenges that can allow you to grow. Therefore, risks can be positive or negative.

risk meeting challenges that have the potential to cause harm, loss or injury

ENGAGE

In small groups, discuss risk and risky behaviour. Decide on the top 10 risk-taking behaviours of young people.

Classify each one as either a positive or negative risk, giving reasons for your answer.

As a class, discuss why you think some young people engage in these risky behaviours.

Harm minimisation strategies are designed to reduce risk and minimise the potential harm of an activity. In small groups, brainstorm the harm-minimisation strategies that you use in your everyday life to help avoid risk or injury to yourself or others.

FIGURE 3.2 Risk evaluation is an important life skill. Which person has employed a harm minimisation strategy?

3.2.2 Positive and negative risks

Risk-taking is a part of everyday life. Being able to identify risks and the level of risk is a very important skill.

Many young people are not aware of the potential risks of their behaviours and actions. Therefore, they do not consider the outcomes and the impact on their health and the health of others. The risks adolescents take may affect their physical, social or mental health and wellbeing. Table 3.1 provides examples of risks, grouped by the dimension of health and wellbeing they affect.

TABLE 3.1 Examples of risks

Physical health and wellbeing	Social health and wellbeing	Mental health and wellbeing
• Eating a poor diet • Riding a bike without a helmet • Experimenting with drugs • Undertaking a rock-climbing and abseiling course • Uploading photos of yourself to the internet	• Experimenting with a relationship • Changing peer groups • Stepping in to stop a friend being teased • Disagreeing with a friend about an activity he or she wants you to join • Intervening to stop an argument in the school playground	• Teasing and bullying • Sending text messages • Making a public speech • Becoming a mentor for a younger student

Not all risk-taking is negative. Risk-taking can also have positive effects, especially on mental health and wellbeing. For example, successfully taking some risks can increase **self-esteem**. Say you want to apply to be class or school captain. You risk not being elected, or perhaps being teased by your peers. However, the positive outcomes are that you can develop self-esteem by successfully making public speeches as part of the campaign process. If you succeed in being elected, you will experience a boost in self-esteem and confidence. In addition, even if you are not successful, the process of trying can build your **resilience**. This in turn can enhance your emotional health and wellbeing.

self-esteem the way you feel about yourself; high self-esteem means you feel good about yourself and you are confident in your abilities

resilience the ability to manage a difficult situation and 'bounce back'; increases the chance of responding well to future challenges

FIGURE 3.3 Risk-taking is a normal part of life and can allow a person to grow and develop their resilience.

DISCUSS

Some of the risks in table 3.1 are positive and some are negative.

a. Discuss which risks you would categorise as positive and which are more negative.
b. For each example of a risk, decide what the level of risk is (high, moderate or low).
c. If disagreement emerges, explore the reasons opinions differ.
d. Choose an example of risk and discuss how it may affect a person's health and wellbeing.

3.2.3 Risk-taking and adolescence

Exploring and taking greater risks and challenges on the path to independence is normal during adolescence. However, some worrying risky behaviours include:

- unprotected sexual activity
- sexting and other risky uses of social media
- tobacco smoking or vaping, alcohol misuse and binge-drinking
- illegal substance use
- dangerous driving
- illegal activities such as trespassing or vandalism
- fighting or violence.

Studies have shown that the brain is not fully formed until people reach their mid-twenties. The parts of the brain that control decision-making and impulse-control mature last. This may help explain why teenagers are more likely to take risks. University of Melbourne neuroscientist Professor Stephen Wood has studied the brains of adolescents. He believes that not all risk-taking is wrong, and that society's main challenge is to help protect young people from risks that can kill, and help them manage their risk-taking behaviour. He also believes that young people should have the opportunity to safely experience the levels of excitement they need. While many national and state health strategies are designed to reduce risk in the community, recognising that risk-taking is a normal part of growing up is also important.

3.2.4 Perceptions of risk

The class discussion suggested in section 3.2.2 should have made it clear to you that different people have different ideas about what makes an activity high risk or low risk. How a person sees risk can be influenced by the following factors:

- previous knowledge or experience
- level of skill in relation to the activity
- self-confidence
- self-esteem
- influence of peers and **peer group**
- influence of drugs at the time a decision is made
- amount of supervision available by adults or instructors during the activity
- level of perceived reward or benefit to the person
- the amount of safety measures and strategies in place to reduce harm.

peer group group of people of a similar age with similar interests, often from a similar social background

FIGURE 3.4 Talking to someone new can feel like a risky situation for people who are shy.

FIGURE 3.5 Public speaking may be low risk for someone who has previous experience and is confident in their level of skill.

3.2.5 Why do people take negative risks?

All people sometimes make poor choices and place themselves and others at risk. Some young people, in particular, take unreasonable risks due to lack of experience and prior knowledge about certain unsafe practices. Other reasons include:

- impressing peers
- attention-seeking
- thrill-seeking
- peer pressure
- rebelling against authority or testing boundaries
- wanting to maintain a friendship or relationship
- poor role modelling (especially by parents)
- responding to a challenge or a dare
- thinking their skills at an activity are better than they really are.

Poor choices can lead to high-level risk-taking. This can have a negative effect on health, self-esteem, friendships, and the respect and trust your friends and parents have in you. Injury to yourself and others, as well as property damage and trouble with the law, may also result from poor choices.

3.2.6 Positive risk-taking and reward

Positive risk-taking can lead to positive outcomes for groups and individuals. Challenging yourself to try new activities and extend your skill set are examples of stepping outside your comfort zone.

Risk-taking in a controlled environment that minimises the potential for harm can allow people to learn more about themselves, and build self-confidence and self-esteem. This promotes good mental health and wellbeing. Activities that can lead to positive health outcomes include:

- downhill skiing
- skateboarding
- rollerblading
- karate
- skydiving

- surfing
- mountain bike riding

While not without risk, these kinds of activity are exhilarating and challenging. Other positive risks that are important for personal growth include:

- applying for a new job
- taking on a leadership role
- public speaking
- standing up for something you strongly believe in.

Even though there is a risk of failure in these situations, if people don't take these risks, they are limiting their chances of expanding their skill set and the rewards this can bring.

FIGURE 3.6 Adventure and extreme sports, while risky, lead to positive outcomes for participants.

3.2.7 Assessing risks

Recognising an unsafe situation

At times you get a gut feeling that all is not right, and you feel unsafe. It is important to pay attention to this feeling, recognise the potential for harm and make a decision to either remove yourself and your friends from the situation, or do something to reduce the level of risk. However, you may not always get clear signals that a situation is unsafe. Adolescents may not have sufficient prior experience to identify the potential level of risk and consequences of their decisions and behaviours. Therefore, it is important to be willing to talk through situations with a trusted adult to get advice, guidance and other perspectives.

Harm minimisation refers to any actions or strategies to remove and reduce risk. A range of harm-minimisation strategies can be used in the situations young people are likely to experience, such as illicit drug or alcohol use and partying. General techniques can also be used by everyone to help avoid unsafe situations. The risk of harm can be reduced by assessing, thinking through a situation, investigating the situation or activity, and planning your involvement well ahead of time.

harm minimisation any action or strategy designed to remove or reduce risk and, therefore, prevent or minimise harm

Three steps can be taken to minimise the risk of harm.

1. *Recognise.* Notice when a situation is unsafe or could become unsafe. Be alert to your surroundings and take notice of your body's warming signs.
2. *React.* Respond to an unsafe situation by developing strategies and plans. This step involves decision-making and assertiveness.
3. *Report.* Tell other people about unsafe situations. This may include telling a trusted adult or telling your friends to keep them safe.

DISCUSS

What strategies do you use in everyday life to help reduce the chance of injury to yourself and the people around you?

Risk assessment

A risk assessment is simply a process of identifying the hazards, potential for harm and level of risk. Questions to ask yourself to determine the level of risk in a situation include:

- What are the dangers to me and my personal safety in this situation?
- What are the hazards that could result in physical harm?
- What is the risk for violence or unpredictable behaviour?
- Will people's decision-making be affected by alcohol and drug use?
- Are the people in the environment known and trusted?
- Are people looking out for me and my safety?
- What laws, rules or guidelines apply in this situation?
- What help or resources are available?
- Who would be at greater risk of harm?
- What is the potential level of harm if things go wrong? What is the potential loss?
- What is the level of risk versus the chance for reward in this situation?

3.2.8 Being assertive to manage risk

Setting your boundaries

Developing **personal boundaries** helps you to know what you are comfortable with, what your limits are and what level of risk is acceptable to you. Understanding and setting your boundaries is important. This process helps you identify your values. Knowing your personal boundaries can also act as a personal alarm to stop you from getting into situations that are uncomfortable, difficult to manage or dangerous. Setting clear boundaries in advance can empower you to resist peer pressure and avoid risky situations.

personal boundaries the limits you set for yourself and for your interactions with others to help you know what you are comfortable with

Asserting your boundaries

Assertively expressing your boundaries is an important way to manage, reduce or remove yourself from a risky situation. Saying 'no', even when you want to or need to, can be difficult. People may pressure you with comments such as, 'One won't hurt', 'Nobody will find out' or 'Everybody does it'.

You have many good reasons to be **assertive** and say 'no'. Positive self-talk is a great way to practise standing up to pressure. Examples of positive self-talk include:

- 'I can make up my own mind.'
- 'I am intelligent enough to think things through and understand the **consequences** of my actions.'
- 'Real friends will respect my right to make my own decisions, and they will understand my point of view.'
- 'I know my boundaries and I stand by my decision.'

assertive stating your point of view without being overly aggressive and without putting others down; being able to say 'no'

consequences results of a person's actions; may be either positive or negative

Being assertive takes practice, confidence, self-belief and careful analysis of the situation. Being assertive means standing up for your own rights and views while still recognising and respecting the rights of others. An assertive person typically uses the types of language shown in figure 3.7.

FIGURE 3.7 Language used by an assertive person

Being assertive also means being able to act on your beliefs. Some people say all the right things, but the real test of strength comes when they have to put their beliefs into action. For example, you may say that your health is important to you, but if you then stayed awake late at night using a device or participated in risk-taking behaviours such as binge-drinking, then your actions would not support your words..

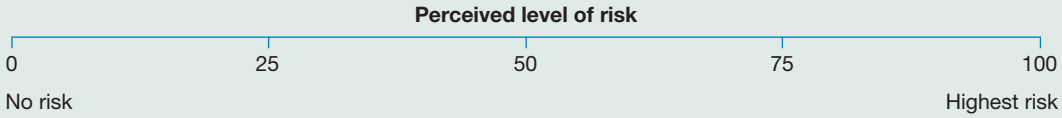
Setting and asserting your boundaries for safer sex

Setting clear boundaries is important in relation to your sexual health as well. Safer sex is about having sex when you are ready and about having sex that is consensual and enjoyable, respectful and protected. It is your right and your responsibility to protect yourself against unplanned pregnancy, sexually transmitted infections (STIs) and blood-borne viruses. This requires the correct use of a condom or dam (a female condom). Before participating in sexual activity it is important to set and assert your boundaries by talking about using condoms and dams to manage these risks and reduce harm. See Topic 2 for more information about assertive communication and relationships.

3.2 ACTIVITIES

1 Ranking risks

a. Draw a continuum, similar to the one provided, and then place each of the activities that follow on the continuum.



- **i.** Going to a party where alcohol will be provided
- **ii.** Rock climbing with an instructor present
- **iii.** Crossing the road at the lights
- **iv.** Surfing at Bells Beach
- **v.** Driving at 100 km/h in a 60 km/h zone
- **vi.** Bungee jumping
- **vii.** Flying in a hot air balloon
- **viii.** Drinking alcohol alone
- **ix.** Doing a somersault on a trampoline
- **x.** Taking a pill given to you at a party

b. Compare your continuum with that of the person next to you. Are they the same?

c. In pairs, discuss the concept of perceived risk. Why do some people rank some activities as higher risk than others?

2 Weighing the risks

doc-14735

a. Complete the **Making responsible choices** worksheet in your Online Resources to practise evaluating risky situations.

b. In small groups, address each situation outlined in the following list. Discuss realistic responses to each scenario and outline what you think you would do in each situation.

- **i.** *You have been invited to a party and you know that alcohol will be available. You are 15 years old and your parents will not allow you to go if they find out about the alcohol.*
- **ii.** *James is your best friend and you know that he regularly smokes cannabis. It has begun to affect your friendship and his behaviour has become erratic. James offers you cannabis at lunchtime. You are with two other mates who have already accepted his offer.*
- **iii.** *You have been at a party with your friend. Her father has come to take you both home in his car. It is obvious to you that he is drunk.*
- **iv.** *You have just met a really nice boy for the first time at a party. He offers to walk you home because he lives nearby.*
- **v.** *Your friend got really drunk at a party two weeks ago and you have heard, but do not know for a fact, that she was taken advantage of by a boy and had unsafe sexual intercourse. You know who the boy is.*
- **vi.** *You are new at school and in order to be 'initiated' into the group you really want to hang out with, you are being dared to steal food for them from the canteen.*
- **vii.** *On the way to a school dance with friends, somebody pulls out a vape and passes it around. Eventually, the vape ends up in your hand.*
- **viii.** *You are alone at home with your boyfriend/girlfriend and they are pressuring you to have sex with them, but neither of you have a condom.*
- **ix.** *You are on your P-plates and are heading to a party. You have enough room for four passengers, but your friends want to squish six passengers into the car.*
- **x.** *You owe your parents $50, but you have no money. Your friends tell you that playing poker online is fun and an easy way to win money.*

3 Being assertive

a. Form a small group with students you do not often talk to. Select two situations from the following list and discuss them. In particular, discuss the level of pressure being applied, whether you have ever said something like this to someone, and whether you think saying these things harms anyone.

- *Let's not go to school today — the one-day cricket match is on in the city.*
- *It's easy. I do it all the time and I haven't been caught.*
- *It's only 10 pm, you have plenty of time.*
- *My friend is 18 and he can get beer for us. Let's have a few at the party.*
- *Don't tell anyone about this or I'll be in serious trouble.*

b. After your discussion, consider the whole list and answer the following questions.

i. Identify which of the scenarios would have put the most pressure on you to either say 'yes' or comply.

ii. List what the consequences could be if you said 'yes' or did not disagree in each scenario. Think about your responsibilities to your school, parents, friends, yourself and people you don't even know.

iii. List the consequences you could face if you said 'no' in any of the scenarios.

iv. Identify if you disagreed with any of the responses from other members of your group. Why?

4 Harm reduction

Choose one of the following harm-reduction strategies. Use it for a class debate.

a. Needle exchange programs
b. Safe injecting houses
c. No smoking in restaurants or pubs
d. Ecstasy testing kits
e. Hidden speed cameras

3.2 Exercise

3.2 Exercise

Select your pathway

LEVEL 1	LEVEL 2	LEVEL 3
1, 2, 4, 5, 6	3, 7, 8	9

These questions are even better in jacPLUS!

- Receive immediate feedback
- Access sample responses
- Track results and progress

Find all this and MORE in jacPLUS

Check your understanding

1. MC What can acceptable risk lead to?
   - **A.** Injury or illness
   - **B.** Death
   - **C.** Positive outcomes
   - **D.** Losing friendships
2. MC Why do people take risks?
   - **A.** To impress their peers
   - **B.** To rebel against authority
   - **C.** To respond to a challenge or dare
   - **D.** All of the above
3. MC What are harm-minimisation strategies designed to do?
   - **A.** Increase the risk of potential harm
   - **B.** Help parents raise their children
   - **C.** Hurt people
   - **D.** Decrease the risk of potential harm
4. MC How is risk best defined?
   - **A.** Something that has only negative consequences
   - **B.** Something that has only positive consequences
   - **C.** Stepping outside your comfort zone
   - **D.** Exposure to challenge, injury or loss
5. Risk can be both positive and negative. True or false?

Apply your understanding

6. **State** five examples of positive risks and five examples of negative risks, and **justify** your answer.
7. Using the positive and negative risks you identified in question 1, **discuss** who influences people to take these risks.
8. **Explain** what is meant by harm-minimisation and provide an example.
9. **Discuss** the safety devices and harm-minimisation strategies you use most often. **Explain** how these increase personal safety and improve health and wellbeing.

LESSON
3.3 Personal safety practices — alcohol, smoking, vaping and illicit drugs

LEARNING INTENTION

- Explore the risks associated with alcohol, smoking, vaping and illicit drugs, and propose and practise a range of strategies to minimise harm.

3.3.1 Risky behaviours

Alcohol, binge-drinking, smoking, vaping and illicit drugs are some of the biggest social issues and risks that adolescents deal with. These can cause physical, social and mental harm. Many strategies and programs aim to combat these issues. In this lesson, you will explore the risks associated with these behaviours, look at ways to minimise harm and develop strategies to party safely.

ENGAGE

- What are the risks associated with drinking alcohol and binge-drinking?
- How does alcohol misuse affect the body?
- What strategies could you put in place to reduce the risks associated with alcohol misuse? Think about how to minimise the risk of physical injury, relationship breakdown and mental health impacts.

FIGURE 3.8 Risk-taking behaviours, including binge-drinking, double when peers are around.

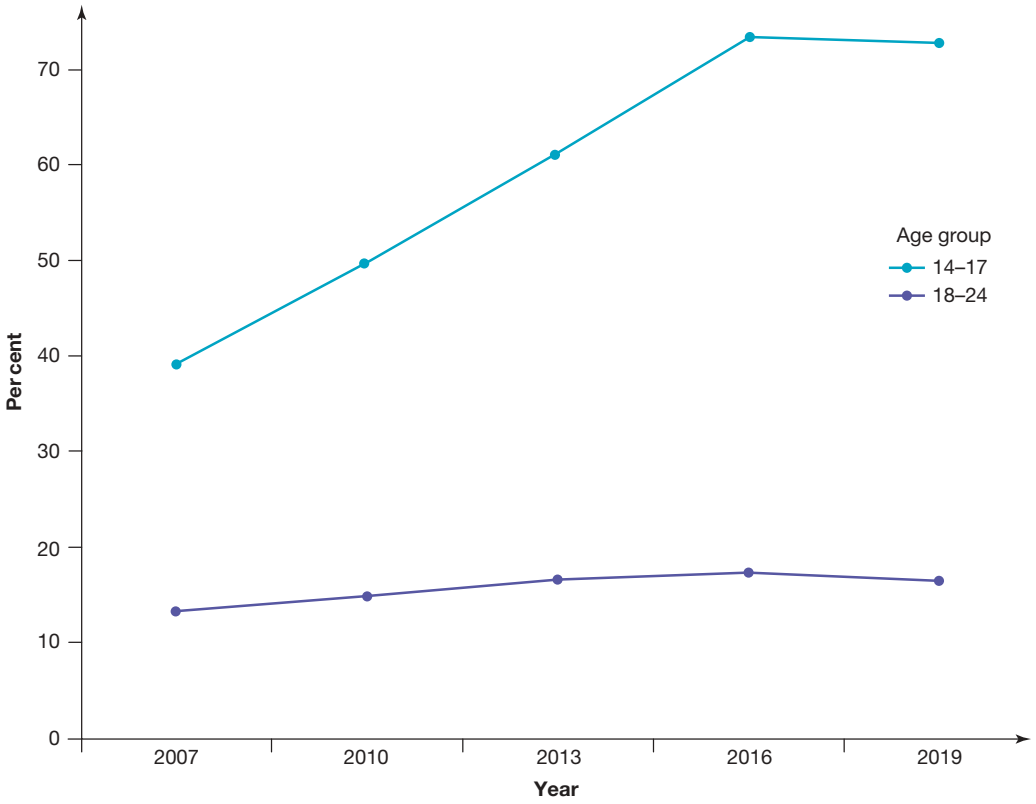
3.3.2 Alcohol

During adolescence, people may experiment with alcohol. Youth under the age of 18 are strongly recommended not to consume alcohol. Laws prohibit drinking for people aged under 18 because their bodies and brains are experiencing rapid development. In fact, the Australian Government states that 'children and teens under 18 should not drink any alcohol. Drinking alcohol can impact brain development up until the age of 25 years — affecting their attention, memory and decision-making'.

FIGURE 3.9 The teenage brain is experiencing significant growth. Alcohol can cause problems for brain development during this period.

Alcohol is a widely used and accepted drug in our culture. In 2018, alcohol was the fifth highest risk factor contributing to ill-health and death in Australia. However, the number of young people who drink is falling. Young people are drinking less and starting later. The graph in figure 3.10 shows the percentage of young people who abstain from drinking (meaning they do not drink alcohol).

FIGURE 3.10 Percentage of alcohol abstainers, 14–24 year olds, 2007–2019



Binge-drinking and pre-loading

While the rate of youth drinking is falling, many young people continue to engage in risky drinking. In Australia, risky drinking is defined as drinking more than four standard drinks on any one day. Of particular concern is binge-drinking.

Binge-drinking involves quickly drinking large amounts of alcohol over a short time. Young people will often 'pre-load' alcohol before going out with friends. The goal is to get drunk.

binge-drinking drinking large amounts of alcohol in a short period of time; drinking constantly for a number of days; drinking to get drunk

The risk of binge-drinking is that there is a delay between consumption of alcohol and its effects on the body. It takes for the body to absorb and process alcohol. Drinking large amounts quickly means the effect can hit suddenly and be quite dangerous. Possible outcomes include:

- alcohol poisoning
- blackouts
- violence-related trauma
- higher rates of injuries, cuts and concussions
- death.

Types of alcohol and its absorption by the body

Alcoholic products are grouped into three general categories, based on how they are made. The three main categories are:

- beer
- wine
- spirits.

FIGURE 3.11 A range of alcoholic beverages are available. They all contain different amounts of alcohol.

Choosing what to drink is a personal choice, but it is worth remembering that different types of drinks contain different amounts of alcohol. Spirits such as vodka, gin and tequila have a far higher alcohol content than wine or beer, and a relatively small amount is needed to affect the body. Overdosing on spirits is easy, so they carry a higher risk of alcohol poisoning and damage to the brain and liver. Often pre-mixed spirits are flavoured and sweetened to disguise the taste of the alcohol, making it even harder to know how much is being consumed. Knowing what makes a standard drink, and checking labels to see how much alcohol is in pre-packaged drinks can help you manage the amount of alcohol you consume. The amount of alcohol in the drink is often shown as a percentage.

Alcohol, once consumed, is absorbed into the bloodstream through the stomach wall and small intestine. Food in the stomach slows down absorption, but does not prevent it. The effect of alcohol on individuals depends on:

- age
- height
- weight
- gender
- mood
- general health
- how quickly the alcohol is drunk
- whether any drugs have been taken as well.

Sobering up after drinking alcohol can only be achieved with time. The liver breaks down approximately one standard drink of alcohol each hour. Cold showers, strong coffee and fresh air have no effect at all on your blood alcohol concentration (BAC) and do not speed up the process of sobering up.

Standard drink labels on alcoholic products

According to the Australia New Zealand Food Standards Code, all packaged drinks that contain alcohol must have labelling to indicate:

- the number of standard drinks it contains
- the percentage of alcohol to volume that it contains.

This is true whether the drink is in a can, bottle or cask.

on Resources

Interactivity Standard drinks (int-5505)

FIGURE 3.12 Standard drink labelling

The effect of alcohol on the body

High levels of alcohol consumption can cause short- and long-term consequences. The short-term effects and risks of alcohol misuse are listed in figure 3.13. In addition, excessive alcohol consumption can lead to alcohol poisoning, which can cause asphyxiation (suffocation) if vomit gets into the lungs.

In the long term, consumption of alcohol has been linked to weight gain, obesity and a range of other diseases, including heart disease, stroke, liver disease, disorders of the pancreas and cancer of other organs. Some of the long-term effects of alcohol on the body are shown in figure 3.14.

FIGURE 3.13 Short-term effects and risks of alcohol

int 6014

FIGURE 3.14 Alcohol affects all parts of the body, in both the short and long term.

Short-term effects of alcohol

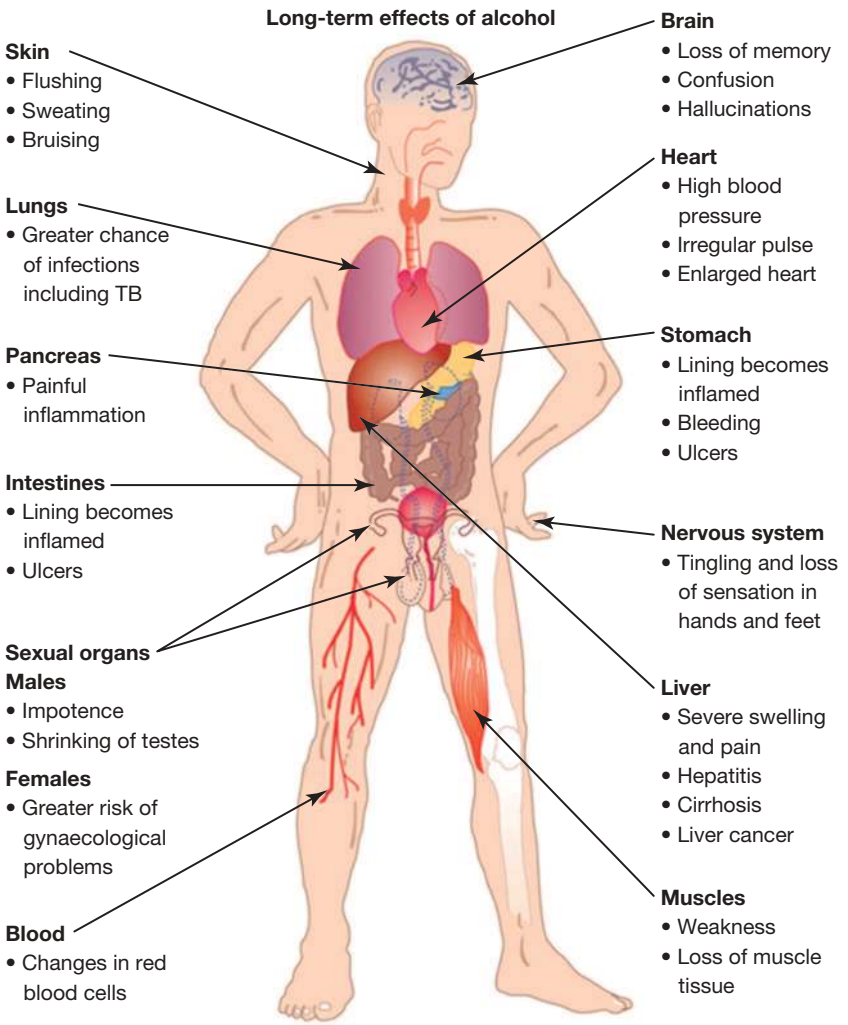
After a few drinks ...
Effects: Elevated mood, relaxed, poor concentration, slow reflexes

A few more ...
Effects: Fewer inhibitions, more confidence, less coordination, slurred speech, intense moods (sad, happy, angry etc.)

And a few more ...
Effects: Confusion, blurred vision, poor muscle control

More still ...
Effects: Nausea, vomiting, sleep

Even more alcohol may cause coma or death.



Alcohol and consent

An intoxicated person may experience:

- loss of coordination and balance
- slurred speech
- impaired judgement
- delayed reaction time
- sleepiness
- 'blackouts'.

Therefore, a drunk person is unable to make informed, reasonable and rational decisions.

Remember that without consent, sexual activity is against the law. Alcohol makes consent harder to navigate. If a potential intimate partner has been drinking alcohol or using drugs, it is up to you to recognise and respect if they are unable to give consent. It is never someone else's responsibility to tell you 'no'.

FIGURE 3.15 A person is unable to give consent if under the influence of alcohol or drugs.

Recall from lesson 2.4 that consent must be:

- mutual
- freely given
- certain and clear
- enthusiastic
- reversible
- specific
- ongoing.

Consent cannot be **freely or voluntarily given** if the person is intoxicated or drug affected. Likewise, because consent is **reversible**, a person should always be able to change their mind and choose to stop what they're doing. If they are unable to do this due to the influence of alcohol or drugs, they are not consenting.

Sexual contact with someone who is not consenting is sexual assault, which is a criminal offence. Taking advantage of someone who is intoxicated and pressuring them into doing something against their will is coercion, which is also illegal.

Keeping track of how much you drink

Keeping track of how much alcohol you have consumed can be difficult for the following reasons:

- You may not know how much alcohol the drink contains (alcohol percentage to volume).
- Glass sizes are different in different places.
- Different types of drinks contain different amounts of pure alcohol.
- Drinks can be mixed with unknown quantities of alcohol, such as in cocktails and alcoholic punches.
- Jugs and casks can be shared.
- Glasses may be 'topped up' before they are empty.
- Drinks may be 'free poured'.

FIGURE 3.16 Remembering what you've had to drink can be difficult, especially the more alcohol you consume.

You cannot judge your level of intoxication by how you are feeling. Your perception of how drunk you are can be influenced by:

- your mood
- how much sleep you have had
- your stress levels
- the amount of alcohol you have consumed.

Your blood alcohol concentration (BAC) is the only true measure of how intoxicated you are.

Drink spiking

Drink spiking is when alcohol or another drug is deliberately placed in a person's drink without their knowledge. The most common drug used for drink spiking is extra alcohol. People usually spike drinks as a prank to get someone drunk, but sometimes drink spiking is used to assault, rob or rape someone. Young women are more commonly the targets of drink spiking but it can happen to anyone. Experts estimate that one-third of drink spiking incidents are associated with a sexual attack. Drink spiking is illegal in all Australian states and territories. Penalties include fines and imprisonment.

You can reduce the risk of drink spiking when you are out by:

- not leaving drinks unattended
- not accepting drinks from strangers
- not sharing drinks, especially with unknown people
- keeping your drink covered
- always buying your own drinks and watching them being poured
- not drinking or tasting a drink belonging to someone else
- disposing of your drink if you think it tastes odd.

Strategies to minimise alcohol consumption and harm

If you are planning on consuming alcohol, you can minimise the potential harm to yourself and others by using the following strategies:

- Avoid drinking before going out (pre-loading).
- Avoid drinking in rounds, getting into 'shouts' or playing drinking games with friends. This can lead you to drink more and faster than planned.
- Avoid doing shots.
- Order smaller serves of beer, cider or spirits, rather than pints or double serves.
- Don't let others top up your glass or 'free pour' your drink. This can cause you to lose track of how many drinks you've had.
- Look at the time when you consume each drink to help you monitor how much and how quickly you are drinking.
- Avoid high-alcohol content beverages, such as cocktails or spirits.
- Don't use alcohol to hydrate when you are thirsty, especially if drinking in hot weather.
- Consider mocktails or non-alcoholic versions as an alternative to alcoholic drinks.
- Set yourself a limit and count your drinks.

weblink

For more information go to the **Drinkwise** weblink in your Online Resources.

FIGURE 3.17 The following strategies can help reduce the effects and harm of alcohol.

Drink water or other non-alcoholic beverages between alcoholic drinks, such as flavoured soda water.	Occupy yourself while drinking to reduce the amount you're consuming; play pool, sing karaoke, dance or talk to friends.	Eat some food before and while drinking to reduce how fast you are drinking and slow the absorption of alcohol.

CASE STUDY: Mindful drinking

From 'Australians are embracing "mindful drinking" — and the alcohol industry is also getting sober curious', *The Conversation*, 1 July 2021.

In 2020, Australia's first non-alcoholic bar opened in Brunswick. Sydney quickly followed suit. Major liquor retailers are dedicating more and more shelf space for the growing range of no-alcohol and low-alcohol drinks.

Alcohol-free wines, beers and spirits are increasingly sophisticated, driven by consumers taking more care in what they drink — and how they choose to drink.

Over the past 15 years, alcohol consumption has decreased in Australia, from 10.8 litres per capita per year down to 9.4 litres, the lowest seen in 50 years. Similar trends have been seen globally.

The reduction has been particularly stark for the younger age groups: the number of people in their 20s abstaining from alcohol increased from 8.9% in 2001 to 22% in 2019.

Saying no to excessive drinking is the new act of youth rebellion.

'Sober curious' and 'mindful drinking'

Drinking or not drinking was once seen as binary: you were a drinker, or you were sober. But recent years have seen a rise of the 'sober curious', or the 'mindful drinking' movement.

This might mean pausing to consider your need to drink, or how much you will drink. Maybe replacing your midweek glass of wine or beers with a non-alcoholic alternative. It's about stopping to ask yourself why you want to have a drink, and if each and every drink needs to be alcoholic.

This moves away from the extremes of teetotallers vs binge drinkers and opens up the idea of drinking — or not — on any given occasion.

We could also call these people moderate drinkers: they embrace mindful drinking as a lifestyle, using social media hashtags such as #soberissexy #sobercurious and #hangoverfree. These hashtags show images of health, happiness, empowerment and success — people living life to the full.

…

Non-alcoholic wines are reported to be one of Australia's fastest growing drink categories, valued at more than A$4.5 million last year, and predicted to be worth $15 million by the end of this year. Despite the growth, they still account for less than 1% of Australia's total wine consumption.

But … what is the point?

So, why not just drink water, or a soft drink? Drinking is not just about quenching your thirst, or just about intoxication. Drinking is a social event, a ritual, a reward and an experience. Drinks are paired with food and are to be enjoyed.

…

Many of these needs can be fulfilled by non-alcoholic wine ...

The future is mindful

Drinking alcohol is seen as a way to relax, socialise and gain a sense of pleasure.

But the mindful drinker gains their sense of pleasure and enjoyment through abstaining or moderating their drinking.

Embracing mindful drinking has been shown to generate positive feelings such as a sense of self-determination, building self-esteem, and feeling comfortable with one's social identity.

Consumers want alternatives and are excited by new products and innovation.

Some dealcoholised beers and wines have even won awards against standard strength wines — so the mindful drinker may be getting the pick of the shelf.

Source: Tamara Bucher & Melanie Pirinen, 'Australians are embracing "mindful drinking" — and the alcohol industry is also getting sober curious', June 30, 2021. *The Conversation*. https://theconversation.com/australians-are-embracing-mindful-drinking-and-the-alcohol-industry-is-also-getting-sober-curious-160931

Questions

1. Describe the changes in patterns of drinking alcohol over the last 50 years.
2. Explain how consuming non-alcoholic beverages (drinks) might improve health and wellbeing.
3. Discuss why you think the demand for non-alcoholic drinks has increased, rather than people switching to drinking water or soft-drinks.

3.3.3 Smoking and vaping

Smoking is the leading cause of preventable ill-health and death in Australia. The introduction of tougher laws and confronting advertising campaigns has reduced the percentage of people who smoke. However, smoking is still a major concern, killing more Australians every year than road accidents, alcohol and other drugs combined. Further, the use of vapes and e-cigarettes is increasing among adolescents, and these also have negative health consequences.

Smoking

Smoking is the process of burning substances so that the resulting smoke can be inhaled to be tasted and absorbed into the blood stream. Smoking is generally related to tobacco but can also involve marijuana and other drugs. Choosing to smoke cigarettes is often the result of peer pressure or poor role-modelling. It is a risky behaviour because it is associated with significant health effects. The Australian Government continues to put in place rules and initiatives to help reduce the number of people who smoke. Some of these initiatives include:

- banning smoking in public places
- using graphic anti-smoking advertising on television
- placing warning labels on cigarette packets.

DID YOU KNOW?

Tobacco smoke contains over 4000 chemicals and vaping at least 2000, many of which are highly toxic.

Immediate effects of smoking tobacco

The immediate effects of smoking can be felt for up to 20 minutes after smoking a cigarette. They include:

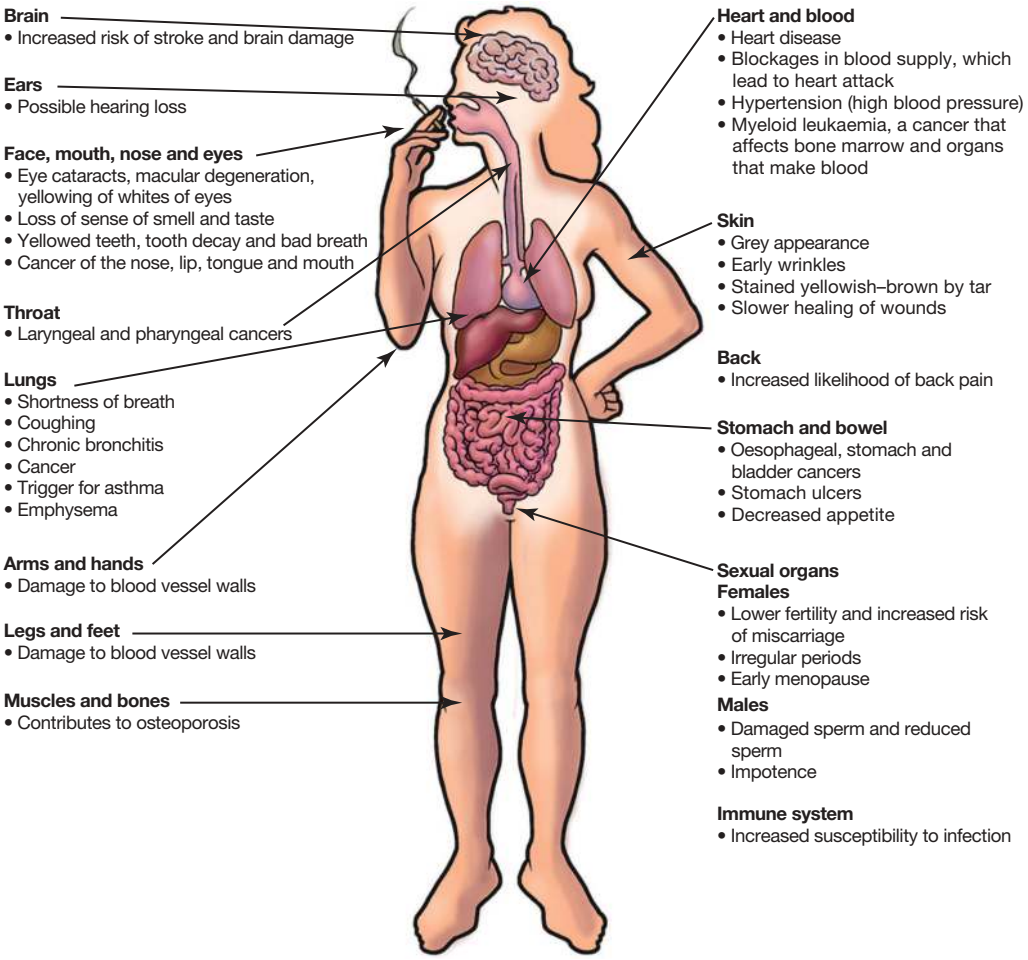
- increased blood pressure and heart rate
- dizziness
- over-stimulation of brain and nervous system activity
- reduced blood flow to the extremities, including the fingertips and toes
- bad breath
- poor sense of taste and smell.

Long-term effects of smoking

Some of the long-term effects of smoking are shown in figure 3.18.

int-6015

FIGURE 3.18 Long-term effects of smoking on the body



DID YOU KNOW?

Twelve months after you quit smoking, your risk of dying from heart disease is half that of a continuing smoker.

Vaping

Vaping is a growing social behaviour among adolescents. It involves the inhaling and exhaling of an aerosol, also known as a vapour. The aerosol starts as a liquid. These liquids come in many different flavours and they can contain harmful chemicals such as nicotine.

Using an e-cigarette is a common way of vaping. This battery-powered device is designed to heat up and turn the liquid solution into an aerosol. This is then inhaled through the mouthpiece. E-cigarettes come in many different shapes and sizes, and can be disguised as regular cigarettes, USB memory sticks, pipes or pens.

Under current state and territory laws, it is illegal to possess, supply or sell nicotine-containing e-cigarettes, except in specific circumstances or by prescription. Laws are continually being reviewed and amended to address this growing behaviour.

FIGURE 3.19 The Australian Secondary School Students' Alcohol and Drug (ASSAD) survey in 2017 found that 14 per cent of 12 to17 year olds had vaped at least once.

FIGURE 3.20 Vapes contain toxic chemicals that are often inaccurately labelled.

FIGURE 3.21 Vapes can be disguised — for example, as USB sticks — and the liquids are flavoured to make them more appealing.

Health effects of vaping

The long-term health impacts of vaping are still not known because this is a relatively new technology. A particular concern is that the ingredients of vape liquids are difficult to know because of poor, incomplete or incorrect labelling. Some people believe that vapes are less dangerous than smoking tobacco, but they are not risk free. There is currently not enough evidence or research to say that vaping and e-cigarettes are a 'safe' alternative to tobacco smoking.

Some concerns and potential impacts of vaping include:

- risk of asthma and lung irritation
- harm to brain and lung development, especially in young people, due to toxic chemicals
- consumption of poisons, including nicotine
- can be addictive, and can cause addiction issues in young people.

3.3.4 Illicit drugs

An **illicit drug** is a drug that has been banned by law. Selling or taking such drugs without a prescription from a doctor is illegal. Table 3.2 summarises the most common types of illicit drugs and their effects.

illicit drug any drug that is banned by law

cannabis illicit depressant drug that can have a hallucinogenic effect

TABLE 3.2 Common illicit drugs and their effects

Drug	Also known as	Possible effects
Marijuana	**Cannabis**, pot, weed, mull, ganja	• Impairment of mental process • Reduced motivation • Short-term memory loss • Poor coordination • Slow reflexes • Impaired driving ability • Panic and paranoia • Mood swings • Psychosis • Difficulty learning new things • Bloodshot or glassy eyes • Lung cancer and bronchitis • Low birth weight babies
Amphetamines	'The drugs that'll keep you awake all night'	• Anxiety and irritability • Panic attacks • Paranoia • Depression • Blood-borne infections (through sharing needles) • Increased heart rate and irregular heartbeat • Increased breathing rate • Heart palpitations • Headaches • Dizziness • Insomnia • Malnutrition • Emotional problems • Amphetamine psychosis and paranoid delusions
Heroin	Smack, white lady	• Huge risk of overdose • Highly addictive • Nausea • Constipation • Anxiety disorders • Blood-borne infections (through sharing needles) • Death from overdose

(continued)

TABLE 3.2 Common illicit drugs and their effects *(continued)*

Drug	Also known as	Possible effects
Methamphetamine	Ice, meth, crystal, chalk	• Anxiety and confusion • Highly addictive • Mood swings • Increased pulse rate • Increased blood pressure • Hallucinations and delusions • Respiratory problems • Eating and sleeping disorders • Violent and/or erratic behaviour • Paranoia • Reduced motor skills • Impaired verbal learning • Emotional and cognitive problems
Cocaine	Coke, charlie, gold dust, rock	• Anxiety • Increased pulse rate • Paranoia • Agitation • Hallucinations • Respiratory problems • Collapse of the nasal septum • Eating and sleeping disorders • Sexual problems • Social, financial, workplace problems • Violent and/or erratic behaviour
GHB	GBH, fantasy, liquid ecstasy, G	• Extreme grogginess • Difficulty with vision • Problems moving and speaking • Disorientation • Convulsions • Seizures • Coma • Respiratory collapse • Amnesia • Death
Ecstasy	Eccy, MDMA, E, the love drug	• Paranoia • Decreased emotional control • Lethargy and energy loss • Nerve cell damage • Liver and brain cell damage • Jaw clenching and teeth grinding • Increased blood pressure and pulse rate • Raised body temperature • Excessive sweating • Nausea and vomiting • Severe depression • Insomnia

Source: Where's your head at? National drugs campaign brochure.

cocaine illicit stimulant with hallucinogenic properties

ecstasy illicit drug; extremely dangerous, causing paranoia, organ damage, insomnia and dehydration

It is difficult to predict what the effects of taking drugs will be. The effects depend on:

- the strength of the substance and its chemical properties
- the amount taken and how it is taken
- other drugs taken at the same time
- the emotional state of the user
- the physical health of the user
- the environment in which the drug is taken.

Alternative and new types of drugs become available regularly. For example, new versions of **amphetamines** may not be mentioned in table 3.2. It is important to remember that these drugs will negatively affect your health in a similar way, even if they have a different name.

FIGURE 3.22 Choosing to be active at parties is a safer choice than drinking or taking drugs.

Table 3.3 looks at harm-minimisation strategies to help reduce the risk of injury or death associated with drug use. Government and law enforcement agencies look at controlling supply and reducing demand. They also put in place strategies to reduce the harms of the drug, including the effects on the community.

amphetamines illicit drugs with several names, such as speed or ice; affect the activity of chemicals in the brain, causing anxiety, shaking and panic attacks

TABLE 3.3 Harm-minimisation strategies

Drug type	Supply control	Demand reduction	Harm reduction
Tobacco (nicotine)	• Age restrictions on sale and purchase • Licensing of manufacturers	• Quit campaigns • Classes for smokers about how to quit • Ban on advertising and sponsorships • Increased tax to raise prices	• Smoke-free workplaces • Nicotine skin patches • Nicotine chewing gum • No smoking in hotels, clubs, restaurants and sporting venues
Alcohol	• Age restrictions on sale and purchase • Proof-of-age entry to licensed premises • Licensing of manufacturers	• Media campaigns • Education programs • Parent education about role-modelling • Alcohol-free leisure activities	• Low-alcohol or non-alcoholic drinks • 'Safe' drinking guidelines • First aid training • Random breath tests for drivers
Prescription drugs and medicines	• Testing and manufacturing controls • Age restrictions on sale, purchase and use • Parent education	• Education programs • Parent education • Relaxation training • Stress management	• Consumer information on labels and packets (e.g. dose levels)

(continued)

TABLE 3.3 Harm-minimisation strategies *(continued)*

Drug type	Supply control	Demand reduction	Harm reduction
Cannabis (marijuana)	• Customs actions • Legal sanctions on supply, possession and use • Sanctions on use at school	• Media campaigns • Education programs • Relaxation training • Stress management	• Promotion of safer methods of ingestion
Opiates (heroin, morphine, methadone)	• Customs actions • Legal sanctions on supply, possession and use • Access restricted to medical uses	• Education programs • Treatment programs • Therapeutic communities	• Provision of free needles and syringes • Advice on cleaning equipment • Methadone programs
Ecstasy, LSD, amphetamines and others	• Legal sanctions on manufacture, supply, possession and use	• Public education campaigns	• Providing water at raves and dance venues • Ensuring venues are well ventilated • Offering first aid at venues

Source: Australian Drug Foundation.

Resisting pressure to use illicit drugs

Although most young people do not use illicit drugs, you may find yourself in a situation where illicit drugs, alcohol or vapes are present or being offered around. You may even feel pressured to try something.

Thinking in advance about how you feel towards issues such as alcohol, drugs or sexual activity can help you to better respond to pressure from others. This is known as setting your personal boundaries. Being well informed and understanding the risks will help you to know where you stand. This will make it easier to be true to yourself. Recognising when and why you are being pressured and standing up to it can still be difficult. Thinking about ways to respond in advance can help you to be assertive and clear about your values, beliefs and personal boundaries.

TABLE 3.4 Ways to respond to peer pressure about illicit drugs

What pressure looks like	Ways to say 'no' to drugs
'Just try it once…'	'Thanks for the offer but it's a no from me.'
'Come on, give it a go. You'll love it.'	'It's not really my thing. That stuff is bad for you.'
'Trust me. It's fine. Just give it a go.'	'No, thanks. That doesn't interest me.'
'It's so amazing. You have to try it.'	'I'm not really into that, but you do you.'
'Nothing bad will happening. I'll look after you.'	'I have a game tomorrow and I don't want to feel bad.'
'If you were my friend, you would do this with me.'	'I have a family thing tomorrow and I don't want to be hungover/coming down.'

DISCUSS

You are planning on attending a party on the weekend. Your parents are concerned about drinking and drugs.

a. Outline why your parents would be concerned.

b. Explain the possible implications of drugs and alcohol being at the party for you and others. What compromise could you come to with your parents to make sure you attend the party safely. Is there a safe compromise?

3.3.5 Strategies to reduce risk

If you're planning on attending a gathering, party or night out with friends, preparing and planning ahead helps you to reduce the risks and ensures you and your friends are as safe as possible.

Planning a safe night out

Some strategies for planning a safe night out include the following:

- Find out as much information about the gathering or party as possible, including:
  - where the party is being held
  - the address of the venue (and have this recorded in your phone)
  - who will be attending and whether these are trusted and known people
  - how many people will be there
  - whether adult supervision will be present.
- Plan how you are getting to the party and how you will get home.
- Make sure your mobile phone has a fully charged battery before heading out.
- Make sure you have a reliable method of payment for unexpected situations, such as if you need to catch a taxi home.

FIGURE 3.23 Plan your strategies for a safe night out before you get to the party or gathering.

- Attend the party with reliable and trusted friends and ensure you look out for each other. Make sure your friends know what you are doing, where you are going and your personal boundaries. You also need to know what you expect of each other in an emergency.
- Before attending, make sure you are well hydrated and have eaten a substantial meal to fill your stomach.
- Revisit your personal boundaries and set your limitations for the party.

Useful apps for planning a safe night out

Mobile phone apps can be useful tools for adolescents. Particular apps can help protect your personal safety and reduce harm during a night out.

- *Health App:* The Apple iPhone has a Health app that includes a 'Medical ID' section. Adolescents can store their In Case of Emergency (ICE) contact details here (e.g. parent or guardian phone numbers). This personal information can then be accessed through the main screen even if the mobile phone is locked.
- *Emergency +:* This is a national app developed by Australia's emergency services and their government industry partners to help people call the right number at the right time, anywhere in Australia. Using the Emergency + app will help you to call triple zero (000) quickly and to accurately communicate your location to the emergency call-taker.

FIGURE 3.24 Consider taking advantage of safety apps and features on your mobile phone.

Planning for a safe party

If you're planning a party at your house or a hired location, you need to think about safety. The following strategies will help you to reduce harm and make the party safer.

- Allow guests into the party by written invitation only.
- Do not create open invitations on the internet using social networking sites.
- Hold the party in your own backyard or hire a local hall.
- Provide activities to keep guests occupied.
- Arrange for a bouncer to be at the door.
- Set aside some 'no-go' areas.
- Let the police know you are having a party.
- Make sure your parents or guardian are at home or at the location.
- Invite older adults to help serve food (e.g. uncles, aunts and grandparents).
- Supply water and soft drinks.
- Do not allow drinks to be brought into the venue.
- Supply plenty of food.
- Discuss your expectations with your parents or guardian before you send out the invitations. Listen to their expectations as well. Come to an agreement.
- Negotiate the number of guests with your parents or guardian.
- Let your friends know both verbally and on the written invitation that no alcohol or other drugs will be allowed at the party.
- Decide upon strict start and finish times and include them on the invitation.
- Make sure you have received all the replies to your invitations before the party.

FIGURE 3.25 Involving parents in party plans can help with risk management.

FIGURE 3.26 Having fun activities to occupy people at parties is a good safety measure.

Parties have the potential to get out of hand. Like any other activity involving risk, careful planning before the party is extremely important to minimise potential harm to individuals and personal property.

Actions to assist friends under the influence of alcohol or other drugs

Helping a drunk friend can be overwhelming, difficult and dangerous. When someone drinks too much alcohol or consumes other drugs, they are at risk of an overdose. Signs of an overdose include:

- slurred speech
- vomiting
- unconsciousness.

When helping a friend under the influence of alcohol or other drugs, the most important thing is the health and safety of your friend and yourself. Your role is to be a friend, not a medical expert. If they are unconscious, follow the first aid procedures outlined in lesson 3.4.

Looking after a drunk and vomiting friend

You can take some simple actions to look after a drunk friend who is vomiting.

- Don't leave them alone. Always monitor them.
- Sit them upright on the floor against a wall. Do NOT lay them down. Do NOT sit them on a chair in case they fall off.

- Give them a bucket to vomit into. Avoid resting them against the toilet because they could lose control of their head and hit their face on the toilet bowl, causing injury.
- Don't force them to drink water. Hand them a plastic water bottle. If they can hold it, encourage them to take small sips, NOT gulps, and/or regularly rinse their mouth out.
- Reassure them that things will get better, and the vomiting won't last forever. It will just take time.
- Get them home safely.
- If in doubt, call '000'.

FIGURE 3.27 You can help a friend if they drink too much.

Calling triple zero

If you are ever in doubt about the health and safety of your friend, don't hesitate or be afraid to call 000 (or 112 from a mobile phone even if you don't have a network connection). If a friend needs medical assistance, make sure you ask for help as quickly as possible.

FIGURE 3.28 Call 000 in an emergency.

It is important to know that if an adolescent calls '000' seeking medical attention for a drunk friend, ambulance officers and paramedics do not routinely call or inform parents or the police. If a person is under the age of 16 and is taken to the emergency department (ED) in need of treatment, the hospital will usually inform the patient's next-of-kin, which for most adolescents is their parents or guardian.

In addition, if a friend needs an ambulance due to intoxication, it is classified as a medical emergency. The paramedic's purpose and responsibilities are to help anyone in need and keep them safe — not to punish them. The police will not be called to the scene unless the situation is dangerous or stopping the paramedics from undertaking their job.

If drugs other than alcohol are involved, you can help medical officers when they arrive by finding out:

- the type of drug taken
- how it was taken
- when it was taken
- how much was taken
- whether the person has any past experience with the drug
- whether any other drugs (including alcohol) were taken
- which other people are likely to be affected.

If you can find the packaging the drug came in, keep it to give to the paramedic or doctor. It provides useful information that could help with treating your friend.

3.3 ACTIVITIES

1 Why?

In small groups, discuss the reasons teenagers feel the need to drink alcohol. Discuss how stereotypes and peer expectations play a role.

2 Risky regrets

Make a list of things people may do under the influence of alcohol that they wouldn't normally do or may regret doing.

3 Safety sort

Sort these safety strategies into two categories: 'vitally important' and 'not as important'.

- Always move about with a friend or friends.
- Carry your mobile phone.
- Let your parents know what time you will be home.
- Organise to have your parents pick you up at a specific time.
- Don't accept open cans or bottles from strangers.
- Don't drink the punch.
- Don't put your drink down.
- Let your parents know where you are going.
- Leave the party early if you feel uncomfortable or ill at ease.
- Always trust your 'gut feeling' and act on it.
- Look after your friends and leave when they leave.
- Ask who is going to supervise the party before you accept the invitation.
- Ask whether there will be alcohol at the party and make up your own mind about whether you should go or not.

4 Safe party tips

weblink

Design a poster that gives tips on how to conduct a safe party. Use the information in this lesson and the **Partying safely** weblink in your Online Resources for ideas.

5 House party

weblink

a. Discuss problems with holding parties at your own house.
b. Use the **Police partying** weblink in your Online Resources to visit the Victorian police website and see how they can assist to make house parties safer.

6 Create the questions

weblink

a. Use the **Anxiety after drinking and what you can do about it** weblink in your Online Resources to read an article about alcohol.
b. Create five questions based on the article for your partner to answer.

7 Evaluate campaigns

weblink

a. Use the **Hello Sunday morning** weblink in your Online Resources to view a campaign related to drinking.
b. Discuss the campaign's message and evaluate how effective it is at addressing the problem.

8 What would you do?

In small groups, think about each of the following scenarios. Discuss realistic responses to each situation and outline what you think you would do in each situation.

a. *You are having a sleepover with a group of people at your friend's house and he/she suggests you play drinking games for a bit of fun. The parents are home, but they have already gone to bed.*
b. *You really like a boy/girl at a party but you don't have the courage to approach them. A friend suggests that you have a few drinks to give you a hand with the initial 'hello'.*
c. *Your parents have gone out for the night and your friend is encouraging you to have a house party while they are out.*

d. *You need a lift home from a party but you don't want to get in a car with anyone who has been drinking. Your friend, who you arranged to go home with, has ended up having a few drinks and is insisting they will drive you home.*

e. *You are having a birthday party at your house, organised safely and cautiously with the help of your parents. You have given out written invitations to 30 friends. You are being encouraged by your mates at school to put the invitation on Facebook to invite some 'cool' people.*

f. *A boy you have known for a while has offered you a lift home. He has not been drinking and is responsible. On the way home, he offers you a drink in the car.*

9 Less smoking

In groups, brainstorm reasons the percentage of young people smoking has decreased over the past years.

10 Debate

As a class, debate the topic 'Smoking should be illegal'.

11 Strategies for prevention

a. How would you respond if you were being pressured to take illicit drugs? Discuss in a small group a range of possible strategies that you could use to respond to this situation.

b. If you had a friend or group of friends who you felt were putting their health and wellbeing at risk by using illicit drugs, what could you do? Discuss this with a small group, and then report to the class.

12 Illicit drugs

Create a pamphlet warning of the dangers of an illicit drug of your choice. In the pamphlet, give advice to minimise harm. Use the information in this lesson and other sources to help you.

13 Just say 'no'

In groups, role-play ways of saying 'no' to using drugs.

14 Effective campaign

weblink

a. Use the **Quitnow** weblink in your Online Resources to watch anti-smoking campaigns from Quit.

b. Comment on how effective they are.

3.3 Exercise

3.3 Exercise

Select your pathway

LEVEL 1	LEVEL 2	LEVEL 3
1, 2, 3, 5	4, 6, 8	7, 9

These questions are even better in jacPLUS!

- Receive immediate feedback
- Access sample responses
- Track results and progress

Find all this and MORE in jacPLUS

Check your understanding

1. MC In Australia risky drinking is defined as drinking more than _____ standard drinks at any one time.

A. 2
B. 4
C. 6
D. 8

2. MC Which two of the following are short-term effects of alcohol on the body?
   - A. Increased concentration
   - B. Decreased reaction time
   - C. More confidence
   - D. Increased coordination
3. MC Which one of the following allows you to sober up?
   - A. Time
   - B. Coffee
   - C. Cold showers
   - D. Fresh air
4. MC Which two of the following are long-term effects to the face, mouth, nose and throat from smoking?
   - A. Cancer
   - B. Increased risk of osteoporosis
   - C. Stomach ulcers
   - D. Tooth decay and bad breath
5. Tobacco causes more illness and deaths than any other drug. True or false?

Apply your understanding

6. **List** the short-term impacts on the body from consuming alcohol.
7. **Create** a bank of responses you could use to say 'no' if you were offered drugs or a vape.
8. **Outline** five important tips for planning a safe night out.
9. A friend is severally intoxicated. They have lost coordination, are slurring their words and are vomiting. **Discuss** how you would look after a friend in this situation. **Justify** if and when you would call an ambulance for your friend.

LESSON
3.4 Responding to emergencies — first aid and CPR

LEARNING INTENTION

- Plan and practise how to respond to emergencies, including using first aid skills.

3.4.1 Providing help

Have you ever had to give first aid to a friend or family member? Would you know what to do in an emergency? Do you know how to call for an ambulance? In this lesson, you will learn how to keep calm and provide help in an emergency situation.

ENGAGE

I was heading to the skate park after school along Bayview Street. It seemed like it was going to be a normal afternoon. I guess it would have been about 3.45 pm because I had only been out of school for a little while. I expected the skate park to be busy with the after-school crowd. I was listening to music on my phone as I turned left down Beach Road and then walked across Queens Park to meet up with my mate, Sam. I was startled out of my daydream by Sam calling out from the skate park, 'Hey, watch this! I just nailed that move I've been practising for ages!' He landed the rail slide and looked at me with a huge grin. Unfortunately, he was not watching where he was going and I heard a loud thud as he collided with another skater named Jorge. Sam was knocked off his skateboard, and he appeared to hit his head hard. He lay motionless on the cement. Jorge looked dizzy. He was holding his left forearm and bleeding from a cut above his eye. Another boy stood over Sam, yelling and cursing about him not watching where he was going. Other kids were on their skateboards, flying past dangerously close to where Sam lay. Sam's younger brother, Liam, appeared at Sam's side and tried to get him up. Suddenly, Liam yelled at me, 'Call an ambulance! I don't think he's breathing — do something!'

FIGURE 3.29 How would you react?

Imagine you are in this situation.

1. What dangers exist for Sam, for yourself and Liam, and for other bystanders? Create a three-column table with the headings 'dangers for yourself and Liam', 'dangers for other bystanders' and 'dangers for Sam'. List the dangers, and in another colour write some suggestions for how to provide help and manage the dangers.
2. Sam is not responding to your voice or touch. What would you do next?
3. Explain what information you or Liam would have to give to the emergency services operator over the phone.
4. Explain what you could do to get an ambulance to the scene as quickly as possible.
5. If Liam made the 000 call, how would you provide further assistance to Sam?

FIGURE 3.30 It is everybody's responsibility to have a sound knowledge of both safety procedures and first aid.

Resources

Video eLesson Safety, first aid and sports injury management (eles-2337)

Digital document Predicting danger (doc-14727)

3.4.2 What is first aid?

First aid is the initial or first help that is given to an injured or ill person. It should not be confused with medical aid, which is treatment by a doctor or other qualified person, such as a nurse or ambulance officer.

first aid the initial or first help that is given to an injured or ill person. It is administered until medical help arrives.

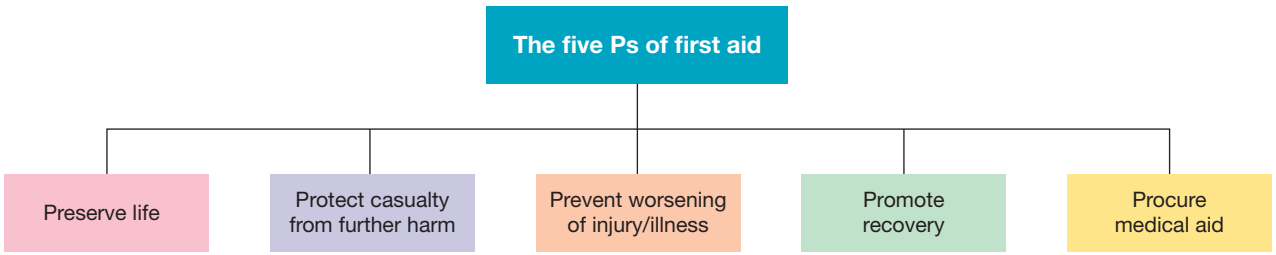
First aid begins when a person arrives at the scene of an accident. It continues until the casualty recovers or medical aid arrives.

The aim of first aid is to:

- preserve life
- protect the casualty from further harm/protect the unconscious
- prevent injury or illness from becoming worse
- promote recovery
- procure medical aid.

These are known as the five Ps.

FIGURE 3.31 The five Ps of first aid



Resources

Interactivity Five Ps of safety (int-5499)

How to call for help in an emergency

Triple Zero provides the following instructions for calling for help in an emergency.

1. Dial 000. Triple zero (000) is Australia's primary telephone number to call for help (ambulance, police or the fire service) in life-threatening or time-critical emergency situations.
2. When the emergency operator answers, state clearly the service you need — police, ambulance or fire brigade.
3. Stay calm and speak clearly. Be ready to give the following information and answer any questions.
   - Location of the emergency (including nearby landmarks and closest intersections)
   - The telephone number from which the call is being made
   - What has happened/what the emergency is
   - How many people require assistance
   - Condition of the casualty
   - What assistance is being given
   - Any other information requested

   Stay on the line! Only hang up when the emergency services operator tells you to.
4. Ask someone to go where they can direct the emergency service vehicle to the correct place.

FIGURE 3.32 When possible, the person with the best first aid knowledge should stay with the casualty while someone else calls for emergency assistance.

FIGURE 3.33 When calling an emergency service, make sure you get the details right.

Using other emergency numbers

Of the two secondary emergency numbers, 112 is available from all mobile phones. You can call 112 even if you don't have a network connection.

If you have a hearing or speech impairment and your life or property is in danger, you can contact the police, fire service or ambulance on 106. This option allows you to use the text-based emergency services network on a teletypewriter.

FIGURE 3.34 Two secondary emergency call service numbers are also available — 112 and 106.

DID YOU KNOW?

Dialling 112 over 000 provides no advantage. Calls to 112 do not go to the head of the queue for emergency services. It is also not true that 112 is the only number that will work on a mobile phone.

3.4.3 DRSABCD action plan — saving a life

In an emergency — that is, when someone's life is at risk — it is important to have a plan of action. The plan of action that is most widely used is called DRSABCD. This is used to assess whether a patient has any life-threatening conditions and if first aid is required. The acronym DRSABCD stands for danger, response, send for help, airway, breathing, CPR or cardiopulmonary resuscitation and defibrillation.

To administer first aid successfully, you must have a plan of action that will work for all types of situations, from a serious car accident to a sprained ankle. In an emergency situation, your plan of action needs a set of priorities. This allows you to address the most life-threatening injuries first. For example, if a person has a broken bone but they are also not breathing, you must attend to the breathing first. A person does not usually die from a broken bone.

The following subsections explain each step of the DRSABCD action plan.

DISCUSS

weblink

a. In small groups, access the **DRSABCD** and **Man saved** weblinks in your Online Resources.
b. Discuss movies you have seen in which characters have dealt with an emergency situation.
c. Answer the following questions:
   i. What were some of the techniques used to help the casualty?
   ii. Did any actions appear unrealistic or seem to negatively affect the health of the casualty?

Danger

When you arrive at the scene of an emergency, it is important to check for danger to yourself, bystanders and the injured person. Potentially dangerous situations can arise from obstacles such as broken glass, smoke and fire.

Response

The next step is to assess if the casualty is conscious. Do this by gently squeezing the shoulder of the casualty and asking COWS questions in a loud voice. The COWS acronym stands for the questions and requests:

- Can you hear me?
- Open your eyes if you can hear me?
- What's your name?
- Squeeze my hand if you can hear me.

You can remember these questions and responses using the COWS acronym. This acronym comes from the first letter of each question and request.

For the last request, try both of the casualty's hands. A stroke can stop a person from being able to use one side of the body, but they may still be able to squeeze with the other hand. If the casualty responds, check for other injuries and control serious bleeding. If they do not respond, proceed with SABCD.

Send for help

Dial 000 or 112 to request help. Remember, dial 000 from a fixed landline and dial either 000 or 112 if using a mobile phone. Remember too, to stay calm and stay on the line!

If you have a hearing or speech impairment, you can contact the police, fire service or ambulance on 106 directly through a teletypewriter or text phone (TTY). When the emergency operator answers, state clearly which service you need and give the information as listed in lesson 3.4.2.

Airway

In some cases, simply opening the **airway** will be enough to improve the casualty's level of consciousness. To do this, tilt the head backwards and lift the chin. This is done while the casualty is lying on their back.

airway the passage that leads from the mouth, nose and throat to the windpipe

signs of life consciousness, responsiveness, normal breathing, signs of movement

recovery position the body position a casualty is placed in to ensure the airway is kept open and clear of obstructions

unconscious a condition in which a person is unaware of or does not respond to external influences

Breathing

Once the casualty's airway is clear, you need to look, listen and feel for signs of breathing. This check for breathing should take 5 to 10 seconds at the most.

- Look for **signs of life** — is the lower chest or abdomen rising and falling?
- Listen for the sound of air leaving the nose and mouth, such as wheezing or coughing.
- Feel on the side of the rib cage for the rise and fall of the chest. You can also feel for air leaving the mouth and nose by placing your cheek close to the casualty's mouth and nose.

If the casualty is breathing but not responding, an ambulance must be called immediately (dial 000). Continue to monitor the casualty's breathing and responses.

If the casualty is not breathing normally, the rescuer can start cardiopulmonary resuscitation (CPR).

Recovery position

To place a person in the **recovery position**:

- Kneel beside the injured person and place the arm furthest from you straight out.
- Place the closest arm across their chest and bend the closest knee up as shown in figure 3.35.
- Support the person's head and use their hip and shoulders to roll them away from you onto their side, as shown in figure 3.36.
- Take care to handle the **unconscious** person gently so that their spine is not twisted or moved forward.

FIGURE 3.35 Preparing a person for the recovery position

It is possible for the airway to be blocked by objects such as the tongue, vomit, saliva, false or broken teeth, or chewing gum. The easiest method of clearing the airway is to open the mouth and turn the head slightly downwards to allow any obvious foreign material to drain. If necessary use your fingers to remove any foreign matter.

FIGURE 3.36 Roll the person away from you into the recovery position.

FIGURE 3.37 Checking for breathing

on Resources

Interactivity Rescue breathing (int-5743)

Cardiopulmonary resuscitation (CPR)

If the casualty is unconscious, shows no signs of life and is not breathing normally, **cardiopulmonary resuscitation (CPR)** must be started immediately. CPR is a combination of 30 chest compressions and two **rescue breaths**. Chest compressions helps the heart continue pumping and circulating oxygenated blood around the body, and rescue breaths provide the oxygen.

cardiopulmonary resuscitation (CPR) an emergency technique that combines rescue breaths with external chest compressions at a ratio of 30:2 at 100–120 compressions per minute; used when a casualty is unconscious and is not breathing

rescue breaths given to a casualty who is not breathing; the breath will take one second to deliver and will make the casualty's chest rise

Chest compressions

To perform a chest compression, follow these steps:

1. Kneel beside the casualty.
2. Locate the sternum (at the centre of the chest). You can do this by tracing a line inwards from the armpits to the centre of the chest. Place the heel of one hand there. Your fingers should be parallel to the ribs.
3. Place the heel of the other hand on top of the first and either interlock the fingers or hold the wrist so that the arms work as one (see figure 3.38). The hands need to be positioned on the lower half of the sternum, approximately across from the armpits.
4. Your shoulders should be directly above the patient's chest. This allows you to use your body weight to help with the compressions. Keep your arms straight. Providing chest compressions can be exhausting, so it is important to use your weight, not just your arms.
5. The depth of the compressions should be about one-third of the depth of the chest for all age groups.

FIGURE 3.38 When performing a chest compression, your hands need to be positioned on the lower half of the sternum, which can be located by tracing a line inwards from the armpits.

Rescue breaths

To perform a rescue breath:

- Kneel beside the casualty and tilt their head back.
- Place your thumb across their chin with your index finger underneath and then lift the chin.
- Pinch the casualty's nostrils together with the thumb and index finger of your free hand.
- Place your mouth over the person's mouth, making an airtight seal.
- Take a normal breath and breathe (don't blow) into the casualty's mouth for one second.
- Watch for the chest to rise.

It is important for the rescuer to observe the chest following the first breath. If the chest fails to rise on the first breath, the head tilt and chin lift need to be checked to make sure there is no blockage to the airway. This would stop air from reaching the lungs. If a chest rise is not observed following the second rescue breath, chest compressions need to begin. Rescue breaths should be delivered if you are willing and able to perform them. Some circumstances, such as facial injuries to the patient or the presence of blood, may stop you from delivering rescue breaths. In these cases, giving compression-only CPR is okay.

Defibrillation

Defibrillation is the process of attempting to restore a casualty's normal heart rhythm when they have suffered a sudden **cardiac arrest**. A cardiac arrest is a disturbance of the electrical activity in the muscles of the heart's larger pumping chambers. With the use of a defibrillator an electric shock can be delivered to hopefully restore the heart's normal rhythm.

The most common type of defibrillator is an **automated external defibrillator (AED)**. An AED delivers an electrical shock to the heart after it analyses that the heart's rhythm is not normal. The defibrillator determines whether a shock is needed to the heart via the adhesive electrode pads attached to the patient's chest. The shock interrupts the chaotic rhythm of the heart and gives the heart the chance to return to its normal rhythm.

defibrillation the application of electrical therapy that allows the heart to re-establish an effective rhythm

cardiac arrest disturbance of the normal electrical activity in the muscles of the heart's larger pumping chambers resulting in ineffective circulation

automated external defibrillator (AED) an accurate and easy-to-use computerised medical device that analyses a person's heart rhythm and recognises a rhythm that requires a shock. It uses voice and visual prompts to guide the first aider.

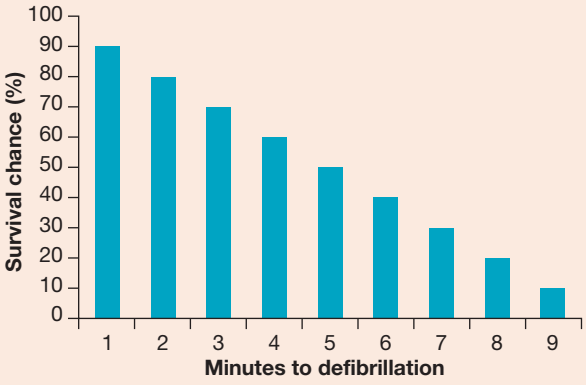
AEDs can be found in many public places such as airports, railway stations, gyms, shopping centres and sports grounds because a sudden cardiac arrest can happen to anybody, anytime, anywhere. An AED can be used by anyone. It has step-by-step voice and visual guides to guide the first aider. If there is public access to an AED, it should be fetched and the pads applied immediately while someone continues CPR.

FIGURE 3.39 An automated external defibrillator (AED) **a.** in a shopping centre and **b.** on a demonstration model for training

DID YOU KNOW?

Early access to an AED saves lives. Statistics show that up to 20 000 lives per year in Australia could be saved by the immediate availability of an AED for the person in cardiac arrest. For every minute that a person in cardiac arrest goes without being successfully treated by defibrillation, their chance of survival decreases by 10 per cent.

FIGURE 3.40 The chances of survival from cardiac arrest depending on the time taken to use an AED.



3.4.4 Applying the DRSABCD action plan to a hypothetical accident

To practise applying the DRSABCD action plan, consider the following scenario.

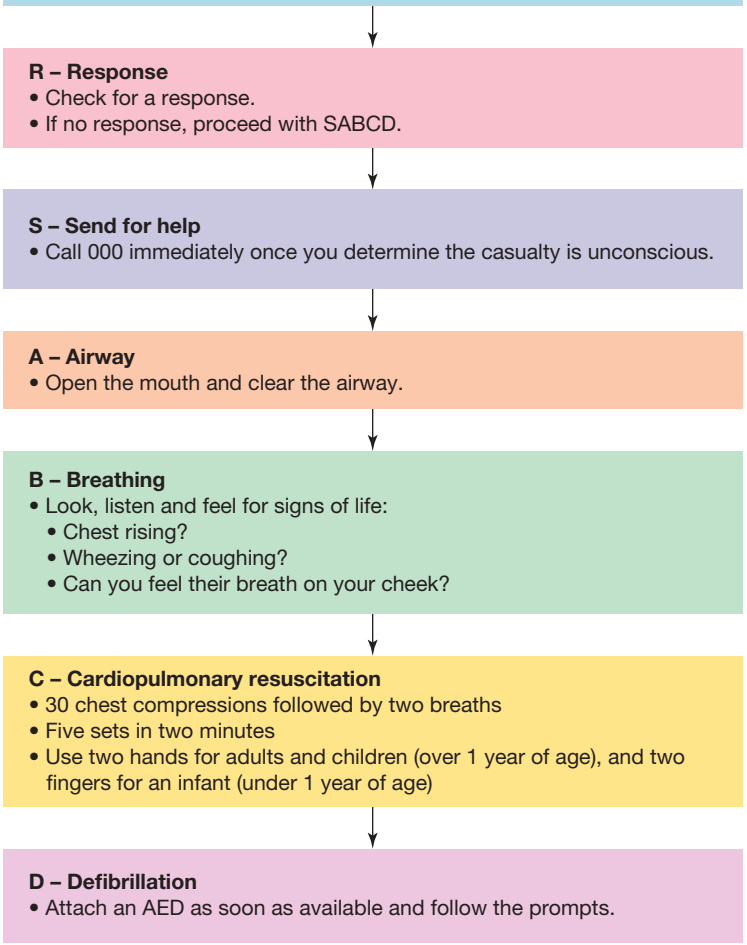
doc-14729

You are walking home from school when you hear the screech of tyres and a loud bang coming from around the corner. Your heart skips a beat and then starts thumping in your chest like a drum. You quickly rush around the corner and you see a horrific sight. A pedestrian is lying still on the road. His shopping is strewn over the road

beside him. A car has veered across the road and driven up onto the kerb. The driver is getting out and appears dazed but uninjured.

Let's see how the DRSABCD action plan would be used in this situation.

FIGURE 3.41 DRSABCD action plan



on Resources

Interactivity Steps of the DRSABCD action plan (int-6241)

Danger

First check for dangers to yourself, bystanders and the casualties. Dangers in this scenario might include:

- oncoming traffic
- fuel spills
- blood
- broken glass
- twisted metal and debris.

Strategies for removing these dangers include having bystanders redirect traffic from a safe distance, and using a stick to move sharp or hot objects. When the dangers have been removed as much as possible, you can move on to 'response'. Only move a casualty if a danger *cannot* be removed, such as if the vehicle is on fire.

Response

Which casualty is likely to be more seriously injured? In this scenario, the pedestrian appears to be the most seriously injured. You should first establish whether the casualty is conscious or not. You should approach the pedestrian and loudly say things such as, 'Can you hear me?', 'Open your eyes', 'What's your name?' and 'Squeeze my hands'. If the casualty responds, check for bleeding and other injuries such as broken bones while a bystander calls for an ambulance. Unfortunately, in this case, the casualty has not responded. What do you do now?

Send for help

While you check for bleeding or other injuries, ask a bystander to call 000 (you can do this step yourself if alone).

When the person answering the 000 call asks, 'Do you want police, fire or ambulance?', the bystander will need to say 'ambulance'. They will need to stay calm, not shout, and speak slowly and clearly to give the following information.

- Location of the emergency (including nearby landmarks and closest street intersections)
- The telephone number from which the call is being made
- What has happened — that there has been a motor vehicle accident between a car and a pedestrian and other bystanders are redirecting traffic
- How many people require assistance — two casualties (give sex and estimated age also if possible)
- Condition of the casualty — the car driver is conscious but dazed and appears uninjured; the pedestrian is not responding
- What assistance is being given — first aid is being provided by going through DRSABCD and starting CPR
- Any other information requested.

Remember stay on the line. Never hang up before the emergency services operator hangs up.

If a bystander has made the call while you are providing assistance to the casualty (or casualties), ask them to come back and give you an estimated time of arrival of the ambulance. This way, you know the 000 call has been made and you have some idea of how long you will need to keep providing first aid until more qualified medical assistance arrives. Also ask someone to go where they can direct the emergency service vehicle to the correct location.

Airway

Because the pedestrian is unconscious, you must check that their airway (the passage that leads from the mouth, nose and throat to the windpipe) is clear. If the airway is blocked, oxygen cannot reach the lungs. If oxygen is blocked for three to four minutes, the person will start to die. Some common causes of a blocked airway are:

- the tongue
- vomit
- broken teeth
- chewing gum.

FIGURE 3.42 Rolling a casualty into the recovery position to remove foreign substances

on Resources

Interactivity Recovery position (int-6012)

To assess airway and breathing, leave the casualty in the position in which they have been found. If fluid or foreign matter is obstructing the airway, roll the casualty onto their side. Open the mouth and turn the head slightly downwards to allow any obvious foreign matter to drain.

Clearing the airway

Complete the following to clear the airway.

- Turn the casualty's head to the side and slightly downwards. Use your fingers to remove any foreign matter from the mouth.

Once the airway is clear, the casualty can be positioned on their back.

FIGURE 3.43 Clearing the airway

Opening the airway

Complete the following to open the airway. The process is the same whether the person is on their back or in the recovery position.

1. Open the airway by lifting the chin to tilt the head (not the neck) back.
2. Lift the jaw forward and open the casualty's mouth slightly.

Breathing

You have done a good job clearing the pedestrian's airway; however, he still appears to not be breathing. You are not a doctor, so how do you check whether he is breathing? You look, listen and feel for any signs of breathing by:

- looking at the chest to see whether it is rising and falling
- listening for any sounds of breathing by placing your cheek alongside the casualty's mouth
- feeling with your hand on the ribs and diaphragm for the rise and fall of the chest, and feeling for breath on your cheek.

If the pedestrian casualty were breathing, you would keep him in the recovery position and keep his head tilted slightly backward and face slightly downward. You would wait for an ambulance while monitoring vital signs and checking for other injuries. However, the pedestrian is not breathing, so you must not waste time. Start CPR–30:2.

To perform the rescue breaths on the pedestrian:

1. Position him on his back on a firm, flat surface.
2. Kneel beside his chest.
3. Tilt his head back by placing the palm of your hand on his forehead.
4. Pinch his nostrils with your fingers or close off the nostrils with your cheek.
5. Place your mouth firmly over his mouth, making an airtight seal (see figure 3.44).
6. Breathe into his mouth to give two rescue breaths, ensuring his chest gently rises with each breath.
7. Remove your mouth and check whether his chest is rising after each inflation. Listen for air escaping from his mouth and nose by turning your head so that your ear is close to his mouth. At the same time, observe his stomach to make sure that it has not become swollen with air (which would mean you are breathing too hard, the airway is blocked or you have not tilted the pedestrian's head back enough).
8. If you still see no signs of life, begin chest compressions.

FIGURE 3.44 The mouth-to-mouth method. Sealing the nose with the fingers, give two rescue breaths.

Unfortunately, the pedestrian still does not appear to be breathing. His airway is clear, and his stomach is not becoming swollen during rescue breaths. It is time to do compressions.

Compressions

To perform the chest compressions.

1. Visualise the centre of the pedestrian's chest. Place the heel of one hand on the centre of the chest (the bottom of the sternum). You can find the right place by tracing a straight line from the armpits to the centre of the chest.
2. Place the heel of the other hand on top of the first. Keep the fingers off the ribs. Interlace the fingers of both hands to assist with holding the lower fingers off the chest wall.
3. Ensure that your arms are straight and your shoulders are above the pedestrian's chest.
4. Bend forward at the hips so that you depress the sternum rhythmically and vertically about one-third of the depth of the chest (roughly 4–5 cm).
5. Release the pressure, then repeat.
6. Perform 30 compressions.
7. Pause after each set of 30 compressions to give two more rescue breaths, and then repeat. You should be performing CPR at a rate of 30 compressions for every two breaths.
8. Aim to do this five times in two minutes (100–120 compressions per minute).
9. *Do not stop*. Continue doing 30 compressions and then two breaths until one of the following happens:
   - The pedestrian starts breathing on his own.
   - Someone more qualified, such as a paramedic, arrives to take over.
   - You are physically unable to continue.
   - An AED is applied. Follow the AED prompts and restart CPR if the AED instructions tell you to.

Rescue breathing

If you decide to deliver rescue breaths it can be performed using two main methods:

- mouth-to-mouth
- mouth-to-nose.

Both methods are equally effective, but the mouth-to-mouth method is more commonly used.

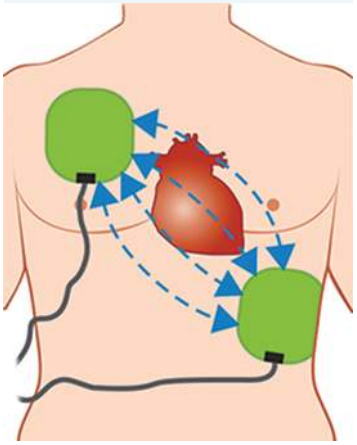
The mouth-to-nose method is usually used when a trauma has occurred to the mouth or jaw, or you are giving rescue breaths in deep water. The mouth-to-nose technique can be done in the same way as mouth-to-mouth, except you close the person's mouth and breathe into their nose.

Defibrillation

After two minutes of CPR, a bystander approaches you with an AED. The pedestrian is still not breathing. You need to attach the AED as soon as possible, but you must continue CPR until the AED is ready.

Attach the AED as shown in figure 3.45 and then follow the prompts given by the device. Shortly afterwards, the pedestrian's heart re-establishes a regular rhythm and he starts breathing again. You continue to monitor his vital signs until the ambulance arrives.

FIGURE 3.45 Position and placement of an automated external defibrillator (AED) using adhesive pads



DISCUSS

Consider the following scenario.

You are one of the first on the scene of an accident where someone is in need of CPR. You can see a significant amount of blood and you don't have any gloves.

a. What are your options in this scenario. What are the implications of these options?
b. What do you decide to do and why?

Compare your decision with a peer or the class. Did you differ in your decisions? If so, why?

3.4.5 Variations of CPR

Several types of CPR are possible. Applying the correct method depending on the situation is important. The method of giving chest compressions and rescue breaths is different for adults and children (1–8 years) compared to infants (less than 1 year).

Two operators

Use the following procedure if two people are providing first aid.

- Each person should kneel on opposite sides of the casualty's body.
- The more experienced person should control the head and perform the rescue breaths.
- Give 30 compressions and two rescue breaths, five times in two minutes (a rate of 100 compressions per minute).
- The person performing the compressions should call out the numbers 1 to 30 as they compress the chest. This helps the other person to time the breaths to limit the amount of interruption to the compressions.
- Change who is giving the chest compressions every two minutes. Otherwise, you will get tired and not be able to do the compressions properly.

FIGURE 3.46 CPR with two operators

CPR for infants

For infants below the age of 12 months, use the following procedure.

- Do not apply the head tilt for infants. The head remains in the neutral or horizontal position.
- Apply compressions with the tips of your index and middle fingers over the middle of the chest.
- Compress to one-third of the depth of the chest (about 1.5 cm) using two fingers.
- Cover the child's nose and mouth with your mouth and breathe with a gentle puff — enough pressure to cause the chest to rise gently.
- Use the same breath to compression ratio as for adults and children. That is, two breaths for every 30 compressions at a rate of 100 compressions per minute.

FIGURE 3.47 CPR for infants

DID YOU KNOW?

Even if you do everything right when giving first aid, it may not be possible to revive some casualties. Revival can sometimes depend on factors outside your control.

DISCUSS

In small groups, discuss whether all people should have to get CPR training.

3.4.6 Recognising when to administer first aid

We need to be able to recognise common problems, health conditions and injuries, so that we can provide the right first aid.

First aid treatments commonly relate to:

- bleeding
- asthma
- anaphylaxis
- soft-tissue injuries.

This section will look at these issues and how to manage them.

Bleeding

Adults have approximately 6 litres of blood in their body, children have about 2.5 litres and babies about 750 mL. Severe bleeding must be controlled, because losing a large quantity of blood, such as more than one litre in an adult, can result in serious damage or even death.

Management of external bleeding

To reduce the risk of **disease transmission** when controlling bleeding, you must form an effective barrier (e.g. by using protective gloves) between your skin and the casualty's blood. Immediately after providing care, wash your hands thoroughly with soap and water. Do not eat, drink or touch your mouth, nose or eyes until you have washed your hands.

disease transmission passing diseases from one person to another; includes infections and parasitic diseases

Bleeding may be controlled by using pressure.

1. Lay the casualty down.
2. Apply firm, direct and continuous pressure on the bleeding wound, initially with your hands until the bleeding stops. By pressing firmly on the wound, the blood vessels beneath the skin are flattened and the blood flow is reduced. This gives time for blood clots to start forming, sealing off damaged blood vessels.
3. Apply a pad or dressing in or directly over the wound. Secure the pad by bandaging firmly.

Once bleeding has been controlled and you are confident that the casualty's condition is not life-threatening, you can commence a secondary assessment of the casualty. This involves a head-to-toe check of the patient. Check for bleeding and other injuries, noting tenderness, swelling wound or deformity in the following order:

1. head, face and neck
2. shoulders, arms and hands
3. chest
4. abdomen
5. pelvis and buttocks
6. legs, ankles and feet.

Once you have completed your management and assessment, wait with the casualty for medical help to arrive. You should remain at the scene so that you can provide information relevant to the accident.

Asthma

asthma medical condition characterised by bronchial spasms that limit the flow of air to the lungs, causing difficulty breathing

Asthma causes breathing difficulty because of sudden or progressive narrowing of the airways caused by spasms in the muscles of the bronchial walls (the tubes in the lungs responsible for transporting oxygen), swelling and inflammation of the lining of the airways, and excessive production of mucus.

FIGURE 3.48 Many people manage their asthma using a medicated inhaler. Your asthma management plan will include which medication reduces your symptoms.

Major factors that can bring on asthma attacks are:

- exposure to house dust
- pollens
- animal fur and moulds
- respiratory infections
- exercise
- cold
- anxiety or emotional stress
- cigarette smoke.

Management of an asthma attack

If you suffer from asthma, you can work out a suitable asthma management plan with your doctor. Follow the **Breathe well, live well with asthma** weblink in your Online Resources for more information.

weblink

Many people with asthma will have an asthma management plan. However, if this is not available, you can use the following procedure to provide first aid for someone experiencing an asthma attack.

1. Sit the patient down and reassure them. Do not leave them alone.
2. Without delay, shake the reliever puffer (brands include Ventolin, Airomir, Asmol or Epaq) and give four separate puffs through a spacer. (The technique is one puff from the inhaler, and then the patient takes four breaths from the spacer. Repeat until four puffs have been given.)
3. Wait four minutes. If no improvement is seen, give another four separate puffs, as in step 2.
4. Wait four minutes. If still no improvement, call an ambulance (dial 000) immediately and state that 'a patient is having an asthma attack'.
5. Keep repeating steps 2 and 3 while waiting for the ambulance to arrive. If at any time the patient's condition suddenly worsens, call the ambulance again.
6. If breathing stops, start CPR immediately, as described in section 3.4.3.

DID YOU KNOW?

Remember the 4:4:4 rule. Keep giving four separate puffs. Take four breaths for each puff every four minutes until help arrives.

Anaphylaxis

Anaphylaxis is the most severe form of allergic reaction. It often involves more than one body system (e.g. respiratory, gastrointestinal and cardiovascular). A severe allergic reaction can occur within 20 minutes of exposure to the trigger and it can quickly become life-threatening. It must be treated as a medical emergency. Immediate treatment and urgent medical attention are required.

anaphylaxis a sudden, severe allergic reaction that may be fatal if emergency treatment is not given immediately

Up to 2 per cent of the general population and up to 5 per cent of children are at risk of anaphylaxis. The most common causes of anaphylaxis in young children are:

- eggs
- peanuts
- tree nuts
- cows' milk
- bee or other insect stings
- some medications.

FIGURE 3.49 Epinephrine injectors can be life-saving in the event of anaphylaxis.

Signs and symptoms

The signs and symptoms of anaphylaxis may occur almost immediately after exposure or within the first 20 minutes after exposure. Potentially life-threatening symptoms begin and develop rapidly.

Allergy symptoms may initially appear mild or moderate but can get worse quickly. The most dangerous allergic reactions involve the respiratory system (breathing) and cardiovascular system (heart and blood pressure).

Symptoms of allergic reactions include:

- tingling of the mouth
- swelling of the face, lips, eyes
- hives, welts or body redness
- vomiting or abdominal pain
- difficulty and/or noisy breathing
- swelling or tightness in the throat
- wheeze or persistent cough
- paleness and floppiness in young children
- swelling of the tongue
- difficulty talking or hoarse voice
- loss of consciousness and/or collapse.

Management of anaphylaxis

In Australia, anaphylaxis is treated by delivering adrenaline via an adrenaline injector (such as an EpiPen or Anapen). Follow these steps to administer an adrenaline injector.

- Lay the patient down — do not allow them to stand or walk.
- If unconscious, lay the person in the recovery position. If breathing is difficult, allow them to sit.
- Give them the injection and write down the time the injection was given.
- Phone the ambulance on 000 or 112.

Further adrenaline doses may be given if no response is seen after five minutes.

weblink If you are ever unsure whether an allergic reaction is occurring, administer the adrenaline injector anyway. Go to the **Action plan for anaphylaxis** weblink in your Online Resources to learn more.

Soft-tissue injuries

Signs and symptoms

Soft-tissue injuries are sprains and strains to the body's muscles, tendons and ligaments. The aim of first aid is to increase blood circulation to the injured area, and reduce swelling and pain.

Assessment of soft-tissue injuries

A checklist known as **SALTAPS** can be used to assess most injuries. These letters represent the procedure for diagnosing a sports injury.

SALTAPS simple checklist to use when diagnosing a sports injury; stands for stop, ask, look, touch, active movement, passive movement and stand

1. *Stop* play immediately when an injury occurs. The player should be examined on the field or, if practical, removed from the field or court.
2. *Ask* the player what happened, as well as how, when and why. Questions may include:
   - How did it happen?
   - Were you hit or not?
   - From which direction were you hit?
   - Could you move afterwards?
   - Where does it hurt?
   - Did you play on?
3. *Look* at the injury carefully before you touch it. Compare it to the other limb, looking for any change in:
   - colour
   - shape
   - size.

   A pale look may mean there is damage to the artery; a blue colour may mean there is a blockage to the veins; redness can indicate inflammation.
   An obvious change in shape compared with the other limb usually means there is a fracture, **dislocation** or both. An increase in size suggests there is bleeding under the surface of the skin.

dislocation when a bone slips out of a joint and the bones are forced from their normal positions

4. *Touch* the injured player to further assess the injury *only* when you have thoroughly looked at the injured area and its opposite limb. Begin by feeling the opposite side of the body. Pay particular attention to bone shapes, contours and bumps. Next, feel the injured area for any differences in tissue thickness, lumps, bumps or fluid under the surface. A difference in temperature may mean infection.
5. *Active movement.* Ask the person if they can move the injured area. If not, do not try to move it yourself. Note the range and directions of movement, and any clicking, grating or creaking around the limb.
6. *Passive movement*. When you have established the degree and extent to which active movement is possible, gently move the part through its range of movements without using force.
7. *Stand up, play on.* Check to see whether the person can put weight on the injury. Can they walk or run? Is the person fit to play on?

The decision to play on should not be made by the player or the coach. The decision should be made by a qualified trainer or after following the policies of the sport code.

Management of soft-tissue injuries

The management plan to limit blood loss and decrease swelling is known as **RICER** — rest, ice, compression and elevation and referral.

RICER a management plan for softtissue injuries that follows up the immediate treatment with a referral to medical care for longer-term management of the injury

1. *Rest.* Sit the person down, away from the action.
2. *Ice* should be applied continuously for 15 minutes every 2 hours for the first 24 hours. Ice should then be applied for 15 minutes every 4 hours for 24 hours. (Severe soft-tissue injuries benefit from ice being applied intermittently for up to 72 hours following the injury.) You can use crushed ice wrapped in a damp towel, or an ice pack that is kept in a first aid kit or the fridge. Ice constricts the blood vessels around the injury and, therefore, lets less blood escape. This reduces blood loss and swelling. Ice should not be put directly on the skin. Rather, wrap it in a wet cloth or place the ice pack on top of a bandage, as shown in figure 3.50.

3. *Compression* is achieved by using an elastic bandage. The elastic bandage applied around the injured area restricts internal bleeding and reduces swelling, as shown in figure 3.51.
4. *Elevation* is done by raising the injured body part so it is above the level of the heart. This reduces blood flow to the injured area, and reduces blood loss and swelling.
5. *Referral*. Refer the athlete to a qualified sports medicine practitioner for a complete appraisal of the injury. This will ensure correct treatment and speedy rehabilitation. The repair of the injured area will also be more successful — the person is more likely to regain the same movement and strength in the injured area.

FIGURE 3.50 Ice being applied to a soft-tissue injury

FIGURE 3.51 A compression bandage

In general, the **RICE** method (steps 1–4) should be continued for the first 48 hours after the injury has occurred. It is recommended the patient seek professional medical advice for their injury after first aid treatment. Referring an injured person to medical care can help with ongoing treatment and recovery. This is the fifth step in the management plan, where the final R stands for referral.

RICE management plan used to achieve the immediate treatment of a soft-tissue injury through the application of rest, ice, compression and elevation

FIGURE 3.52 Apply RICER — rest, ice, compression, elevation and referral — to soft-tissue injuries.

FIGURE 3.53 When managing an injury, follow the no HARM method shown here.

on Resources

Interactivity RICER (int-6347)

3.4.7 Safe blood practices

A blood-borne virus is a virus that can be transmitted from an infected person to another person through blood-to-blood contact. This contact can occur in a range of situations, including participating in physical activity, administering first aid, during unprotected sexual activity and by sharing injecting equipment. Commonly known blood-borne viruses include HIV and hepatitis B and C. In the majority of cases, hepatitis B is spread through sexual activity, whereas hepatitis C is spread through the sharing of injecting equipment.

Safe blood practices in a sporting context

A number of blood-borne viruses have the potential to be transmitted during sporting contact through cuts and open wounds.

Most contact sports follow the 'blood rule'. According to this rule, 'any player who is bleeding must leave the playing area for immediate attention from a medical or first aid officer' (Sports Medicine Australia). The player cannot return to the game until the bleeding has stopped and the wound is covered. If any blood has spilled onto the uniform, the piece of clothing must be replaced. Any equipment that has blood on it must be cleaned or replaced before play continues.

If bleeding starts again, the player must again leave the playing area until bleeding is under control and the wound is covered. If this is not possible, the player must take no further part in the game.

FIGURE 3.54 In contact sports such as Rugby League, bleeding players must immediately leave the area of play for medical or first-aid treatment.

Cleaning up a blood spill in a sporting environment

Playing areas

Playing surfaces with blood on them should be washed until all visible blood has gone. They then need to be disinfected with bleach and water for at least 30 seconds.

Clothing

All teams should have spare uniforms and extra clothing available, such as spare football jumpers. All items such as clothing and towels that have been contaminated with blood should be soaked in bleach or disinfectant for 30 minutes, and then washed at a high temperature on a long cycle. Sporting clubs should have a special bag in which all bloodied clothes can be placed so they can be safely transported to a laundry.

Individuals and sporting clubs are responsible for playing their part in preventing the spread of infection. By following some simple guidelines, the risk of spreading blood-borne viruses can be greatly reduced.

Sporting clubs are responsible for:

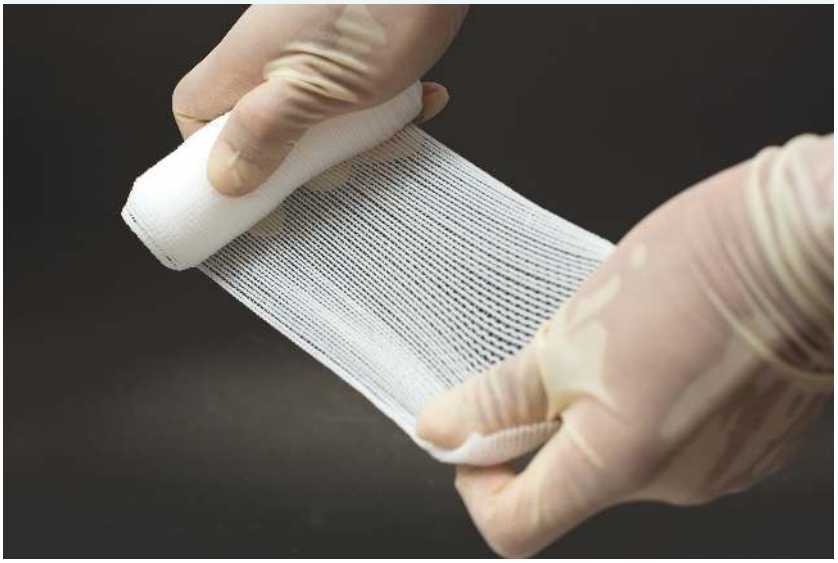
- adopting an infectious disease policy
- making sure a safe and clean environment is provided for players, spectators and officials
- proactively following the blood rule — for example, not waiting until the umpire notices and sends the player from the ground; individuals should remove themselves from play if they are bleeding
- continuing to educate all members on appropriate handling of blood spills.

Managing blood using first aid

Follow blood-safe practices when providing first aid with these procedures.

1. Put on single-use gloves, a face shield, glasses or any protective equipment that is available.
2. Follow the DRSABCD and bleeding protocols.
3. If applying a dressing, apply an airtight and waterproof dressing. Ensure the wound is covered completely. If the bleeding continues, apply additional pressure using either a gloved hand or firm bandage.
4. Remove any linen stained with blood or bodily fluids and substances. Place them in leak-proof plastic bags.
5. Remove gloves and place them in a biohazard container.
6. Wash hands with soap and water.

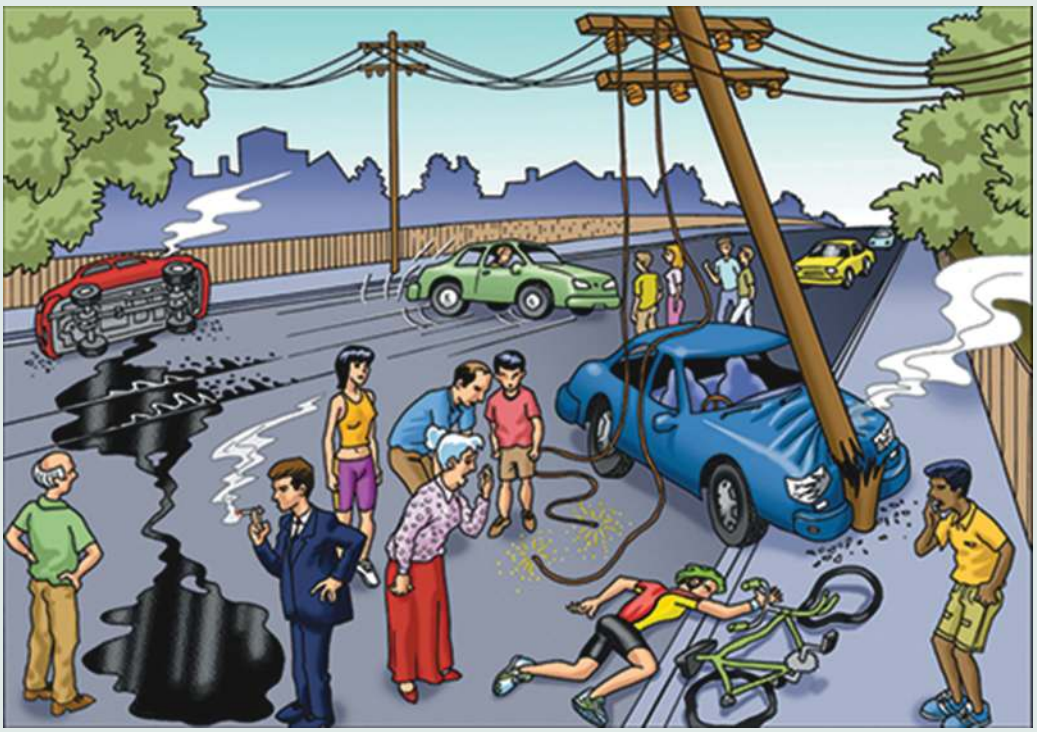
FIGURE 3.55 If protective gloves are not available, ask the patient to use their hands to apply pressure to the wound to slow down the bleeding. This can promote safe blood practices.



3.4 ACTIVITIES

1 You react

Examine the following scene and identify all the dangers shown and the causes of these dangers. Explain how you think a first aider should manage the scene.



2 Predicting danger

doc-14727

Complete the **Predicting danger** worksheet in your Online Resources to identify potential dangers to health and safety around the home.

3 Emergency call

a. What information needs to be given to the 000 operator in an emergency?
b. Think of three locations outside of the home where you spend a lot of time. Use the following table to record how you would describe the location to the 000 operator in an emergency so that help could arrive quickly.

Location	Street address	Nearest major intersection	Local landmarks

4 Practise first aid

Form pairs. Take turns being the first aider and the casualty. The first aider must apply the appropriate first aid for each of the following situations. Refer to the DRSABCD action plan, but do not actually perform the rescue

breaths or compressions on your partner because this can be harmful when the person is healthy; just pretend to do it. Alternatively, use a resuscitation manikin. Provide the appropriate first aid for these situations:

a. An unconscious, breathing casualty
b. A conscious casualty who has a blocked airway
c. An unconscious casualty who is not breathing

Rehearse one of these scenarios and make a video of yourself working through the steps of the DRSABCD action plan.

5 Research task

First aid can be applied to many different scenarios.

a. Select one of the following injuries or conditions:
- Fractures
- Burns
- Bites and stings

b. Identify the sign and symptoms.
c. Discuss how you would manage the situation as a first aider.

3.4 Exercise

3.4 Exercise

Select your pathway

LEVEL 1	LEVEL 2	LEVEL 3
1, 2, 3, 5, 7	4, 6, 8	9, 10

These questions are even better in jacPLUS!

- Receive immediate feedback
- Access sample responses
- Track results and progress

Find all this and MORE in jacPLUS

Check your understanding

1. MC Which two of the following numbers should be called in an emergency?
   - **A.** 000
   - **B.** 911
   - **C.** 112
   - **D.** It depends on where you are in Australia.
2. MC What is the correct acronym for the action plan to save a life?
   - **A.** DRABCDS
   - **B.** DRABC
   - **C.** DRSABCD
   - **D.** DRABCD
3. MC What is the purpose of a defibrillator (also known as an AED)?
   - **A.** To shock the body back into consciousness
   - **B.** To complete compressions instead of someone having to do them
   - **C.** To check heart rate
   - **D.** To shock the heart to try to get a regular rhythm
4. MC When giving CPR, what is the compressions to breaths ratio for an adult?
   - **A.** 10:10
   - **B.** 30:2
   - **C.** 2:30
   - **D.** 50:5

5. MC In a first aid situation, once you are satisfied there is no danger to yourself, bystanders or others, what would you do?
   - A. Check for a response from the casualty.
   - B. Call for an ambulance.
   - C. Check the casualty's pulse.
   - D. Start CPR.

Apply your understanding

6. **Explain** the objective of first aid and describe the five Ps in relation to first aid.
7. When giving cardiopulmonary resuscitation (CPR), strict guidelines must be followed.
   - a. **Identify** how many rescue breaths should be given when you first determine that the casualty is not breathing.
   - b. **Identify** how many chest compressions must be given immediately following the rescue breaths.
   - c. What is the ratio of compressions to rescue breaths during CPR?
   - d. When two people are available to give CPR, how often should they swap roles? Why?
   - e. **Explain** how long you should continue to perform CPR.
   - f. When performing CPR on infants, how should chest compressions be applied?
8. If the chest does not rise and fall when giving rescue breaths, **describe** what you should check.
9. **Summarise** the six key steps for managing an asthma attack.
10. Imagine you are a first aid volunteer at a local basketball venue. One of the players goes up for a rebound, lands on the foot of another player and rolls his ankle.
    - a. **Use** the SALTAPS checklist to assess the player's injury.
    - b. **Identify** the type of injury likely to have occurred.
    - c. **Describe** the RICER management plan you would recommend to enhance the recovery process.

LESSON
3.5 Support services in the community

LEARNING INTENTION

- Describe how to access and evaluate help and support services in the community for issues of concern for young people.

3.5.1 Achieving optimal health and wellbeing

Optimal health and wellbeing is the best health we can achieve. What is optimal varies from person to person, and depends on our abilities and other factors. However, community help and support services can help young people to manage and improve their health outcomes.

ENGAGE

Consider an online or community support service that you are aware of or have used in your local area. What criteria would (or did) you use to assess its effectiveness as a tool for young people?

Think about how we know whether the information provided by support services is accurate, and how we can act on it appropriately.

FIGURE 3.56 How do you know which health centre or support service is right for your needs?

3.5.2 Health and wellbeing of young people

Health and wellbeing is subjective because it means different things to different people, depending on their stage of life. For young people, strong family and friendship relationships are usually highly valued.

Research by Mission Australia in 2021, which surveyed just over 20 000 participants, identified many issues of personal concern to young people. The top three issues were coping with stress, mental health, and school or study problems.

- Close to half (46.0 per cent) of respondents said they were extremely or very concerned about coping with stress.
- More than 4 in 10 (41.9 per cent) respondents were extremely or very concerned about mental health.
- Over one third of young people were extremely or very concerned about school or study problems (36.8 per cent) and body image (33.6 per cent).

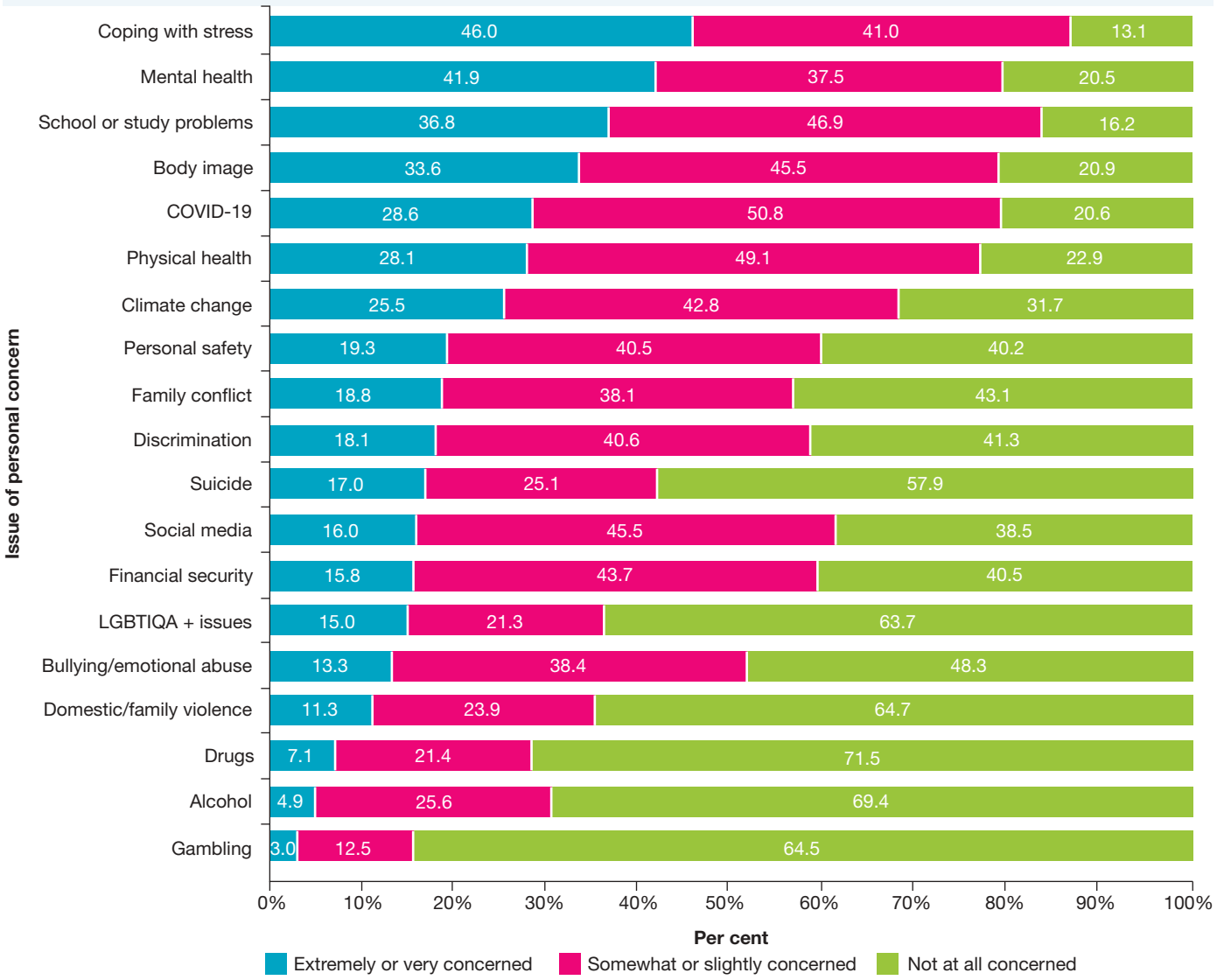
FIGURE 3.57 Mental health continues to be a significant issue for young people.

Mental health concerns are a significant issue for young people, especially in the context of COVID-19. The pandemic caused many stressors for young people — for example, uncertainty about the future, unemployment and financial concerns, and social-isolation issues. Figure 3.58 shows the main areas of personal concern for young people from the 2021 Mission Australia survey. This is an annual survey, so you can visit the **Mission Australia** website in your Online Resources for the latest results.

weblink

Many help and support services are available online and in the local community to provide advice, guidance and strategies to manage the issues of concern for young people.

FIGURE 3.58 Issues of personal concern to young people



Source: Mission Australia, Youth Survey Report, 2021.

3.5.3 Sources of health information

Accessing health information and finding the right answers can sometimes be quite a challenge for young people. Enhancing health literacy skills — the ability to obtain, process and act on health information — is important. Being able to evaluate the appropriateness and effectiveness of health and support services can empower people to make better health decisions. A range of help and support services are available both in your local community and online. These can include the sources shown in figure 3.59.

FIGURE 3.59 Help and support services

Family and friends

Trusted family and friends can be a convenient source of health information. Family members and friends may give advice on health issues and might be able to refer you to general services, such as doctors. However, they can also lack knowledge on specific health matters. The most important role your family and friends can play is to help you understand the problem, seek out sources of help and evaluate information.

School

Your school network is an excellent resource because it includes your Health teachers, counsellors and other staff who have a good understanding of adolescent concerns. They are a source of reliable information and contact details for local health services. Health lessons are a good place to explore and gain knowledge about health issues. Your teacher should be able to provide guidance on where to find further information or connect you with other resources at school or within the wider community.

FIGURE 3.60 Health education lessons can be a reliable and valid source of information.

Healthcare providers

General practitioners (GPs — also known as family doctors) are a valuable and trusted source of health information. When you meet with a GP, you can get specific and individual health advice that is appropriate for your age.

Community health services

Community health services provide help and health information within a community. Examples include local community organisations such as headspace, and community health and youth services run by state and territory governments. As well as face-to face counselling services, these organisations can offer phone counselling and fact sheets, and host forums, workshops and online chats.

The internet and online organisations

The internet is an extensive source of health information. It provides access to a large range of advice and links to agencies and websites. Being able to evaluate online sources of information to make sure they are valid and reliable is important, because some internet sources may be inaccurate and can even provide harmful advice. Guidelines for evaluating the validity of online sources of information are given in section 3.5.5.

3.5.4 Community help and support services for mental health issues

Mental health is important throughout our lives, but especially during adolescence. It influences the way we behave and feel. Mental health during adolescence has specific challenges due to:

- the biological changes of puberty and sexual maturation
- social changes
- peer pressure
- dealing with the increased independence.

FIGURE 3.61 Mental illness can disrupt school work and social life.

Mental health concerns are more common in adolescence and they can have a big impact on a young person's life. Mental illness is most likely to present between the ages of 15 and 24 — the time when young people are practising and developing their relationship skills.

Mental illness can be very scary and can disrupt school and family life. Sometimes the ignorance surrounding mental health disorders leads to intolerance or misunderstanding in friends and family, and the young person can feel isolated. Support and understanding is important. A number of services are available for young people needing support for mental health disorders, and for their friends and family.

Common mental health disorders

Having an understanding and awareness of the range of mental health disorders can increase your health literacy, increase acceptance and help to overcome stereotypes. The more common mental health disorders can be categorised as anxiety disorders, affective disorders and substance-use disorders.

Anxiety disorders

Anxiety disorders involve feelings of excessive nervousness, tension or distress. They include the following conditions:

- obsessive–compulsive disorder
- panic disorder
- agoraphobia (fear of open spaces)
- post-traumatic stress disorder (PTSD)
- social phobia (fear of social interaction, including talking on the phone and going to parties).

Affective disorders

Affective disorders involve mood changes and mood swings. Depression and mania are affective disorders. Most people with an affective disorder suffer from **depression**. Depression is characterised by a loss of enjoyment of life, lack of energy and concentration, sleep disturbance and a change in eating habits. Depression is a common mental health concern affecting many teenagers.

Substance-use disorders

Substance-use disorders involve harmful use of and **addiction** to drugs, including alcohol and illegal or prescription drugs. Alcohol-use disorders are about three times as common as drug-use disorders.

anxiety disorders types of mental disorder; for example, obsessive–compulsive disorder, panic disorder and social phobia

affective disorders types of mental disorder; for example, depression and mania

depression extreme feelings of hopelessness, sadness, isolation, worry and withdrawal that last for a prolonged period and interfere with normal activities

substance-use disorders type of mental disorder; involves harmful use of, and addiction to, drugs (including alcohol)

addiction dependence on something, such as alcohol or other substances

Mental health support services

Mental illness can be diagnosed and treated in the same way as physical illness. Early interventions and community support can help most people develop strategies to better manage their mental illness and even recover.

People and services are available within the community that can provide support to young people in a range of areas, including assistance with emotional, physical and mental health issues.

Community support services may include, but are not limited to:

- your local general practioner (GP)
- school counsellors
- school nurses
- your local community health centre
- support groups that are funded by a range of organisations, such as not-for-profit, local government or religious centres
- local government programs such youth services or social support groups
- maternal and child health centres
- Lifeline (13 11 14)
- Kids Helpline (1800 55 1800).

weblink

Many great internet-based organisations and websites can help young people deal with mental illness. These include:

- Beyond Blue
- Black Dog Institute
- headspace
- Kids Helpline
- SANE Australia.

FIGURE 3.62 You can obtain information about health services from various sources.

ReachOut

ReachOut is an online mental health service for young people and their families in Australia. ReachOut provides self-help information, peer-support programs and referral tools to help young people be well and stay well. ReachOut's website offers a range of options for young people aged 12–25, with a focus on supporting their mental health and wellbeing through everyday issues and tough times. The website has articles and information, an online chat and community to connect with, as well as a range of mobile phone apps and tools that can help with health and wellbeing. ReachOut is free and anonymous, and its online platform is available 24/7 and has no waitlists.

FIGURE 3.63 ReachOut is an online mental health service for young people.

REACH OUT.COM

weblink Use the weblinks in your Online Resources to check out this and other useful websites.

3.5.4 Evaluating the effectiveness of community help and support services

The internet has an enormous amount of health and wellbeing information that explores the social, emotional and physical changes and challenges of adolescence. Online information is easily available, but not all of it is accurate or reliable. How can you work out which information you should trust?

Evaluating the validity of online health information

The internet offers many sources of health-related information, including influencers, bloggers, social media accounts and many health apps targeting adolescents. But how do you know if the information has come from a credible source? You can use the REAL strategy to evaluate whether a source is reliable.

- *R — Read the URL.* Non-commercial sites, such as those ending in .org, .edu and .gov, are usually reliable. Websites with a URL ending with .com may be a commercial site trying to sell a product, and so may not be a reliable source of information.
- *E — Examine the site's contents.* Who funds or sponsors the website, blog, social media account or app? Is the material current — that is, was it published recently and is it up-to-date? Is the site updated regularly? If the site is a social media site, is it moderated or managed?

- *A — Ask about the author of the site.* Look at the author, publisher and/or organisation that publishes the website, blog or social media account. What are their credentials? Are they qualified to be providing advice? Can you find the details of the author or publisher if you wish to contact them? If the source is a blog or social media account, what information is provided in the profile?
- *L — Look at the links and sources from the site or blog.* What type of pages are they linking to? Are these credible sources and do their web addresses end in .gov, .edu or .org? What sources are used? Are these credible and relevant sources?

These skills will be revisited in Topic 4.

Evaluating e-mental health services

In addition to online organisations, e-mental health (eMH) services are becoming increasingly available. These services provide mental health help and support through websites, apps and devices.

When using eMH services, use the REAL strategy to evaluate them, but also find out who developed and funded the app, and consider if they are qualified to provide this information. Check if they are affiliated with a particular product or brand and if they have something to sell. This can help you uncover any hidden motives to help you decide whether to trust the information.

In addition to the REAL strategy, when deciding whether to trust the information provided via online health services, you should ask yourself the following questions:

FIGURE 3.64 When using an online health service, ensure it is valid, reliable and appropriate for your needs. Apply the REAL strategy.

1. Is the website owned or sponsored by a reputable organisation? Every affiliation should be clearly shown on the home page or via a link from the home page.
2. Can you contact the owners of the website via email, telephone or regular mail? Do they provide a street address? Be wary if the owners don't offer any means of communication.
3. Is the website trying to sell you products or services? If so, a conflict of interest may exist. For example, the website publishers could be wording their content in a way that is designed to encourage you to buy their product. Advertising should be clearly differentiated from information.
4. Does the website redirect you to another site that you didn't intend to visit?
5. Does the website have a disclaimer about protecting your personal health information and privacy?
6. Is the health information consistent, or can you spot contradictions?
7. Does the content go through a review process? Are the clinical or scientific articles reviewed regularly by professionals in the relevant field who are not directly employed by the website owners? Is the review process explained?
8. Is the information recent and regularly updated? Is each article dated? Is the editorial process explained?

Evaluating community health services

Figure 3.65 shows the sorts of questions you can ask when evaluating community health support services.

FIGURE 3.65 Ask questions to evaluate health information.

In addition, you can use the criteria outlined in table 3.5 to assess how appropriate and effective the service (whether in person or online) is for you and your health needs.

TABLE 3.5 Criteria for assessing the appropriateness of help or support services

Criteria	Critiquing a local help or support service
Effective	• Does the support service or program develop and deliver resources and services that increase skills, knowledge and risk-management strategies according to youth needs?
Safe	• Is the support service or program: – non-judgmental? – discrete — promoting feelings of security and care? – respectful? Does it show me dignity and consideration? • Does the service uphold my rights to privacy and confidentiality?
Accessible	• Is the service cost-effective and accessible for all? • Is the program accessible without discrimination? • Is the service culturally appropriate, sensitive and inclusive? • Is the information offered online or via digital platforms that are appropriate for adolescents?
Strength-based	• Does the program put young people at the centre? • Does the service promote help-seeking behaviours? • Does the program provide practical skills? • Does the service provide strategies and tools to enhance resilience, self-esteem, communication skills and self-acceptance?

3.5 ACTIVITIES

1 Finding local support services

a. Find a map of your local area and mark the positions of all the help and support services available to help you with issues related to mental health and drugs and alcohol use.
b. Identify the most suitable route for getting to one of the health services from your home.
c. Visit or research one of these help or support services. Collect information about the services it offers, including information on access, cost, confidentiality and the type of issues it helps with.
(*Note:* It may be easier to organise a class visit to a range of support agencies or to invite members of an agency to visit the class.)
d. During your contact with the service and its staff, collect any pamphlets or factsheets that describe the work that it does. Be prepared to share this information with the class, reporting the details of your research and the type of support that is available to young people from this support service.

2 Evaluate an online help or support service

weblink

a. Use the weblinks in your Online Resources to research one online support service targeting youth. Weblinks include: **Beyond Blue, Black Dog Institute, headspace, Kids Helpline, ReachOut, SANE**.
b. Complete the REAL evaluation strategy.
- Read the URL.
- Examine the site's contents.
- Ask about the author or publishers.
- Look at the links.

c. Answer the following questions:
i. Who is the organisation funded, supported or endorsed by?
ii. Does it provide factsheets? Provide some examples.
iii. Does it have confidential telephone counselling services? How do you access it?
iv. Does it have a live chat forum?
v. What strategies or advice does the website provide to support someone experiencing a mental health issue?

3 Mission Australian Survey

weblink

a. Using the **Mission Australia** website in your Online Resources, access the latest Mission Australian Youth Survey.
b. Research the difference in issues of personal concern between males and females.

4 Practise your skills

doc-39448

Use the **Locating accurate, reliable information on the internet** worksheet in your Online Resources to practise your skills in finding appropriate health information online.

5 Collect and assess information

doc-39446

Use the **Where can I find accurate health information?** worksheet in your Online Resources to collect information on selected issues and assess their usefulness.

3.5 Exercise

3.5 Exercise

Select your pathway

LEVEL 1	LEVEL 2	LEVEL 3
1, 2, 3, 4	5, 7, 8	6, 9

These questions are even better in jacPLUS!

- Receive immediate feedback
- Access sample responses
- Track results and progress

Find all this and MORE in jacPLUS

Check your understanding

1. MC Which two of the following offer support for mental health?
   - A. Lifeline
   - B. Black Dog Institute
   - C. LiveLighter
   - D. National Heart Foundation
2. MC When evaluating the validity of online health support services, what does the 'E' stand for in the acronym REAL?
   - A. Explore the website
   - B. Educate yourself
   - C. Examine the site's content
   - D. All of the above
3. Your friends and family are always a reliable and accurate source of health information. True or false?
4. MC When analysing online help and support services, which of the following questions is it important to ask?
   - A. Is the website owned or sponsored by a reputable organisation?
   - B. Can you contact the owners of the website via email, telephone or regular mail?
   - C. Is the website trying to sell you products or services?
   - D. All of the above.
5. Your physical health is more important than your mental health. True or false?

Apply your understanding

6. **Analyse** why it is important to assess and evaluate health information and services.
7. **List** three questions you should ask when assessing health information.
8. If you were struggling with depression, **identify** what help and support resources you could use that are available online or in the community.
9. Using the latest Mission Australia Youth Survey, **outline** the top five issues of personal concern for young people.

LESSON
3.6 Review

Hey students! Now that it's time to revise this topic, go online to:

Review your results

Watch teacher-led videos

Practise questions with immediate feedback

Find all this and MORE in jacPLUS

3.6.1 What have I learned?

- Risk-taking is part of everyday life and can have positive or negative effects on people and property.
- Planning and making responsible decisions will minimise harmful risk-taking.
- Harm-minimisation strategies are designed to reduce risk and minimise potential harm.
- Alcohol is a legal drug that can cause short- and long-term harm to health.
- Binge-drinking and pre-loading are a particular problem among adolescents.
- Illicit drugs also cause short- and long-term risks to health.
- Safe partying requires careful planning, and such planning is an excellent harm-minimisation strategy.
- Smoking is a legal activity for adults, but the chemicals in tobacco cause short- and long-term health problems.
- Vaping is an emerging risk behaviour. E-liquids can contain harmful chemicals and can be addictive and dangerous to health.
- First aid is the initial help that is given to an injured or ill person by people at the scene of an accident.
- In the event of an accident, use the DRSABCD action plan — check for danger, seek a response from the patient, send for help, check the patient's airway, check their breathing, and use cardiopulmonary resuscitation (CPR) and/or defibrillation if necessary.
- CPR is a technique that combines rescue breaths with external cardiac compression. It is used when a casualty is unconscious and is not breathing.
- It is important to learn first aid techniques so that you may be prepared in the event of an accident.
- Soft-tissue injuries should be treated according to the guidelines summarised by RICER, which stands for rest, ice, compression, elevation and referral.
- Diagnosis of injuries is summarised by SALTAPS, which stands for stop, ask, look, touch, active movement, passive movement and stand up, play on.
- All blood spills should be treated as potentially infectious and handled according to the club's infectious disease policy.
- A player who is bleeding should leave the playing area for immediate attention from medical personnel.
- Issues of personal concern to young people include mental health, stress, and school and study problems.
- A range of help and support services are available in the community for young people, including online services such as ReachOut, headspace and Kids Helpline.
- When assessing the validity and reliability of online sources, use the REAL strategy.
- When assessing the appropriateness of community health services use the criteria of effectiveness, safety, accessibility and whether the service is strengths-based.

ESSENTIAL QUESTION REVIEWED

- Where in your life have you experienced risk?
- What strategies did you use to reduce the risk of harm?

Evaluate your initial response to the essential question now that you have studied this topic.

3.6.2 Key terms

addiction dependence on something, such as alcohol or other substances
affective disorders types of mental disorder; for example, depression and mania
airway the passage that leads from the mouth, nose and throat to the windpipe
amphetamines illicit drugs with several names, such as speed or ice; affect the activity of chemicals in the brain, causing anxiety, shaking and panic attacks
anaphylaxis a sudden, severe allergic reaction that may be fatal if emergency treatment is not given immediately
anxiety disorders types of mental disorder; for example, obsessive–compulsive disorder, panic disorder and social phobia
assertive stating your point of view without being overly aggressive and without putting others down; being able to say 'no'
asthma medical condition characterised by bronchial spasms that limit the flow of air to the lungs, causing difficulty breathing
automated external defibrillator (AED) an accurate and easy-to-use computerised medical device that analyses a person's heart rhythm and recognises a rhythm that requires a shock. It uses voice and visual prompts to guide the first aider.
binge-drinking drinking large amounts of alcohol in a short period of time; drinking constantly for a number of days; drinking to get drunk
cannabis illicit depressant drug that can have a hallucinogenic effect
cardiac arrest disturbance of the normal electrical activity in the muscles of the heart's larger pumping chambers resulting in ineffective circulation
cardiopulmonary resuscitation (CPR) an emergency technique that combines rescue breaths with external chest compressions at a ratio of 30:2 at 100–120 compressions per minute; used when a casualty is unconscious and is not breathing
cocaine illicit stimulant with hallucinogenic properties
concussion acute injury to the head caused by collision
consequences results of a person's actions; may be either positive or negative
defibrillation the application of electrical therapy that allows the heart to re-establish an effective rhythm
depression extreme feelings of hopelessness, sadness, isolation, worry and withdrawal that last for a prolonged period and interfere with normal activities
disease transmission passing diseases from one person to another; includes infections and parasitic diseases
dislocation when a bone slips out of a joint and the bones are forced from their normal positions
DRSABCD action plan a plan of action that prioritises checking for danger, seeking a response from the casualty, sending for help, checking the airway and breathing of the patient, commencing CPR and applying a defibrillator if necessary, and in that order
ecstasy illicit drug; extremely dangerous, causing paranoia, organ damage, insomnia and dehydration
first aid the initial or first help that is given to an injured or ill person. It is administered until medical help arrives.
harm minimisation any action or strategy designed to remove or reduce risk and, therefore, prevent or minimise harm
health literacy the degree to which individuals have the capacity to find, process and understand health services and information and make decisions about their health.
illicit drug any drug that is banned by law
peer group group of people of a similar age with similar interests, often from a similar social background
personal boundaries the limits you set for yourself and for your interactions with others to help you know what you are comfortable with
recovery position the body position a casualty is placed in to ensure the airway is kept open and clear of obstructions
rescue breaths given to a casualty who is not breathing; the breath will take one second to deliver and will make the casualty's chest rise
resilience the ability to manage a difficult situation and 'bounce back'; increases the chance of responding well to future challenges
RICE management plan used to achieve the immediate treatment of a soft-tissue injury through the application of rest, ice, compression and elevation
RICER a management plan for softtissue injuries that follows up the immediate treatment with a referral to medical care for longer-term management of the injury
risk meeting challenges that have the potential to cause harm, loss or injury

SALTAPS simple checklist to use when diagnosing a sports injury; stands for stop, ask, look, touch, active movement, passive movement and stand
self-esteem the way you feel about yourself; high self-esteem means you feel good about yourself and you are confident in your abilities
signs of life consciousness, responsiveness, normal breathing, signs of movement
substance-use disorders type of mental disorder; involves harmful use of, and addiction to, drugs (including alcohol)
unconscious a condition in which a person is unaware of or does not respond to external influences

Resources

Interactivity Crossword (int-8998)

3.6 Exercise

3.6 Exercise

Select your pathway

LEVEL 1	LEVEL 2	LEVEL 3
1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 13	11, 14, 15, 17, 19	16, 18, 20

These questions are even better in jacPLUS!
- Receive immediate feedback
- Access sample responses
- Track results and progress

Find all this and MORE in jacPLUS

Check your understanding

Identify whether the following statements are true or false.

Statement	True or False
1. You can call 112 from a fixed-line telephone to contact emergency services.	
2. You have to be trained to use an automated external defibrillator (AED).	
3. When checking the airway, the unconscious casualty should be rolled onto their side (recovery position) only if something is blocking the airway.	
4. When administering CPR to a small child (between one and eight years of age), you should use only one hand for the compressions.	
5. Asthma can be a deadly condition.	
6. Risks should never be taken because they always cause harm.	
7. Harm minimisation is an action designed to remove or reduce risk.	
8. Binge-drinking is not a problem in Australian youth culture.	
9. In the long term, excessive alcohol use has been linked to heart disease, stroke, liver disease, pancreatic disease and cancer of other organs.	
10. Tobacco causes more illness and deaths than any other drug.	

Apply your understanding

11. **Outline** why people take unnecessary risks.
12. **State** what is meant by the term ‘harm minimisation’.
13. **Recall** five important tips for organising a safe party.
14. **Name** the major harmful effects of smoking on the body.
15. **Describe** what an illicit drug is. Give examples.
16. Imagine you are at a party and one of your friends suddenly collapses and is unconscious. Following the DRSABCD action plan, **discuss** the steps you would take to manage the situation.
17. **Outline** the procedures a person trained in first aid should follow when treating a soft-tissue injury such as a sprained ankle.
18. **Describe** how a blood incident might be managed in a sporting game.
19. **Outline** the range of help and support services available to help young people manage areas of personal concern.
20. **Discuss** why it is important to evaluate the appropriateness and effectiveness of both online and community help and support services.

Online Resources

on Resources

Below is a full list of **rich resources** available online for this topic. These resources are designed to bring ideas to life, to promote deep and lasting learning and to support the different learning needs of each individual.

Topic PDF

- 3.1 Managing risks (tpdf-3591) ☐

Digital documents

- 3.2 Making responsible choices (doc-14735) ☐
- 3.3 Accident scenario (doc-14729) ☐
- Predicting danger (doc-14727) ☐
- 3.5 Locating accurate, reliable information on the internet (doc-39448) ☐
- Where can I find accurate health information? (doc-39446) ☐

Video eLessons

- 3.1 Managing risks (eles-6100) ☐
- 3.4 Safety, first aid and sports injury management (eles-2337) ☐

Interactivities

- 3.3 Standard drinks (int-5505) ☐
- Short-term and long-term effects of alcohol (int-6014) ☐
- Long-term effects of smoking (int-6015) ☐
- 3.4 Five Ps of safety (int-5499) ☐
- Rescue breathing (int-5743) ☐
- Steps of the DRSABCD action plan (int-6241) ☐
- Recovery position (int-6012) ☐
- RICER (int-6347) ☐
- 3.6 Crossword (int-8998) ☐

Solutions

- 3.6 Answers: topic 3 ☐

Weblink

- 3.3 DrinkWise ☐
- Partying safely ☐
- Police partying ☐
- Regrets of yesterday ☐
- Hello Sunday morning ☐
- QuitNow ☐
- 3.4 DRSABCD ☐
- Man saved ☐
- Breathe well, live well with asthma ☐
- Action plan for anaphylaxis ☐
- 3.5 Mission Australia ☐
- Beyond Blue ☐
- Black Dog Institute ☐
- headspace ☐
- Kids Helpline ☐
- ReachOut ☐
- SANE ☐

Teacher resources

There are many resources available exclusively for teachers online.

To access these online resources, log on to **www.jacplus.com.au**.

4 Finding and using health information

LESSON SEQUENCE

4.1 Overview 169
4.2 Health information, services and support 170
4.3 Health, wellbeing and First Nations Australians 183
4.4 Strategies to increase personal safety 189
4.5 Review 197

FIGURE 4.1 Sometimes it can be hard to sort through all the health information from various sources. Learning how to do this is important to make the best choices.

LESSON
4.1 Overview

Hey students! Bring these pages to life online

Watch videos

Engage with interactivities

Answer questions and check results

Find all this and MORE in jacPLUS

4.1.1 Learning to navigate health information

There is so much information available that it can be hard to know what to believe and which sources to trust. We are lucky that we have a range of services and support services available for people of all ages to promote health, safety, wellbeing and physical activity levels.

This topic will help you to develop the skills to analyse health information from a range of sources. This will help you support your own physical and mental health and wellbeing, and understand how to look after others and support them when needed.

Health literacy is also about having the skills to understand health issues and to make responsible decisions. This topic will investigate health issues specific to First Nations Australian communities. It will also look at a variety of ways to keep yourself and others safe.

ESSENTIAL QUESTION

How do we know what sources of health information are reliable so that we can be guided to live a healthy life?

STARTER QUESTIONS

1. Where do you get your health information?
2. Do you think your current sources of health information are reliable?
3. Would you know where to seek help and advice for health concerns?
4. What health issues are specific to First Nations Australian communities?
5. How can you increase your personal safety?

on Resources

Video eLesson Finding and using health information (eles-6101)

LESSON
4.2 Health information, services and support

LEARNING INTENTION

- Identify the most reliable sources of health information.

4.2.1 Health literacy skills

Health literacy is the ability to find, process and understand basic health information and services. Young people need this skill to make good decisions about their health and wellbeing. However, with so much information available, being an effective health consumer — that is, finding reliable and trustworthy information when you need it — can be difficult.

health literacy the ability to find, read, understand and use healthcare information to make good health decisions and follow instructions for treatment

Health literacy is not just about reading and interpreting information about health problems and issues. It is also about using that information to make good decisions based on a thorough understanding of the health services available and how best to access and use these services.

The first step in becoming skilled at finding the right information is to develop your critical health literacy skills. This allows you to:

- read for meaning
- analyse information specific to its context.

Be critical about accepting information until you know it is correct. Consider the influencers you see online on Instagram or Tik Tok. As an effective health consumer with good health literacy skills, you will be able to sift through the information you see on social media platforms, so that you are not misled by incorrect information.

ENGAGE

Have you ever seen health advice on social media? Make a list of the potential dangers of following the health information you get from influencers online.

FIGURE 4.2 Have you ever followed health information from an online source?

Critical literacy

To be critical when reading, consider the reason the information was created and how the information is presented by the author. Think about:

- Who is the author?
- What are their credentials?
- What is their point of view?
- Are they being paid for their opinion?

For example, you may read an article about the decriminalisation of cannabis. If the article was written by someone who uses cannabis to ease their pain due to an illness, they will probably have a positive view of cannabis use and avoid mentioning any negative effects of the drug. Being able to develop **critical literacy** skills will help you to reflect on and evaluate the health information you see on TV, in newspapers and on the internet.

FIGURE 4.3 We must critically examine products that claim to be 'low fat' to ensure we are making positive health choices.

When you are looking at advertisements, you should consider any health claims made about the product. For example, if a sweet-tasting product claims it contains no sugar, you can check the nutrition label and ask yourself 'What ingredient has been added to this product to make it sweet?' Likewise, when someone is promoting a diet product with claims of fast, effective weight loss, you should research the product to find out what is in it, and whether it can be used as part of a healthy and sustainable diet. These kinds of questions and skills help make you knowledgeable about health, and they make it easier for you to assess the accuracy and legitimacy of health-related claims.

4.2.2 Assessing health information

Sometimes the amount of health information available can seem overwhelming. It may feel like everywhere you look, you are being bombarded with information and research from various sources. At times, the information you hear and see is conflicting, which can add to confusion and uncertainty. If specialist medical language is used, the information may also be hard to understand, particularly for a young person or someone with English as an additional language.

critical literacy a skill that involves questioning and examining ideas, and that requires you to analyse, interpret, evaluate and respond to the texts you read or listen to

If you are ever in doubt about any information you receive, it is a good idea to seek a second opinion. Talk to a qualified health professional about your concerns or find a reliable source to double-check the information you've been given. The more informed you are, the more confident you will be in the decision you make.

One way to decide if health information is appropriate and accurate is to ask questions to clarify what you've been told, or what you have read. Make sure you write down any questions you have and discuss them with a health professional to make sure that you understand the information.

Government departments and specialist health agencies, such as family planning or the Australian drug foundation, can be relied on to provide accurate and up-to-date information. These are **credible** sources that you can turn to when dealing with uncertainty about the accuracy of information.

credible reliable; trustworthy

weblink

Use the weblinks in your Online Resources to explore some of the agencies that provide trustworthy health information for young people such as **Healthy active kids**, **Kids health**, **headspace** and **Kids Helpline**. A good tip for finding reliable websites is to look for ones that end in gov.au or .org, as these are non-commercial (i.e. they are not trying to sell you anything).

4.2.3 Analysing online information

When we explore the internet for information, we need to examine it for:

- quality
- authority
- accuracy.

As you probably know, *anyone* can publish *anything* on the internet. This means that anyone can promote a point of view, or endorse a product or service, online without any **credentials** (e.g. qualifications, experience, industry affiliations) that would make their opinion reliable.

credentials documents or other evidence that show a person's qualifications or identity — like a set of papers or cards that prove who a person is and what they can do

This is where our critical literacy skills come in handy. Using these skills, we can ask ourselves questions to check the credibility of a source, rather than just accepting what we see or read as fact.

Questions you might want to ask include:

- Who wrote the information?
- Is the information up-to-date and accurate?
- Why was it written?
- Is evidence provided to support any claims made?
- Is anyone likely to benefit financially from the information?

Let's look closer at these questions.

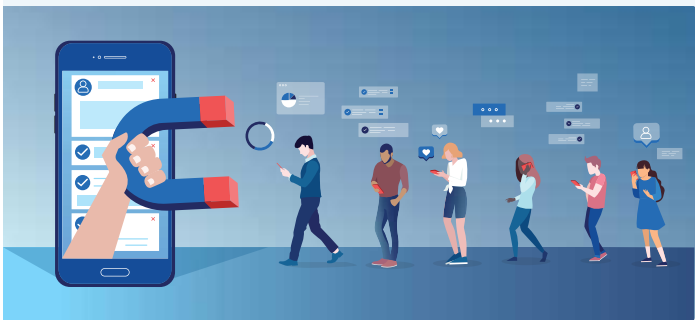
Who wrote the information?

Has the information been written by a professional person? Have they provided their credentials and can they be verified? For example, is the health article you are reading written by the head of the Australian Medical Association, a sports celebrity or an unnamed and unknown person? What does that tell you about the credibility of the information?

Is the information accurate and up-to-date?

Check when the information was posted and when the site was last updated. Can the information be verified by other sources? When were those sources published? Are they up-to-date? This is important because health recommendations change over time as better information becomes available through research. This means that some health information published in the past may now be considered inaccurate.

FIGURE 4.4 Social media can draw people in easily, but how much is real?



Why was it written?

Why was the website or webpage created? Look at the web address (e.g. the domain name). Was the site created for commercial or promotional purposes (e.g. '.com'), government purposes (e.g. '.gov') or educational purposes (e.g. '.edu').

Is evidence provided to support any claims made?

Be willing to question any claims made about the product or service. If evidence is provided, consider its validity. If it is claimed that scientific studies have found particular evidence about the product, you should ask questions such as: Were a large number of people studied? Was the study conducted by qualified professionals? Have other studies found similar results?

Is anyone likely to benefit financially from the information?

If the information you are reading is advertising a product, then the information will be favourable towards that product. For example, a report on a particular brand of skin cream written by a researcher working for the skin care company and published on the company's home page will be trying to promote the product. Similarly, if you are looking at information on a site that is sponsored by a particular company, then that information could be biased towards that company and its products.

4.2.4 Analysing information in popular culture

Critical literacy skills should also be applied to the messages presented in popular culture about health-related issues. Think, for example, about the messages shown in movies about drug use or sexual relationships.

Are these images an accurate reflection of reality? Do they show both the positive and negative effects of behaviours such as smoking, drinking too much alcohol or having unplanned sex?

Popular culture and messages about sexual health

Nearly half of children between the ages of nine and 16 experience regular exposure to sexual images through TV shows, advertisements, movies and music clips. Young people also have increased access to pornography.

Exposure to this kind of explicit content can negatively influence young people's knowledge and expectations about safe sex practices, sex and gender roles. In addition, unrealistic portrayals of sexual relationships in the media can have a negative influence on people's beliefs about respectful, safe and consensual relationships.

As just one example, TV shows targeted at teenagers often include stories that suggest sex is an expected part of a teenage relationship. This is despite the fact that in Australia, the majority of young people have not had sex by year 12 (see topic 2).

Education about safe and respectful relationships is important to overcome the negative influence that the media can have on young people's thinking about sexual relationships and gender roles. This education is a key part of health literacy.

Popular culture and messages about physical health

Think about some of the social media profiles of influencers that you have seen. What sorts of health messages do they send? Do they endorse certain products? Ask yourself: 'Is the influencer showing their real life and the health-related activities they participate in?' and 'Is it an accurate reflection of their level of wellbeing?'

It is common for influencers to advertise products that they do not actually use. Some influencers will show a product just to get paid by a company. They might also receive money if you buy a product through them or by using a code they provide.

The media and TV often portray physical health in a limited way. They often show people who are thin and toned as being the most healthy and attractive. They might also show people doing intense workouts or sports, which can make it seem like you need to exercise a lot to be healthy.

However, it's important to remember that there's no one 'perfect' body type or way to be healthy. Everyone's body is different, and what works for one person might not work for another.

FIGURE 4.5 The health messages in popular culture should be critically analysed. Don't assume that everything you see on TV, online or in magazines is true or relevant to you.

Physical health isn't just about how you look on the outside. It's also about how you feel on the inside, physically and mentally.

Try to be critical of the messages you see in the media and TV about physical health. Remember that everyone's body is different, and that being healthy is about more than just how you look.

By developing your own knowledge about what it means to be healthy, you will be able to identify unrealistic health messages in popular culture. Being able to identify which messages are accurate is an important part of health literacy.

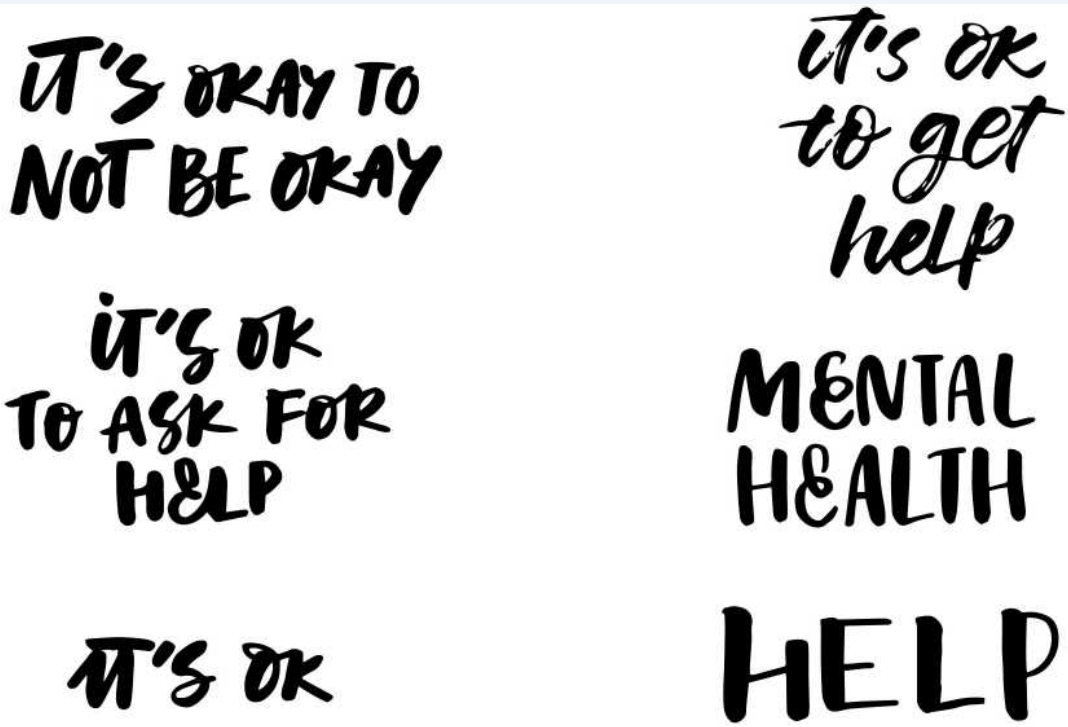
4.2.5 Common health concerns and where to get help

This section will introduce where to access information and support for the common health concerns of:

- mental health
- substance use
- healthy food choices
- fitness and exercise plans
- sexual health
- personal safety.

Knowing where to seek help gives you control over your own health. This has benefits for understanding your health. It also makes you more resilient.

FIGURE 4.6 Health literacy skills can help you find the help you need.



Mental health

Mental health is related to emotions, thoughts and behaviours. People with good mental health are able to cope with general day-to-day events and challenges. They can work towards personal goals and function as effective members of the community. In contrast, people with even a minor mental health problem may struggle in some or all of these areas.

mental health related to emotions, thoughts and behaviours; includes anxiety-related problems, such as phobias, and mood (affective) problems, such as depression

FIGURE 4.7 There is help out there if you need it.

The most recent Australian Bureau of Statistics National Health Survey (2020–21) found that younger Australians aged 15 to 24 are more likely to be anxious and depressed. They are also more likely to binge drink and vape than older age groups. A range of factors contribute to adolescents' increased risk of mental health disorders. These include:

- stressors related to becoming an adult
  - becoming an adult
  - finding your identity
  - starting a career
  - leaving home
- stressors related to world problems
  - climate change
  - wars
  - wealth stress, such as the perceived inability to afford a house
- daily stressors
  - bullying, in person and online
  - social media
  - relationship issues.

Where to get help

As discussed in topic 3, it is important to know how to find reliable information if you or someone you know develops a mental health issue.

Two useful sources of information for adolescents about improving mental wellbeing are headspace and Kids Helpline.

headspace

weblink

headspace has an easy-to-use website that you can use to find information on a range of mental health disorders. The information is clear, concise and available for everyone. headspace also has centres you can visit for help in person.

Kids Helpline

weblink

Kids Helpline provides a range of advice on issues relevant to children and adolescents, including mental health. The website has an option for you to type in your age and choose the issue you need help with. Kids Helpline has also developed an app called 'niggle'. This app provides fast, real-time help with any issues you may be facing.

Visit the **headspace**, **Kids Helpline** and **niggle** weblinks in the Online Resources to explore these resources further.

Substance use

People use substances for a variety of reasons, such as:

- to experiment
- for enjoyment
- to overcome boredom
- to rebel against authority
- to dull emotional or physical pain
- to get away from their problems.

As discussed in topic 3, some common substances that people misuse include:

- alcohol and/or tobacco (including e-cigarettes)
- illicit drugs
- non-medically prescribed pharmaceutical drugs.

Use and misuse of these substances can result in a wide range of short-term and long-term health consequences, including a physical or psychological dependence on the substance or chronic health issues.

Where to get help

weblink

It is important to access as many accurate and reliable sources of information as possible to help you make the best decisions for your health. The **Alcohol and Drug Foundation** weblink in your Online Resources provides a lot of information on the effects of different types of drugs and the laws surrounding their use.

If you want to stop using alcohol or other drugs, or if you know someone who wants to stop or needs to get help, it is a good idea to talk to a doctor, health professional or drug and alcohol service. Some other services that you can access for support are given in table 4.1.

FIGURE 4.8 Your GP is a useful person to talk to if you need help with substance use.

weblink

TABLE 4.1 Reliable sources of support for substance use

Support services for substance use
• National Alcohol and Other Drugs Hotline • Family Drug Support • Stimulant Treatment Line • Opioid Treatment Line • Counselling Online 24/7 • Alcoholics Anonymous Australia • Narcotics Anonymous Australia • Quitline • Mensline Australia • Kids Helpline • Sobriety App • Lifeline

Healthy food choices

Healthy food choices mean having a balanced diet with a variety of carbohydrates, fats and proteins, including fruit and vegetables. What you eat is more important than how much you weigh when it comes to your risk of developing diseases such as type 2 diabetes, heart disease and obesity. Studies have shown that people who eat a healthy diet including whole grains, vegetables, legumes, fruits, nuts and seeds have a decreased risk of chronic diseases regardless of whether they are overweight or obese. Healthy eating is linked to lower levels of disease and better health overall.

Where to get help

If you want to improve your healthy food choices, a good first step is to talk to your GP. They can help you to find a dietitian or nutritionist who is trained to help you choose the correct foods to support your specific growth and development needs.

There are also various online tools to encourage healthy food choices. For example, the **Eat for health** website (see your Online Resources) provides nutrition calculators. These allow you to calculate your daily energy and nutrient needs and the recommended number of serves. You can also get information about what is in a serve and how to meet the nutrition requirements for your age and gender.

weblink

FIGURE 4.9 Fresh vegetables are an important part of a healthy diet.

A word of caution

A lot of the information about healthy food choices focuses on weight loss. It's important to be aware of the potentially harmful impacts of celebrity or fad diets on the healthy eating habits of individuals. These diets often involve the elimination of important nutrients from your diet. For example, the Keto diet eliminates carbohydrates from the diet. Because carbohydrates are the body's main source of energy, if they are removed completely, you will feel weak and tired.

Fad diets are also often only used for short periods of time, which makes them unsustainable in the long term. This can result in rapid weight gain once the diet is finished, which can have further negative impacts on a person's wellbeing.

Fitness and exercise plans

Australia's physical activity and exercise guidelines outline that children and young people should do at least 60 minutes each day of moderate to vigorous physical activity (i.e. the type of activity that makes the heart beat faster).

It doesn't have to be a full 60 minutes at once. It can be broken into several shorter sessions throughout the day (e.g. three 20-minute sessions). These guidelines are discussed in more detail in topic 9.

At least three days per week, children and young people should engage in vigorous activities and activities that strengthen muscle and bone. This could include:

- team sports
- bike or scooter riding

FIGURE 4.10 Scooting, climbing or other fun activities all count towards your daily exercise.

- swimming
- dancing
- running
- climbing
- swinging on monkey bars
- body weight exercises (push-ups, sit-ups)
- weightlifting (always check with a fitness professional about what is appropriate for your age)
- yoga or Pilates.

Many people are tempted to purchase expensive training gear and equipment to help achieve fitness results faster. Using health literacy skills, you can carefully evaluate whether the gear or equipment is worth the time and money. This can help avoid disappointment.

Where to get help

There are many reliable sources of free information and fitness plans available to you. Many fitness and exercise plans can be done with minimal equipment and may even incorporate the natural environment.

When starting a fitness or exercise plan, start slow and progressively build up your level of participation. This will help you maintain interest and avoid injury. You may need to try a lot of different activities to find those that suit your needs and interests. The **Health Direct** website is a useful starting point for physical activity ideas. This government website provides free, reliable, Australian health advice.

weblink View the **Live life, get active** weblink in your Online Resources to see what additional fitness and exercise activities you can add to your daily life.

Sexual health

Adolescence is a stage of life during which people may become sexually active. This means it is important to be educated about your sexual health.

Being able to answer the following questions will equip you with important sexual health information:

- What is contraception, how is it used and what protection does it provide against unwanted pregnancy and sexually transmitted infections?
- When should I get a sexual health check-up and what does it involve?
- How can I recognise the difference between a positive, loving relationship and a negative relationship?
- How can I seek help when I need it and who can I seek help from?

Topics 1 and 2 answer these questions in detail.

FIGURE 4.11 It's important to be educated about your sexual health before you become sexually active.

Where to get help

If you are sexually active you should visit a doctor every six months for a check-up, particularly if:

- you think you may have a sexually transmitted infection (STI)
- you have had unprotected sex
- a condom broke or was taken off during sex
- you or your partner have more than one sexual partner
- you've shared injecting equipment
- you're at the start of a new sexual relationship.

If you think you have an STI, follow these steps to take care of the infection and avoid future transmission. See also topic 2.

1. Go to your GP and get tested.
   - Some STIs do not have symptoms, so you could be unaware that you have one.
   - When you are sexually active, it is important to get regular STI tests, including before starting a new sexual relationship. If you have any symptoms, tell your GP.
   - If possible, tell them when you think you might have been exposed.
   - Ask what they are going to test you for, so that you can be informed about your own sexual health.
   - If you don't feel comfortable visiting your usual GP, look for a sexual health centre. Getting tested for an STI can be bulk billed and many clinics offer low-cost or free testing.
2. Complete a course of treatment.
   - If you are prescribed a course of antibiotics, finish the full course to avoid the infection recurring. If it occurs again, it could become resistant to treatment.
   - Follow your healthcare provider's advice.
3. Tell your partner.
   - It is vital that you tell your partner about the STI so they can seek treatment.
   - If you have had multiple sexual partners, you MUST tell all those partners.
4. Practise safe sex.
   - The only way to avoid getting an STI is to use a condom.

Figure 4.12 Use protection and get tested by your GP.

Family Planning Alliance Australia is Australia's reproductive and sexual health policy and advocacy hub. This hub provides links to sexual health clinics all over Australia. You can find the relevant website for your state or territory by using the **Family Planning Alliance** weblink in your Online Resources. Also view the weblink **Getting a sexual health check** to see how straightforward the process is.

weblink

4.2 ACTIVITIES

1 Ranking sources of help

Rank the following sources of help from most reliable to least reliable.

- Doctor
- Your best friend
- Your parents
- TV star
- Tik Tok influencer
- Teacher
- Your grandparents

Most Reliable

Least Reliable

2 Website assessment

weblink

a. Navigate to each of the following websites and services using the weblinks in your Online Resources.
   - headspace
   - Raising Children Network
   - Beyond Blue
   - Playsafe
   - ReachOut
   - NSW Health
   - Queensland Health
   - Head to Health
   - Australian Government Department of Health

b. Answer these questions to decide on the suitability of each website as an information source for young people.

   i. When you first see the website, does it look engaging? Does it draw the reader in?
   ii. Is the website easy to navigate? Is the information easy to find? Is the information up-to-date?
   iii. Does the website have a lot of information that requires extensive reading?
   iv. What type of health information does it focus on?
   v. Are there any activities on it?
   vi. Would you use it or not? Give your personal opinion.

3 Mental health resources

weblink

doc -###

a. Navigate to the **headspace** and **Kids Helpline** weblinks in your Online Resources.
b. Use the table below to critically analyse the effectiveness of these organisations in educating students about improving the mental health. You can also download a blank **Assessing mental health resources** template from your Online Resources.

Identify the website.		
What features or characteristics make the website engaging for young people?		
What is the purpose of the website?		
Are there a variety of ways to ask for help?		
How effective is the website in developing a better understanding of mental health for young people?		
What is your opinion of the website and its impact on young people?		

4 Media and the portrayal of sexual relationships

a. Designate one end of the room as ‘strongly agree’ and one end as ‘strongly disagree’.
b. Select three or four statements from the following list.

   i. *Sexualised images of women are much more common than those of men.*
   ii. *A person’s value comes from their sexual appeal or behaviour.*
   iii. *A person’s physical attractiveness is judged narrowly by how sexy they are considered to be.*
   iv. *Sexuality can be imposed on a person.*
   v. *Seeing sexually explicit material doesn’t harm anyone.*
   vi. *Young people should be protected from finding explicit sexual images on the internet.*
   vii. *It is easy to access pornography.*
   viii. *Music videos sexualise men and women equally.*
   ix. *Women watch as much pornography as men.*
   x. *Pornography reflects what real sex is like and what most people want.*
   xi. *Pornography is harmless fantasy. (It doesn’t affect people’s reality.)*
   xii. *Pornography is not a good sex educator.*

c. Read out one statement at a time and ask students to physically move to the position that best reflects their view. (You could set up this activity in a range of ways. For example, you could use a piece of rope or string, or draw a chalk line on the floor, and ask students to position themselves along the continuum from strongly agree to strongly disagree. Another option, depending on the space you have available, is to designate the four corners of the room as strongly agree, agree, disagree and strongly disagree.)

doc-39536

d. Ask the students to discuss why they moved to that position.

5 Use the **How do you support your health?** worksheet in your Online Resources to assess how healthy you are.

6 Health advertisements

weblink

doc-39537

a. Use the **Isagenix** weblink in your Online Resources and choose a product pack to analyse. You can use the eworksheet **Becoming a critical health consumer** as a template.
b. In groups of three, develop criteria that could be used to examine the claims made about the chosen health product.
c. Swap your criteria with another group.
d. Using the criteria provided to you by the other group, analyse the product's claims.
e. Discuss how effectively the criteria allowed you to critically assess the claims made.
f. Provide feedback on the developed criteria to the other group.

4.2 Exercise

4.2 Exercise

Select your pathway

LEVEL 1	LEVEL 2	LEVEL 3
1, 2, 3, 4, 5	6, 7, 8	9, 10

These questions are even better in jacPLUS!

- Receive immediate feedback
- Access sample responses
- Track results and progress

Find all this and MORE in jacPLUS

Check your understanding

1. Health information found on the internet is always reliable because it is filtered by trusted government sources. True or false?
2. MC In what ways can the media influence our health choices?
   A. The media can present products to highlight their health benefits.
   B. The media can present information to distract from any aspects of a product that may be harmful for our health.
   C. The media can present a product as more beneficial to health than it actually is.
   D. All of the above
3. Influencers on social media only advertise or endorse products they have tried and know to be effective. True or false?
4. MC Critical literacy skills are important for determining:
   A. quality, authority and information.
   B. quality, authority and accuracy of information.
   C. quality, assertiveness and accuracy of information.
   D. quality, analysis and authority of information.
5. Government departments aren't always good sources of information. True or false?

Apply your understanding

6. **Explain** the role the internet has played in changing people's health knowledge.
7. **Identify** the importance of developing critical literacy skills.
8. **Explain** how the media can influence people's health choices.
9. **Describe** four difficulties that young people face when trying to locate accurate health information.
10. **Evaluate** the connection between improved education and positive lifestyle choices.

LESSON
4.3 Health, wellbeing and First Nations Australians

LEARNING INTENTIONS

- Describe the health issues affecting First Nations Australians

ENGAGE

Think about how culture might affect your health. Brainstorm how your culture positively influences your health behaviours.

FIGURE 4.13 Does your culture influence the nutrition of the food you eat?

4.3.1 First Nations Australians' health

For First Nations Australians, health is a **holistic** concept that includes physical, social, emotional, cultural and spiritual wellbeing. Data from various sources can help us understand factors that particularly affect First Nations Australians' health. For example, the Australian Institute of Health and Welfare (AIHW) released a snapshot of Australians' health in 2020 which explores the health issues of First Nations Australians. All Australians should be aware of these health issues so that communities can be proactive in making sure that First Nations Australians have better access to health services and improved health outcomes.

holistic characterised by the treatment of the whole person, taking into account mental and social factors, rather than just the symptoms of a disease

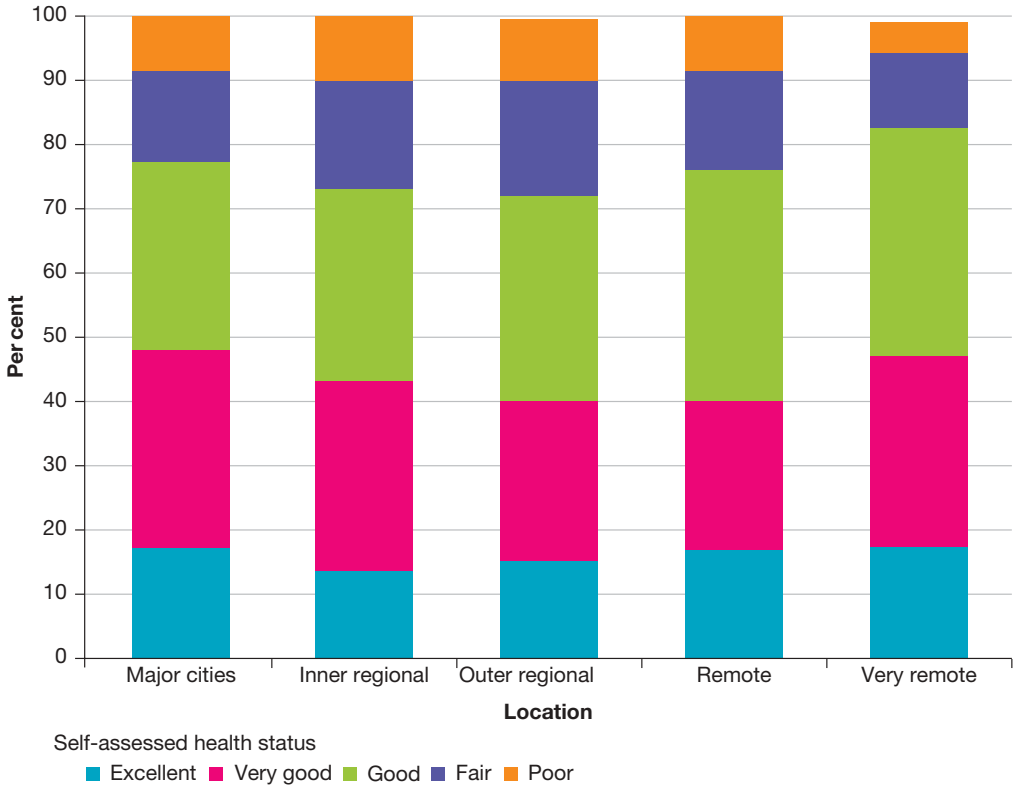
In 2018–19, 45 per cent of First Nations Australians rated their health as excellent or very good. While that is an improvement from the 2014–15 report, where only 40 per cent rated their health as excellent or very good, there is still a lot of room for improvement.

A strong connection to culture is a protective factor for First Nations Australians' health. Those living in remote areas were more likely to rate their health as good compared to those living in non-remote areas. This may reflect that remote communities can practise their culture more freely than urban and regional communities.

Nevertheless, many First Nations Australians experience poorer health than other Australians. They often die at much younger ages, with a life expectancy gap of up to 10 years compared to other Australians. In 2018–19, 31 per cent of First Nations Australian adults reported 'high or very high' levels of psychological distress, up from 27 per cent in 2004–05. First Nations Australians are more likely to have:

- mental health problems
- respiratory diseases
- cardiovascular disease
- diabetes
- chronic kidney disease
- trachoma
- rheumatic heart disease.

FIGURE 4.14 Self-assessed health status for First Nations Australians aged 15 and over, by remoteness, 2018–19.



Source: National Aboriginal and Torres Strait Islander Health Survey 2018–2019. https://www.aihw.gov.au/. Australian Institute of Health and Welfare. Licensed under CC BY 4.0.

4.3.2 Factors affecting health

Many First Nations Australians and their communities are strong and rich in their culture. However, a range of factors contribute to the poorer health outcomes of First Nations Australians, including socioeconomic status and social exclusion. These factors work together in a complex way to affect health, and they are influenced by the effects of colonisation and disruption to culture, the Stolen Generations, systematic discrimination and racism, and **intergenerational trauma**.

intergenerational trauma trauma that gets passed down from those who directly experience it to the next generations. This can negatively affect the health and wellbeing of the future generations.

Historical factors from colonisation, racism and discrimination have been linked with poorer health for First Nations Australians — in particular, mental health disorders (e.g. anxiety) and risky health behaviours, such as tobacco, drug and alcohol use. According to the Australian Aboriginal and Torres Strait Islander Health Survey (2018–19), over 30 per cent of First Nations Australians have avoided seeking healthcare due to cultural factors. Cultural factors include language barriers, lack of trust in the health provider and experiences of discrimination. Avoiding healthcare can increase the duration and severity of ill health and disease.

4.3.3 Examples of progress

Work is being done across the health sector to help First Nations Australians improve their health outcomes. Some examples of progress that has been made include:

- In the five years to 2020, 62 per cent of First Nations Australians had at least one culturally specific health check.
- First Nations primary healthcare provided 3.5 million 'episodes of care' in 2020–01.
- Of First Nations Australian youth aged 15 to 17, 85 per cent have never smoked.
- From 2003 to 2018, there was a 16 per cent decrease in the gap between First Nations Australians' **burden of disease** compared to that of other Australians.

burden of disease a measure of the impact of diseases and injuries

Let's now consider some of the health issues affecting First Nations Australians' health and wellbeing and the strategies already in place to address these.

Mental health

What is happening?

The high rates of anxiety and depression among First Nations Australians can be explained by the historical, political and social impacts of colonisation, discrimination and racism, as well as the impacts of the Stolen Generations — including grief and loss, separation from culture and intergenerational trauma. Health services can support First Nations Australians to improve their mental health by making sure the support they receive is culturally appropriate, competent and aware. An important part of this is increasing the number of First Nations Australian health professionals in the workplace.

What support is there?

The Aboriginal and Torres Strait Islander Lived Experience Centre promotes the voices of First Nations Australians and shares their stories. The aim is for First Nations Australians to help design and deliver culturally safe mental health and suicide prevention initiatives. You can learn more about this program by visiting the weblink in your Online Resources.

weblink

Respiratory diseases

What is happening?

Respiratory diseases include colds, asthma, pneumonia and chronic obstructive pulmonary disease. According to most recent statistics, around one-third of First Nations Australians have some type of respiratory condition, and respiratory diseases are responsible for 8 per cent of the total burden of disease.

What support is there?

In Queensland, there are specialised respiratory outreach services for First Nations Peoples living in rural and remote communities. These services raise awareness of respiratory diseases in remote communities. For more information, visit the **Indigenous respiratory outreach care** weblink in your Online Resources.

weblink

Cardiovascular disease and rheumatic heart disease

What is happening?

Cardiovascular disease (CVD) is the leading cause of death among First Nations Australians, and sadly takes many at a young age. CVD covers the following heart-related illnesses:

- coronary heart disease
- heart failure
- stroke
- peripheral vascular disease
- rheumatic heart disease.

Risk factors include smoking, physical inactivity, poor nutrition, being overweight or obese, high blood pressure, high cholesterol and diabetes.

To reduce the rate of CVD among First Nations Australians, there needs to be:

- more First Nations Australians health workers
- improved communication
- improved access to care
- culturally sensitive and integrated programs available across Australia.

FIGURE 4.15 Increasing the number of First Nations Australian health workers helps to improve culturally appropriate care.

What support is there?

St Vincent's Hospital in Sydney has developed a website and program that aims to improve cardiovascular health among First Nations Australians. Read about the **Aboriginal heart health** program using the weblink in your Online Resources.

weblink

Diabetes

What is happening?

There are three types of diabetes: type 1, type 2 and gestational diabetes.

Many First Nations Australians have type 2 diabetes. Diabetes can cause many serious health complications, such as heart attack, stroke, kidney failure, cataracts and nerve damage that can lead to amputation.

Statistics have shown that 7.9 per cent of First Nations Australians have diabetes. It is more common among females and in remote areas, and risk increases with age.

What support is there?

In 2021, Diabetes Australia and the National Diabetes Services Scheme launched their Back on Track campaign, aimed at encouraging First Nations Australians to get back on track with diabetes self-care. You can read more about the **Back on Track** campaign by visiting the weblink in your Online Resources.

weblink

Kidney disease

What is happening?

Kidney disease is a serious health problem for many First Nations Australians. Chronic kidney disease and end-stage renal disease is reported at much higher rates among First Nations Australians than among other groups in Australia.

What support is there?

Kidney Health Australia has a range of resources targeted at First Nations Australians, including storytelling resources and yarning consultations with First Nations Australians health professionals. You can access these resources via the **Kidney Health Australia** weblink in your Online Resources.

weblink

4.3.4 Diet and First Nations Australians

First Nations Australians have inhabited Australia for more than 65 000 years. This makes them the world's oldest continuous culture.

Before European colonisation in 1788, food supplies were sourced and maintained through First Nations Australians' deep knowledge of and close association with the land. Food supplies were managed with a variety of techniques and were influenced by the season and geographic location. Through their detailed knowledge of Country, First Nations Australians could identify the best sources of fresh water and understood when different food sources would be available, depending on the season. Food was varied and nutritious and provided a complete balanced diet.

- Foods such as grains and nuts, fruits and vegetables were collected and grown.
- Animals, including fish, were hunted and trapped.
- Honey was used as a sweetener. It was gathered from honey ants and the hives of native bees.

This diet was healthy but was severely disrupted by the negative impacts of colonisation. Their dispossession and displacement from Country stopped First Nations Peoples from being able to manage and access important food sources. Access to their usual fresh and nutritious foods was interrupted. This has led to negative impacts on health and has contributed to an increase in diet-related health problems among First Nations Australians today.

FIGURE 4.16 Finger limes are a popular and healthy native fruit, high in vitamin C. They have been used by First Nations communities on the east coast (living on Barunggam, Wakka Wakka, Bundjalung and Gumbainggir lands) for medicinal purposes for centuries (e.g. as an antibacterial agent).

TABLE 4.2 Food sources

Type of food	Examples	Information
Cereal foods	• Grass seed from clover fern • Many other seeds were also used.	• Ground to make flour. Flour was used to make bush damper.
Fruit and vegetables	• Berries, fruit, pods, orchids • Plant roots • Native mushrooms and truffles	• What was available depended on the season and region.
Eggs	• From ducks, emus, pelicans and other birds	
Meat	• Insects: larval stage of the cossid moth or witchetty grub and the Bogong moth, honey ants, scale insects and native bees and their honey • Animals: kangaroos, emus, eels, crocodiles, sea turtles, snakes, goannas • Birds: ducks, gulls and pelicans	• Many different meat sources were consumed, ranging from insects to larger animals.
Fish and shellfish	• Freshwater fish: perch, yabbies and mussels • Saltwater fish: many types	• Both fresh and saltwater fish were eaten.
Water	• From rivers, lakes, rock holes, soaks, beds of intermittent creeks and dew deposited on surfaces	

4.3 ACTIVITIES

Investigate a health issue

weblink

a. Visit the **Australian Indigenous HealthInfoNet** weblink in your Online Resources. Then, complete the following.

i. Choose two of the health issues listed in this lesson.

ii. Use the HealthInfoNet weblink to locate the 'Summary of Aboriginal and Torres Strait Islander health status — selected topics 2021'.

doc-39538

iii. Using the information in this summary, and across the website, answer the following questions. You can use the **First Nations Australian health issue** worksheet for a template.

What is the health issue?	
Note any interesting statistics you found.	
What are the risk factors for this health issue?	
What preventive measures are believed to help this health issue?	
Do you think the measures currently in place are effective? Why or why not?	
In the community you are living in, what support programs are in place for First Nations Australians? (You may need to do further research to answer this.)	

b. Working in groups of four, propose one community-based strategy that you believe could be implemented to improve the health of First Nations Australians.
Make sure you include:

- the name of the health issue
- who it targets, including gender and age if applicable (e.g. young men, pregnant women, over 65s)
- what the program will involve (e.g. a drop-in centre, bus visits, free child minding while attending health appointments, First Nations Australian medical professionals)
- why you believe it would be effective.

4.3 Exercise

4.3 Exercise

Select your pathway

LEVEL 1	LEVEL 2	LEVEL 3
1, 2, 3, 4, 5	6, 7	8, 9

These questions are even better in jacPLUS!

- Receive immediate feedback
- Access sample responses
- Track results and progress

Find all this and MORE in jacPLUS

Check your understanding

1. MC In 2018–19, how many First Nations Australians rated their health as excellent or very good?

A. 35%
B. 45%
C. 65%
D. 15%

2. MC A holistic concept of health includes what aspects?
   A. Physical, social, sport, dance, religion
   B. Physical, social, emotional, cultural, spiritual
   C. Physical, sport, mental, religion, culture
   D. Physical, sport, mental, feelings, culture
3. First Nations Australians living in remote areas are more likely to rate their health as good compared to those living in non-remote areas. True or false?
4. MC Which health issue is the leading cause of death for First Nations Australians?
   A. Diabetes
   B. Cancer
   C. Cardiovascular disease
   D. Kidney disease
5. MC What percentage of First Nations Australians have diabetes?
   A. 6%
   B. 5.8%
   C. 7.5%
   D. 7.9%

Apply your understanding

6. **Identify** the three types of diabetes.
7. **Explain** the impact of the Stolen Generations on the mental health of First Nations Australians.
8. **Explain** the likely impact of having First Nations Australian healthcare workers on healthcare accessibility for First Nations Australians.
9. **Describe** the factors that can lead to First Nations Australians avoiding healthcare. **Propose** strategies to overcome these factors.

LESSON
4.4 Strategies to increase personal safety

LEARNING INTENTIONS

- Identify and describe a variety of ways to keep yourself and others safe.

4.4.1 Strategies to stay safe

Harm-minimisation strategies are designed to reduce risk and minimise the potential harm that could occur to people engaging in all types of activities. **Harm minimisation** can be practised by individuals, groups, schools, governments and the private sector. This lesson looks at how harm-minimisation strategies can be used to increase personal safety.

harm minimisation refers to a range of public health policies designed to lessen the negative social and/or physical consequences associated with various human behaviours, both legal and illegal

ENGAGE

Using the following images, state what could be done in each situation to reduce the chance of being harmed.

FIGURE 4.17 Some health behaviours have negative impacts on your health and wellbeing.

Alcohol

Vaping

Social media

Staying up late

Junk food

In small groups, brainstorm the strategies you use in your everyday life to help avoid risk or injury to yourself or others.

4.4.2 Personal safety

As a young person, it is normal to want new experiences and challenges. During your teenage years you will explore your own limits and abilities and develop your own boundaries. At the same time, you will probably still be respecting the boundaries set by your parents or carers. Risk-taking and the sense of wanting to express your own personal values is part of developing your own identity and becoming an independent young adult. As discussed in topic 3, risk-taking is part of everyday life and can be negative or positive.

A teenager's brain doesn't completely mature until around the age of 25. This means the decisions made by teenagers are often driven by an emotional response rather than reasoning. Young people are aware of the consequences of their actions but are more likely to be influenced by the perceived rewards of the action. Think about a young person who is late for a party. They know the consequences of speeding, as they had to pass their driving test and they learned about it regularly at school. However, the 'reward' of getting to the party sooner may overshadow this knowledge and influence their decision-making. Because the parts of the brain that control decision-making and impulse control mature last, their decision to speed is affected more than it should be by their perception of a reward.

Use these tips to increase your personal safety around risk-taking.

FIGURE 4.18 Tips to increase your personal safety around risk-taking

Take your time	Before deciding, consider the pros and cons of your options.
Self-interrogate	After you've decided, think about why you chose that option. Did you choose it for the right reasons?
Create a support network	Regularly discuss aspects of personal safety with your family and friends. This will allow a shared understanding of what makes you feel safe. It can help you to make good decisions in the heat of the moment. You will also have people you can go to for help when things go wrong.
Know yourself	Develop an awareness of your own personal values. Avoid people who try to take advantage of or influence your values.
Know how to say no (when you want to)	Often it can be awkward to say no to your mates, even when you want to. But by being upfront, giving your reasons, suggesting other things to do or exiting the situation if you feel unsafe, you can help protect your own personal safety.

FIGURE 4.19 Learning how to say no can help you stay safe.

4.4.3 Good attitudes

There are general harm-minimisation techniques that can be used by all individuals to help avoid unsafe situations. The risk of harm can be reduced by thinking through a situation, investigating the situation or activity and planning your involvement well ahead of time.

Good attitudes towards personal safety and the safety of others should be adopted. These include:

- concern about your own health and safety
- concern about the health and safety of others
- careful consideration of safety rules and guidelines
- careful planning and preparation prior to the activity
- never assuming that 'it won't happen to me'
- open and honest communication with those around you.

FIGURE 4.20 Checking equipment carefully prior to starting an activity will reduce the risk.

4.4.4 Recognising an unsafe situation

Sometimes you might get a gut feeling that something is wrong, and you feel unsafe. It is important to acknowledge this feeling and recognise the potential for harm. In this way, you can then make a decision about whether to remove yourself and friends from the situation or to try to reduce the risk by taking positive action.

The following positive actions can be used to reduce risk in unsafe situations:

- *Assertiveness*. State your point of view clearly, but without being aggressive and without putting the other person down.
- *Conflict resolution*. Talk through a problem or situation so that both groups come to a mutual agreement without aggression or violence.
- *Planning and problem-solving*. Anticipate a risk or problem and decide on an action to solve it.
- *Refusal*. Assertively state 'no' if you do not wish to continue or be involved in an activity.

assertive being able to stand up for your own or other peoples' views or rights in a calm and positive way without being aggressive or submissive

4.4.5 Being assertive

As mentioned, often it is hard to say 'no' when you want to or need to. Friends may pressure you with comments such as 'one won't hurt', 'nobody will find out' or 'everybody does it'. There are many factors that make it difficult to say 'no' or assertively state your point of view. For example:

- It is easier to copy others than it is to think for yourself.
- You may want to impress your friends.
- You may feel like doing something wild or risky.

On the other hand, there are many good reasons to be **assertive** and say 'no'. Being strong enough and assertive enough to make your own choices takes practice. Positive self-talk can help you stand up to pressure and be more assertive. Examples of positive self-talk include:

- 'I can make my own decisions.'
- 'I am smart enough to think things through and understand the results of my actions.'
- 'Real friends will respect my right to make my own decisions.'

weblink View the weblink **How to say no to mates (when you want to)** in your Online Resources for further advice.

FIGURE 4.21 Being assertive is a valuable life skill.

4.4.6 Managing conflict

Conflict is a normal part of daily life and may occur in a range of settings, as shown in figure 4.22. Conflict occurs when two people, or groups of people, disagree or have different points of view. Conflict generally occurs when there has been a lack of communication. It can happen to anyone (see figure 4.23).

Unresolved conflicts may lead to:

- negative feelings
- breakdowns in relationships
- changes in peer groups
- distrust
- loss of employment.

Learn conflict resolution skills and be assertive to insist on communication aimed at reaching a resolution.

FIGURE 4.22 Places where conflict can occur

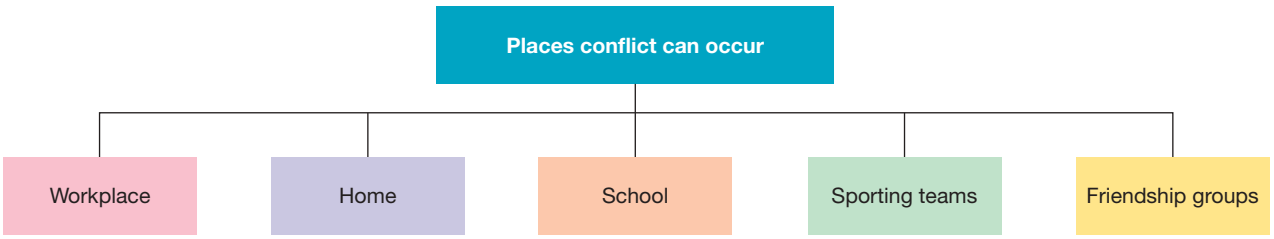
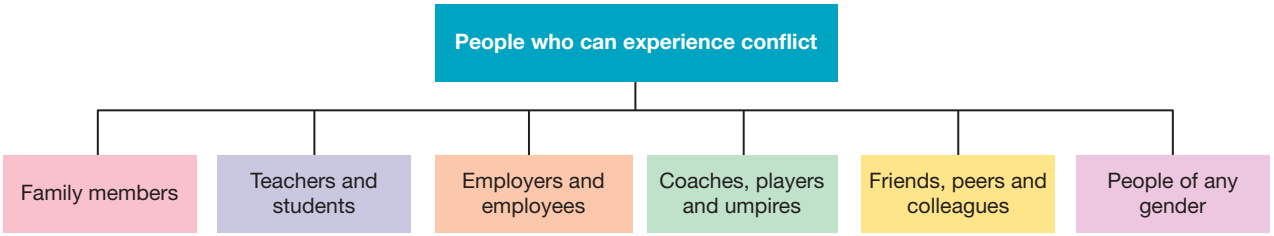


FIGURE 4.23 People who can experience conflict



Resolving conflict

Being able to recognise that a problem exists is the first step in **conflict resolution**. The problem must be discussed by both people or groups and a solution must be reached that both parties agree to. This has to be done without aggression, abuse or violence. The steps in resolving conflict are listed below.

conflict resolution when two or more people who have some disagreement work together to come to a solution

1. Explain your point of view clearly and concisely.
2. Listen carefully to the other person's point of view.
3. Ask questions and give answers in a calm manner to make sure both people clearly understand each other's point of view.
4. Consider the other person's feelings or point of view. Try putting yourself in their place.
5. Use positive body language, such as:
   - making eye contact
   - facing the other person
   - avoiding crossing your arms or legs
   - keeping a comfortable distance.

6. Use language that the other person understands, and use 'I' statements rather than 'you' statements. For example, state what you think or feel by beginning your sentence with 'I believe' or 'I feel' rather than 'you make me feel' or 'you don't care'.

DID YOU KNOW?

The WACO (Walk Away, Chill Out) campaign is aimed at giving youth an alternative to violence. This initiative was started by the Matthew Stanley Foundation. This foundation was created after Matthew, aged just 15, lost his life when he was bashed outside a teenager's party.

Coming to an agreement

One or more of the following outcomes will resolve a conflict:

- Realise that you were wrong or at fault and apologise.
- Accept the other person's apology and don't hold a grudge.
- Come to a compromise that suits both people.
- Agree to disagree, but don't continue to argue.
- Accept responsibility for the conflict and act to fix the problem.
- Be honest and direct.

FIGURE 4.24 Learning to express your opinions is important, but it can be difficult, even with friends.

4.4.7 Being pro-social

Pro-social behaviour is action intended to help other people, either individuals or communities. By helping others, being concerned for their wellbeing and protecting their rights, we improve our community. Examples of pro-social behaviour include donating blood and contributing to charity. Why people choose to behave in a pro-social way is not fully understood, but the idea of reciprocation or 'getting back what you give' is one possible reason. At school, you may have witnessed or been part of an instance of '**upstanding**'. This is where a person who is not directly involved in the situation steps in to help when a person is being threatened or bullied. This is an example of a pro-social behaviour that can happen at school.

pro-social a social behaviour that benefits others through methods such as helping, sharing, donating, cooperating and volunteering. Obeying the rules is also seen as pro-social behaviour.

upstander someone who sees or knows about bullying or other forms of violence that is happening to someone else and speaks up for the person or acts on their behalf

4.4 ACTIVITIES

1 Being assertive

a. Split the class in half.
b. Write your name on three sticky notes. These are now your 'talking chips'.
   When you want to speak, you must put one of your talking chips in the middle. Everyone must listen and be quiet while you are talking and you are only allowed to talk when it is your turn. If you want to rebut or debunk someone's idea you must put your name in the middle. (If everyone's talking chips have been used, return them and start again.)
c. Once your sticky notes are used, you cannot contribute to the discussion.
d. Practise being assertive with the following questions:
   i. What does being assertive mean?
   ii. What are some ways you can show your assertiveness?
   iii. Do you think being assertive is positive?

e. Consider the following statements. Decide how you could respond in an assertive manner.
   i. Tell them you lost it; they won't know any different.
   ii. I broke it, but I'm not telling anyone. She can take the blame.
   iii. Come on, graffiti is an art form and it doesn't hurt anyone.
f. Everyone in your group should state how they could respond to at least one of these statements. Then discuss if you agreed or disagreed with any members of your group.

2 Attitudes and beliefs

a. Make a list of six things you have a strong belief about. For example, state your belief or attitude towards racism, lying, graffiti, shoplifting, vaping, bullying and inappropriate online behaviour.
b. Beside each one, state what you do that matches that attitude or belief. For example, if you believe that bullying is wrong, you could give an example of a time you spoke up against bullying or were an active 'upstander'.
c. Identify any in your list that you do not take action on. Propose how you can more assertive in promoting your attitudes or beliefs about these issues.

3 Conflict resolution

Work with a partner to complete the following questions.
a. Describe a person you can communicate easily with. What is it about that person that makes communication easy?
b. Describe a conflict you have recently been through or are currently experiencing. It could be with a parent, friend, teacher or coach. You don't need to share this if you would prefer not to. Describe (in general terms) what you think the underlying issue was (e.g. a lack of communication or a misunderstood meaning).
c. Use your partner to help role-play a conflict-resolution discussion that might lead to solving the conflict. Refer to the advice provided in this lesson to help with your discussion.
d. Did you reach a resolution? If so, what was it? If not, what barriers prevented a resolution?

4.4 Exercise

4.4 Exercise

Select your pathway

LEVEL 1	LEVEL 2	LEVEL 3
1, 2, 3, 4, 5	6, 8, 9	7, 10

These questions are even better in jacPLUS!

- Receive immediate feedback
- Access sample responses
- Track results and progress

Find all this and MORE in jacPLUS

Check your understanding

1. MC What does being assertive mean?
   A. Being assertive is stating your point of view without putting others down.
   B. Being assertive is attacking another person's view while stating your own views.
   C. An example of assertive language is 'you're wrong, you never...'
   D. An example of assertive language is 'I believe the right thing to do is...'
2. MC What situations might you face in the next five years that will require you to be assertive? (More than one answer is possible.)
   A. University/TAFE
   B. Starting a full-time job
   C. Being captain of a sports team
   D. All of the above

3. MC Harm-minimisation strategies help to:
   - A. reduce risk and minimise harm.
   - B. increase risk and increase harm.
   - C. minimise harm and have fun.
   - D. ignore warning signs.
4. MC If you are in a situation in which you feel unsafe, you should take:
   - A. negative action.
   - B. snacks.
   - C. water.
   - D. positive action.
5. MC Good attitudes towards being safe may include:
   - A. concern about your own health and safety.
   - B. never assuming that 'it won't happen to me'.
   - C. open and honest communication with those around you.
   - D. All of the above

Apply your understanding

6. **Explain** two harm-minimisation practices you have used or may use in the future.
7. **Explain** the difference between being assertive and being aggressive. Make sure to give examples.
8. **Identify** three situations you may face in the next five years that will require you to be assertive.
9. **Identify** five harm-minimisation techniques you could use to help avoid risk or injury.
10. **Explain** what 'pro-social' means. Provide examples other than what are already given in this lesson.

LESSON
4.5 Review

4.5.1 What have I learned

- Health literacy is the degree to which individuals have the capacity to find, process and understand basic health information and services.
- Young people need health literacy skills to make good decisions about their health and wellbeing.
- In critical literacy, you need to consider the reason the information was created and how the information is presented by the author.
- One way to decide if health information is appropriate and accurate is to ask questions to clarify what you've been told, or what you have read.
- Not all of what we see online is necessarily true. All health information found from internet sources needs to be critically evaluated.
- Mental health relates to emotions, thoughts and behaviours. Mental health problems include anxiety and depression.
- Younger Australians are more likely to be anxious and depressed, binge drink and vape than older people, but there are lots of places to go for help.
- Mental health literacy helps people to better understand their own mental health, and it gives them the tools to improve their wellbeing.
- People use substances for a variety of reasons, but this has negative short- and long-term effects.
- There are many health resources to help with substance use.
- Health literacy is important when making healthy food choices and knowing what information is reliable.
- Fitness and exercise plans are important for your health, but they need to be suited to your fitness level and health goals.
- Health for First Nations Australians includes physical, social, emotional, cultural and spiritual wellbeing.
- Despite some overall progress, First Nations Australians continue to have high levels of ill health and a shorter life expectancy.
- There are health services and programs that specifically target First Nations Australians.
- Risk-taking is part of everyday life and can have positive or negative effects on people and property.
- Adolescents are more likely to take harmful risks because their brains are still developing.
- Making responsible decisions will minimise harmful risk-taking.
- Harm-minimisation strategies are designed to reduce risk and limit potential harm.

ESSENTIAL QUESTION REVIEWED

How do we know what sources of health information are reliable so that we can be guided to live a healthy life?

Evaluate your initial response to the essential question now that you have studied the topic.

4.5.2 Key terms

assertive being able to stand up for your own or other peoples' views or rights in a calm and positive way without being aggressive or submissive
burden of disease a measure of the impact of diseases and injuries
conflict resolution when two or more people who have some disagreement work together to come to a solution
credentials documents or other evidence that show a person's qualifications or identity — like a set of papers or cards that prove who a person is and what they can do
credible reliable; trustworthy

critical literacy a skill that involves questioning and examining ideas, and that requires you to analyse, interpret, evaluate and respond to the texts you read or listen to
harm minimisation refers to a range of public health policies designed to lessen the negative social and/or physical consequences associated with various human behaviours, both legal and illegal
health literacy the ability to find, read, understand and use healthcare information to make good health decisions and follow instructions for treatment
holistic characterised by the treatment of the whole person, taking into account mental and social factors, rather than just the symptoms of a disease
intergenerational trauma trauma that gets passed down from those who directly experience it to the next generations. This can negatively affect the health and wellbeing of the future generations.
mental health related to emotions, thoughts and behaviours; includes anxiety-related problems, such as phobias, and mood (affective) problems, such as depression
pro-social a social behaviour that benefits others through methods such as helping, sharing, donating, cooperating and volunteering. Obeying the rules is also seen as pro-social behaviour.
upstander someone who sees or knows about bullying or other forms of violence that is happening to someone else and speaks up for the person or acts on their behalf

on Resources

Interactivity Crossword (int-8999)

4.5 Exercise

4.5 Exercise

Select your pathway

LEVEL 1	LEVEL 2	LEVEL 3
1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 16	12, 13, 17, 18	14, 15, 19, 20

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Check your understanding

Identify whether the following statements are true or false.

Statement	True or false
1. Having good health literacy skills is only important for adults.	
2. You should always ask for a second opinion if you aren't quite sure.	
3. You should always believe what the media tells you about how to improve your health.	
4. Health for First Nations Australians is the same as for other Australians.	
5. First Nations Australians do not believe in holistic health.	

6. Harm minimisation increases risk.	
7. Being assertive means to get angry.	
8. Conflict resolution is a positive way to solve a problem.	
9. Helping other people is an example of being pro-social.	
10. Having a bad attitude may put you more at risk of danger.	

Apply your understanding

11. **Identify** decisions that young people might need to make when choosing health products and services.
12. **Outline** two questions consumers should ask when finding health information online.
13. **Explain** the role of critical literacy skills in evaluating health information and services.
14. **Discuss** how social media can influence our selection of health products and services.
15. **Discuss** the impact the TV and media can have on beliefs about physical health.
16. **Identify** services that help young people deal with their mental health.
17. **Explain** the concept of holistic health for First Nations Australians.
18. **Identify** two support services specifically aimed at First Nations Australians.
19. **Explain** the role of harm minimisation.
20. **Discuss** the reasons why some people take unnecessary risks.

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Online Resources

on Resources

Below is a full list of **rich resources** available online for this topic. These resources are designed to bring ideas to life, to promote deep and lasting learning and to support the different learning needs of each individual.

Topic PDF

4.1 Finding and using health information (tpdf-3592) ☐

Digital documents

4.2 Assessing mental health resources (doc-xxxx) ☐
How do you support your health? (doc-39536) ☐
Becoming a critical health consumer (doc-39537) ☐
4.3 First Nations Australian health issue (doc-39538) ☐

Video eLessons

4.1 Finding and using health information (eles-6101) ☐

Interactivities

4.5 Crossword (int-8999) ☐

Solutions

4.5 Answers: topic 4 ☐

Weblink

4.2 Healthy Active Kids ☐
Kids Health ☐
headspace ☐
Kids Helpline ☐
niggle ☐
Alcohol and Drug Foundation ☐
National alcohol and other drugs hotline ☐
Family drug support ☐
Stimulant treatment line ☐
Opioid treatment line ☐
Counselling online 24/7 ☐
Alcoholics anonymous Australia ☐
Narcotics anonymous Australia ☐
Quitline ☐
Mensline Australia ☐
Kids Helpline ☐
Sobriety App ☐
Lifeline ☐
Eat for health ☐
Health direct ☐
Life live, get active ☐
Family Planning Alliance ☐
Getting a sexual health check ☐
Raising children Network ☐
Beyond Blue ☐
Playsafe ☐
ReachOut ☐
NSW Health ☐
Queensland Health ☐
Head to Health ☐
Australian Government Department of Health ☐
Isagenix ☐
4.3 Aboriginal and Torres Strait Islander Lived Experience Centre ☐
Indigenous Respiratory Outreach Care (IROC) ☐
Aboriginal heart health ☐
Back on Track ☐
Kidney Health Australia ☐
Australian Indigenous HealthInfo Net ☐
4.4 How to say no to mates (if you want to) ☐

Teacher resources

There are many resources available exclusively for teachers online.

To access these online resources, log on to **www.jacplus.com.au**.

5 Strategies for a healthy sustainable community

LESSON SEQUENCE

5.1 Overview 201
5.2 Social, cultural and economic factors that influence health and help-seeking 202
5.3 Sustainable food to improve health and wellbeing 209
5.4 Connection to Country/place and health and wellbeing 218
5.5 Promoting health and wellbeing 223
5.6 Review 232

FIGURE 5.1 What responsibilities do young Australians have for their own health and wellbeing?

LESSON
5.1 Overview

Hey students! Bring these pages to life online

Watch videos

Engage with interactivities

Answer questions and check results

Find all this and MORE in jacPLUS

5.1.1 Health, community and sustainability

Your health and the health of those around you will be an ongoing issue throughout your life. Being healthy is not just about the food you eat or the amount of exercise you do. It also incorporates how you are doing mentally, socially and physically. How healthy you are will affect many areas of your life, so it's wise to take an interest now.

Regardless of where you live now or where you will live in the future, you will be part of a community. It is important for your health and the health of those around you that you are connected to this community and the environment in which you live. As **sustainable** living becomes more accessible, it will benefit your health and wellbeing to adopt a more sustainable lifestyle. An active and inclusive community is a healthy one.

sustainable able to be maintained at a certain rate or level (e.g. does not deplete our natural resources)

ESSENTIAL QUESTION

What proactive measures can I take to make sure that I can stay healthy and safe?

STARTER QUESTIONS

1. What does health mean to you?
2. Rate your health out of 10, with 1 being extremely unhealthy and 10 being as healthy as an elite athlete. Why did you give yourself that score?
3. Thinking about the environment you live in, how could it be healthier? (For example, if you live in an apartment, perhaps you could have more green space.)
4. What actions can you take to promote your own and others' health?

on Resources

Video eLesson Strategies for a healthy sustainable community (eles–6102)

LESSON
5.2 Social, cultural and economic factors that influence health and help-seeking

LEARNING INTENTION

- Identify how the social conditions in which you are born, live and work may influence your health and help-seeking.

5.2.1 Health and community

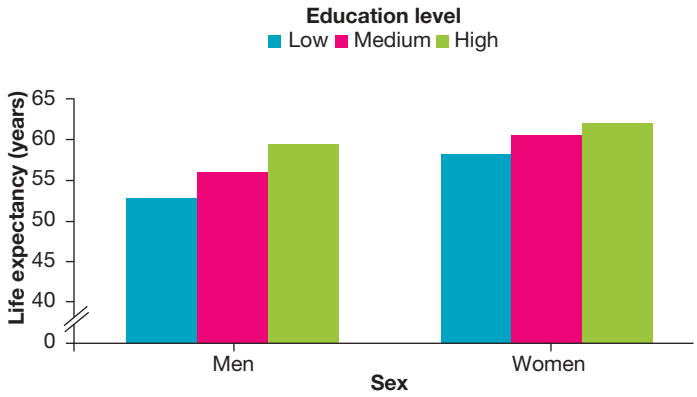
A number of factors can affect the health of people in the **community**. In this lesson, you will explore how the circumstances that people live in affect their health. You will look at why community health programs are so important and discover whether the communities you are a part of are healthy or not.

community a group of people living or working in the same place or environment and acting collectively in the areas of social values and with shared responsibilities

ENGAGE

What happens to life expectancy as education level falls? Discuss how education level might contribute to disease and death.

FIGURE 5.2 Education levels and life expectancy



Source: Based on data from Murtin F. *et al.* 2017. Inequalities in longevity by education in OECD countries: insights from new OECD estimates. OECD Statistics Working Papers 2017/02. Paris: OECD Publishing.

5.2.2 Modifiable and non-modifiable factors

The health of individuals and communities is affected by many factors. These include:

- where we live
- the physical environment
- genetics
- how much we earn
- education level
- our relationships with friends and family.

By increasing our understanding of the influences of these factors, it becomes clear that the health status of an individual is often determined by things that may or may not be within their control. Those factors that we

can have some control over are known as **modifiable factors**, while those we have little or no control over are known as **non-modifiable factors**.

modifiable factors those factors you can take measures to change

non-modifiable factors those factors over which individuals have little to no control

For instance, we may increase our education level by completing school and going on to further study through TAFE or university. This may then allow us to increase our financial income. Increased levels of education and higher levels of income are strongly linked to improved health outcomes.

But consider an individual who does not have access to a school nearby. They might have to travel long distances to attend classes, and they may not have access to specialist teachers for each subject. Instead, they may have to learn independently via distance education. When they finish school, they would probably need to travel for work, as well as travel to another town or city to do TAFE or university study. To do this, they need to be able to pay for transportation and accommodation.

From this example, we can start to see that what is modifiable for some is non-modifiable for others. Therefore, these factors exist on a continuum (see figure 5.4).

FIGURE 5.3 What types of factors affect your health?

FIGURE 5.4 Factors that affect our health can be modifiable and non-modifiable.

5.2.3 Social, cultural and economic factors that influence health

A range of factors influence the health of individuals. These can be grouped into social, cultural and economic factors (see table 5.1).

TABLE 5.1 Social, cultural and economic factors influencing health behaviours

Type of factor	Example	Influence on health outcomes
Social factors	Social support networks	Access to a range of trusted people is associated with better health. Support networks also provide a safe place to seek help.
	Peers/friends	Having a strong peer/friendship group can increase levels of belonging, which reduces the likelihood of loneliness, isolation and depression.
Cultural factors	Culture and religion	Customs, traditions and the beliefs of the family and community all affect health.
	Media	The media we consume can influence our health behaviours, including our health decisions, the foods we consume and the items we value and purchase.
Economic factors	Education	Good health is linked with higher education levels, less stress and higher self-confidence.
	Employment	People with access to a secure job are more likely to have better health outcomes.
	Income	Higher incomes are linked to better health. This could be due to increased access to healthier foods, safer housing and health services.

In addition to the influence of these social, cultural and economic factors on health outcomes, they can also have a dramatic impact on individuals' health behaviours and help-seeking strategies.

Social factors

Social factors, such as having a social support network, can have an enormous impact on the health behaviours of gender and sexually diverse young people. LGBTQIA+ people report higher rates of mental health problems and illnesses and have higher rates of suicide compared to other population groups. This is often a result of their experiences of discrimination, harassment and hostility in everyday life. With access to a strong social support network, LGBTQIA+ people will feel higher levels of belonging and connectedness to other individuals and their community. This may encourage help-seeking strategies and help to overcome any mental health problems and illnesses they may experience.

Cultural factors

An individual's culture may determine the activities they participate in, the foods they eat, the clothes they wear and the religion they follow. It can also strongly influence health behaviours and, therefore, health outcomes. Due to their religion, Muslims consider alcohol to be haram (forbidden), which leads to improved health outcomes and lower rates of the risk-taking associated with alcohol consumption. Professional athletes such as Bachar Houli (AFL) and Sonny Bill Williams (Rugby League and Rugby Union) have asked for alcohol advertising and logos to be removed from their team jerseys.

Being supportive of other cultures can also lead to higher levels of emotional and mental health and wellbeing for everyone. One example is when the Australian Men's Cricket team won the Ashes series in 2022 and the players stopped celebrating with alcohol to allow their teammate Usman Khawaja, who is Muslim, to comfortably join in the celebrations.

Cultural and religious beliefs can also influence how people approach sexual health. For example, in some cultures, talking about sex is taboo, which can lead to people feeling uncomfortable discussing their sexual health concerns. This may lead to negative health outcomes, such as untreated sexually transmitted infections.

Economic factors

Your income often determines the level of healthcare services and products you can purchase. One example is when some young people who get periods can't afford feminine hygiene products such as tampons and pads. As a result, they may feel the need to avoid school, university or even work when they are having their period. Because there is stigma associated with talking about menstrual health, many young people are embarrassed to talk about it or ask for help. This further affects health outcomes. Many state governments now provide free tampons and pads in public schools to reduce 'period poverty'.

The cost of healthcare can also be a major barrier to accessing mental health care. Some people may avoid seeking care due to concerns about the cost. Others may delay seeking care, which can lead to more serious health problems.

5.2.4 Support for marginalised groups in a community

It is important to remember that not everyone has equal access to the kinds of resources mentioned in the previous section. For **marginalised groups**, access to healthcare is complicated by factors such as:

- a lack of safe or adequate housing
- inadequate access to financial support, education or employment
- mistrust of the health system.

marginalised group people, or groups of people, who are pushed to the fringes of society by others in the community, and those who are different from the perceived 'norm'

Marginalised people include those who have been pushed to the fringes of society by others in the community, and those who are different from the perceived 'norm'. This includes First Nations Australians, cultural/ethnic groups, LGBTQIA+ people, people living in poverty and people with a disability.

Compared to people in the community who are not disadvantaged, marginalised and/or disadvantaged individuals/groups:

- have poorer physical and mental health and wellbeing
- are more likely to have chronic health problems and to report poor physical health
- have smaller social networks and fewer people they can rely on
- are more likely to receive income support (particularly the Disability Support Pension, Newstart unemployment benefits or Parenting Payment Single) and rely on this support for most of their income.

Ways to support marginalised groups within a community include:

- cultural sensitivity training within workplaces
- providing important health information in multiple languages
- advocating for the improvement of housing
- volunteering for community organisations, such as Meals on Wheels
- donating through official charities, such as St. Vincent De Paul's, or through community-based pathways, such as GoFundMe
- educating yourself on the history of these groups and the challenges they face.

FIGURE 5.8 Having doctors from culturally diverse backgrounds helps more people access healthcare because they feel comfortable knowing the person treating them will be culturally aware.

weblink Use the **Youth community health services** weblink in your Online Resources to examine a range of health-focused programs for young people and their families in the local community. Watch the **Growing up poor** Four Corners video to explore how growing up in poverty can affect various aspects of your life.

5.2 ACTIVITIES

1 Modifiable and non-modifiable factors

Draw your own continuum and place the following in order from modifiable to non-modifiable. Remember that your order may be different to someone else's. Just think about your own situation.

- Alcohol consumption
- Family history of heart disease
- The school you go to
- Your age
- Smoking or vaping
- Drink driving
- Education
- Access to healthcare
- Genetics
- Relationships with family and friends
- Where you live
- Visiting a doctor for a check-up
- Exercise habits

2 Young people taking action

Young people throughout Australia and around the world are taking action to improve both their own health and the health of people in their communities. Consider the following case studies.

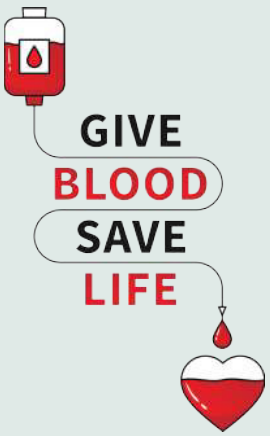
Case study 1: TABOO

TABOO was established to address the problem of period poverty. Did you know that 1 in 10 girls around the world can't afford period products? In 2016, best friends Isobel Marshall and Eloise Hall decided to design and start a business to help address period poverty. At the time, they were just about to start Year 12. Since then, the girls have grown their business, TABOO. They now sell period products in South Australia, create educational resources, start conversations about period poverty and run the Pad It Forward program. The Pad It Forward program allows people to purchase TABOO products on behalf of someone at risk of period poverty. The company then sends the products to people in need.

TABOO

Case study 2: Dent

In 2018, a Year 6 boy named Finlay was recognised for the contribution to his community made by his 'Dent' school project. The aim of the project was to design a way to make a difference in society. Finlay wanted to encourage people to donate blood. His initial aim was to get 20 parents and teachers at his school to donate, but that quickly grew to 40 people. It is estimated that Finlay's efforts helped to save 102 lives.



These are just two examples of young Australians identifying a health inequity and finding a way to help fix it.

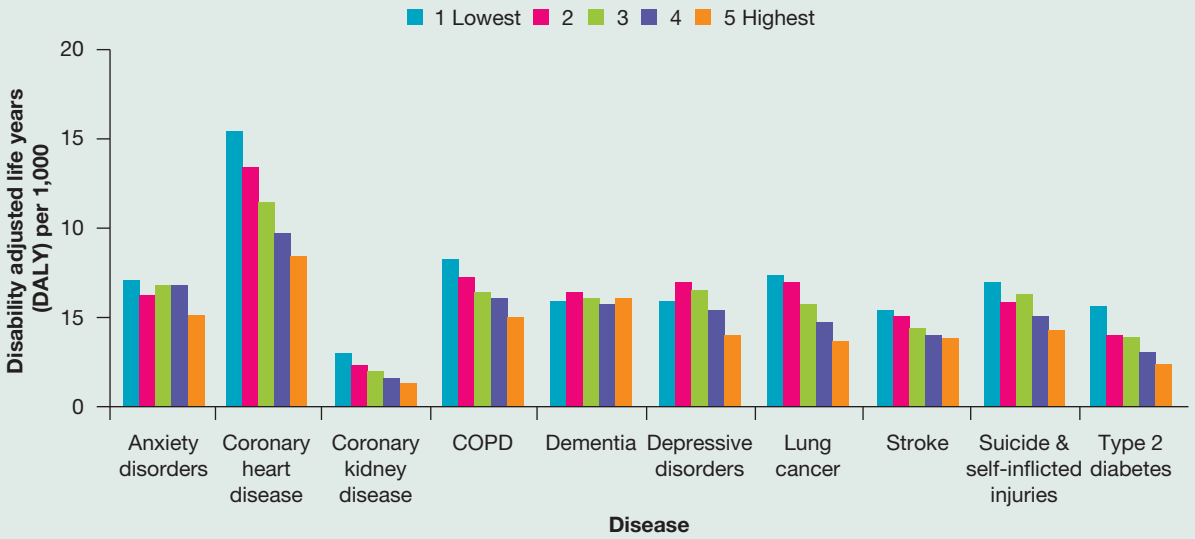
You can also make a difference. Complete the following steps to gather information to help you create your own fundraising campaign.

a. Brainstorm a list of fundraisers run at your school.
b. Look in your local newspaper archives to locate examples of young people in your area raising money for health-related charities.

c. Identify a health issue of concern to your school community. Find a charity that addresses that issue. Find out how you can donate to that charity.
d. Organise your own fundraiser at school. Ideas include a free dress day or a sausage sizzle.

3 Socioeconomic status and disease

In small groups, study the following table, then respond to the questions below. Note that '1 Lowest' refers to the lowest socioeconomic group, while '5 Highest' means the highest socioeconomic group.



Source: AIHW 2019a, *Australian Burden of Disease Study: Impact and Causes of Illness and Death in Australia 2015*, Australian Burden of Disease series no. 19, Cat. no. BOD 22, AIHW, Canberra.

a. Make a judgement about whether disease impacts socioeconomic groups equally.
b. Identify a trend you can see in the graph.

4 Health inequities

doc-39550

Complete the **Challenging health inequities** worksheet in your Online Resources.

5.2 Exercise

5.2 Exercise

Select your pathway

LEVEL 1	LEVEL 2	LEVEL 3
1, 2, 3, 4, 5	6, 7, 9	8, 10

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Check your understanding

1. MC Which of the following are socioeconomic factors that can influence an individual's health? Select all options that apply.
   - A. Where you live
   - B. Motivation to stay healthy and fit
   - C. Level of education
   - D. Income level
2. MC You now know that the circumstances someone lives in can affect their health. What can the government do to minimise the impact of this?
   - A. Provide adequate healthcare for all members of the community.
   - B. Promote health through education programs.
   - C. Provide easy access for all Australians to healthcare services, such as doctors.
   - D. All of the above
3. MC The health of individuals and communities is affected by:
   - A. genetics.
   - B. the physical environment.
   - C. education levels.
   - D. All of the above
4. MC Support networks and friendship groups are examples of which type of factor influencing health behaviours?
   - A. Social factors
   - B. Economic factors
   - C. Cultural factors
   - D. Societal factors
5. MC Which of the following strategies will NOT support marginalised groups?
   - A. Advocating to governments for improved living conditions.
   - B. Volunteering for local charities.
   - C. Perpetuating stereotypes of marginalised groups.
   - D. Educating yourself on the history of various marginalised groups.

Apply your understanding

6. **Identify** and **describe** two factors that can affect our health behaviours.
7. **Explain** why it is important to have an active and healthy social life.
8. **Evaluate** why marginalised groups may have poorer health than others.
9. **Identify** the aim of community health resources. **Evaluate** whether there is enough being done in your local area.
10. **Evaluate** the impact on your own health of the social, cultural and economic factors in your life.

LESSON
5.3 Sustainable food to improve health and wellbeing

LEARNING INTENTION

- Describe how you can apply the knowledge of sustainable living to your life, and propose how you can improve your environmental footprint.

5.3.1 Sustainability and your health

Just as there are social, cultural and economic factors that influence our health, our environment also affects our health. Living in a more environmentally sustainable way can help both your own health and the health of your community.

ENGAGE

Look at the infographic in figure 5.9. Choose the two statistics that surprised you the most. Then, answer the following questions.

- Why is this such a problem?
- What can we do to stop this problem?

Share your ideas with the class.

FIGURE 5.9 Food waste facts

Australia's food waste facts

- 7.6 million tonnes of food is lost or wasted every year — about 20 per cent of the food we buy is thrown away.
- Wasted food in landfill gives out a greenhouse gas called methane, a stronger pollutant than car exhaust.
- Throwing out food also means the money, water, land and effort taken to produce it has been wasted.
- We waste 18 per cent of the food we buy, and 70 per cent of that food is still edible.
- The hospitality industry wastes 65 per cent of food during food preparation.
- Around 20–40 per cent of fruit and vegetables are wasted before they even hit the shelf due to not looking 'perfect' enough for consumers.

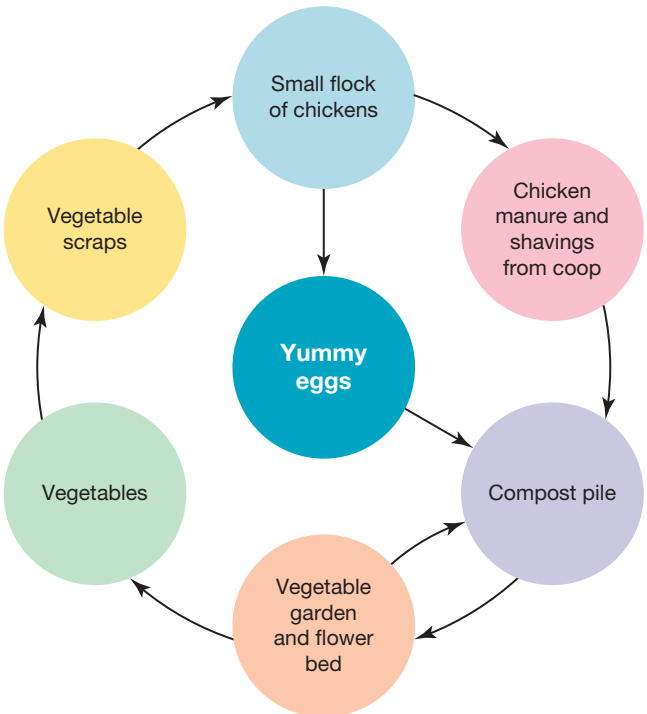
5.3.2 Healthy, active and sustainable lifestyles

Many of us are unaware of the impacts our current lifestyles are having on the natural systems that maintain our lives. Making positive steps to more sustainable food and lifestyle choices can help reduce future environmental problems. Small, easy changes to our current lifestyles can have positive effects on both the environment and the health and wellbeing of our community and ourselves.

FIGURE 5.10 Choosing local and organic foods is one way of making your lifestyle more sustainable.

According to the World Health Organization, 13 million deaths annually and nearly a quarter of all disease worldwide are due to environmental causes that could be avoided or prevented. Doing your part to take care of the environment can help to protect you and others from the serious health issues that can be made worse by an unhealthy environment (e.g. asthma and cardiovascular disease).

FIGURE 5.11 A sustainable lifestyle can include producing some of your own food.



DID YOU KNOW?

There are many ways to be sustainable. Recycle or reuse items, whether it's a cardboard box, an old toy or a woolly jumper.

5.3.3 How can you green your routine?

Including sustainability in your lifestyle involves becoming aware of the impact of your choices in terms of the foods you consume, the products you use and how you use energy. Focus on the small steps you can take at home, at school and in your community.

FIGURE 5.12 What small steps can you take to green your routine?

- Recycle — use, reuse and dispose of products properly.
- Compost to dispose of your waste — biodegradable products and food scraps can be used to improve the soil.
- Buy recycled products — if we reuse what we already have, less waste is created.
- Avoid single-use plastic for serving food — try recycled cardboard or bring your own containers.
- Use sustainable transportation — consider active and shared transportation options, such as walking, riding a bike and carpooling.
- Live a more healthy lifestyle — by taking actions to sustain the health of the environment, you make a positive impact on the health and wellbeing of those who live, work and play in it. Living a healthy life involves daily physical activity, eating healthy and nutritious food, reducing stress and staying connected to friends and family.
- Conserve energy and water — turn off your computer and the lights when you are not using them and repair leaking taps.
- Purchase environmentally responsible products — buy products that are recycled and biodegradable.
- Think about your food choices — make sustainable food choices and choose foods that are healthy and nutritious.

DID YOU KNOW?

If something is sustainable, it should be able to continue over a long period of time, and cause little damage to the environment. Another way of thinking about it is that, if it is sustainable, it can fulfill the needs of the current generation without harming the chance that future generations can have their needs met.

5.3.4 What is the environmental impact of your food?

Sustainable food is food that has been grown or produced with its environmental impact in mind. This includes:

- where the food was made or grown
- the materials it was made from
- its packaging
- the energy used to produce it
- how far it travels to get to you.

The distance food has to travel to get to you is known as **food miles**. Another consideration is how many resources were required to grow or raise the food. This is often referred to as the food's **carbon footprint**.

food miles the distance that food travels from where it is produced to where it is eaten

carbon footprint the amount of pollution, specifically greenhouse gas emissions, that is produced by something or someone

FIGURE 5.13 To help the environment, recycle, care for the earth and eat more plants (fruits and vegetables).

The food we eat can add more to our environmental footprint than our home energy use and choice of transport. There are different questions you can ask for different categories of food to evaluate how sustainable they are (see table 5.2). Thinking about this can help you support businesses that have a sustainable approach to growing, farming and producing food.

TABLE 5.2 How sustainable is your food consumption?

Food type	Questions to ask	Things to consider
Fruits and vegetables	• Is your produce in season? • Can you buy directly from the source at farmers' markets or co-ops? • Can you grow your own?	• Seasonal produce will be fresher, cheaper and have a lower carbon footprint (emissions). • Buying local produce supports local farmers and reduces the emissions produced by transportation and refrigeration.
Meat	• How are the animals treated? • Where has the animal come from (e.g. local, across the country, from another country)? • What kind of pasture was the animal raised on? The food an animal eats affects the healthiness of the meat.	• Sustainable farming should use rotational grazing to encourage the regrowth of grass and minimise soil compaction. • Look for free range or organic labelling on meat, poultry and eggs, as this means there has been minimal antibiotic use in these products. Consider alternative meat sources such as kangaroo, which have a lower environmental impact. • Consider a plant-rich or plant-based diet. However, always talk to your GP when making this change to make sure you are getting adequate nutrition.
Fish	• Is it MSC fish?	• Look for Marine Stewardship Council (MSC) certified fish. This tells you the fishery that produced the fish meets international sustainability standards.
Free-range	• Is it free-range?	• Free-range farming ensures animals have enough space to move around. • Organic certifications focus on the environment the animal has been raised in, that no pesticides have been used and that there has been no genetic modification.

Palm oil	• Does it contain palm oil?	• Palm oil is used in food products, cosmetics and cleaning products. This is a problem because forests are being cleared to create space for oil palm plantations. Fire is used to clear forest for plantations, which pollutes the air, and animals such as orangutans and elephants are losing their habitat. Palm oil can be hard to avoid completely because it is often listed as vegetable oil. However, if you can try to support products containing ethically sourced palm oil or those that do not contain any palm oil, that is the best move. The **Palm oil product guide** weblink in your Online Resources provides a list of everyday products that contain palm oil and whether it is sourced ethically.
Fair trade	• Is it fair trade?	• If a product has been certified as 'fair trade', this means the farmers and workers in developing countries that produced the product have good working conditions and are paid a fair price. It also means environmentally sustainable farming methods were used.

weblink

5.3.5 Sustainable eating

To eat more sustainably, think about what is local to your area, what can be grown in Australia and what is in season. Buying fresh produce in season means it will be fresher, cheaper and more sustainable.

FIGURE 5.14 Eating seasonal produce reduces demand for imported fruit and vegetables. This reduces food miles and the emissions created by transport.

It is also worthwhile considering how sustainable the meat you consume is. See table 5.2 for what to look for when checking if your meat is sustainable.

It is important to look at meat consumption because meat production not only produces greenhouse gases, but also water waste, single-use packaging and food waste. This all contributes to environmental degradation and climate change. This in turn could negatively affect Australia's food production, including the amount, quality and affordability of our food. Changing what type of meat is eaten can reduce our impact on the environment.

Prior to European colonisation, the consumption of kangaroo was common. Today, most of the meat available in supermarkets is farmed specifically for human consumption. This means that the animals are grown specifically for eating. They are often raised on farmland, which requires land clearing and limits the range of native plants, and the animals aren't always ethically treated. If you can afford to buy free-range meat, that is a more ethical and sustainable option.

FIGURE 5.15 Kangaroos are free roaming, so no land clearing is needed to produce kangaroo meat.

DID YOU KNOW?

In 2015, one study found that eating a vegetarian diet five days a week and limiting meat consumption to two days a week reduces greenhouse gas emissions and water and land use impacts of your diet by approximately 45 per cent.

In Australia, kangaroo meat is much more sustainable and better for the environment than other types of meat. Kangaroos are native to Australia; they eat native scrub plants and do not rely on grain production. They are also not farmed but hunted in the wild, which means less land clearing and destruction of habitat for farmland. Their production also does not require irrigation, fertiliser or pesticide use. They do not cause soil compaction or land degradation, like cattle or sheep do.

weblink

5.3.6 Other sustainable food choices

Reducing single-use plastic

Another important, but relatively easy to take, step is to avoid single-use plastics as much as possible. Did you know that in Australia alone, 2.7 million single-use or disposable coffee cups are thrown out every day. That adds up to around 1 billion coffee cups sent to landfill every year.

Try these simple tips to reduce your single-use plastic waste.

1. Go straw free. If you can't, buy yourself a reusable straw. You can now get reusable stainless steel, bamboo or silicone straws, as well as straws made from compostable materials, such as paper, pasta or rice. If your favourite café is still using single-use plastic straws, encourage them to switch.

FIGURE 5.16 Buy yourself a keep cup to reduce single-use coffee cup waste.

2. Take your own ‘keep cup’ next time you order a coffee, or have your coffee at the café.
3. Avoid plastic cutlery. Switch to reusable bamboo cutlery or buy yourself a travel cutlery set that you can take with you. Chopsticks are also handy when you are getting takeaway.
4. Buy a reusable cup or jar to take when you next want to buy a juice or smoothie. Every year, 500 billion disposable cups are used. That’s enough to go around the Earth 1360 times! Try to encourage your favourite café and your school to switch to eco-friendly compostable cups.
5. Next time you order takeaway, choose something that doesn’t come in plastic containers, like pizza.
6. Take your own container to the store and ask for the food to be put directly into it.

FIGURE 5.17 There are so many eco-friendly alternatives to single-use plastic.

Food miles

The length of the journey your food has travelled from where it was grown to where it is eaten is referred to as ‘food miles’. Food purchased from your local farmers’ markets or anything you grow at home won’t have high food miles. When you eat food that is out of season, it will have had a longer journey to get to you, which means it will have more food miles.

Products with higher food miles have a higher carbon footprint. Food that has travelled by air has typically created around 10 times more carbon emissions than a food transported by road.

It is also important to consider how far you travel to get your food. Obviously, some people cannot help having to travel long distances when they live far away from grocery stores. However, if possible, try to choose food sources closer to you to reduce the food miles and reduce carbon emissions.

FIGURE 5.18 How far did your food have to travel to get to you?

While you can't always track a product's food miles, and we can't stop importing food altogether, it has been suggested by many climate experts that cutting down on the meat and dairy in your diet is a good place to start. It is also a good idea to purchase only fruits and vegetables that are in season, and you could try growing your own. If you have leftovers, keep them and use them another day. As much as possible, avoid throwing things out — either by purchasing reusable or recyclable products, or by finding a use for old items (e.g. composting scraps, donating old clothes).

FIGURE 5.19 Choosing local produce or growing your own reduces carbon emissions.

5.3 ACTIVITIES

1 Evaluating your diet's sustainability

a. What actions can you adopt that promote a healthy, active and sustainable lifestyle? Talk to your parents about making green and healthy choices at home. Think about:
- Where does your food come from? What are the food miles of your average shop?
- Are your fruit and vegetables in season?
- What packaging does your food come in?
- What small changes would make your food more sustainable?

b. Once you have considered the questions above, challenge yourself to do one extra sustainable action each week.

FIGURE 5.20 Sustainability practices can include recycling, green energy, and planting and looking after our trees.

2 Eat your veggies!

Eating even one less meat meal a week can reduce the emissions impact of your food.

a. Choose one vegan and one vegetarian meal that appeal to you.
b. Cook these at home and report back to the class on the taste.
c. Discuss whether it would be challenging to incorporate one or two meat-free meals a week into your family's diet. Why or why not?

3 Share your learning

Working in pairs, make a presentation using Google slides, Canva or video-editing software. Your aim is to give the parents at your school some practical tips for choosing and serving food that has been produced sustainably.

5.3 Exercise

5.3 Exercise

Select your pathway

LEVEL 1	LEVEL 2	LEVEL 3
1, 2, 3, 4, 5	7, 8, 9	6, 10

These questions are even better in jacPLUS!

- Receive immediate feedback
- Access sample responses
- Track results and progress

Find all this and MORE in jacPLUS

Check your understanding

1. Adopting a sustainable lifestyle has positive impacts on the environment, but not on your individual health. True or false?
2. MC According to the World Health Organization, 13 million deaths occur annually due to environmental causes that could be avoided or prevented. What is an example of a sustainable lifestyle choice that could protect you and others from the effects of serious health issues?
   - A. Growing your own vegetables
   - B. Conserving energy and water
   - C. Recycling
   - D. All of the above
3. MC Which of the following are sustainable practices? Select all possible answers.
   - A. Recycling
   - B. Composting to dispose of certain food waste
   - C. Being driven to school
   - D. Conserving energy and water
4. MC If something is sustainable, it should:
   - A. last forever.
   - B. last for a few days.
   - C. fulfill the needs of the current generation, without compromising the needs of future generations.
   - D. fulfill the needs of the current generation at the expense of future generations.
5. It is illegal to do things that are not sustainable. True or false?

Apply your understanding

6. **Explain** why sustainability is important.
7. **Identify** two different ways you can make your everyday routine more sustainable.
8. **Identify** three sustainable ways to shop.
9. **Propose** alternative ways of packaging fruit and vegetables.
10. **Explain** the importance of food miles when thinking about sustainable food.

LESSON
5.4 Connection to Country/place and health and wellbeing

LEARNING INTENTION

- Explain how a connection to Country/place enhances the health and wellbeing of First Nations Australians, and describe the health and wellbeing benefits of maintaining traditional diets and health practices.

5.4.1 What does Country/place mean to First Nations Australians?

First Nations Australians maintain a spiritual connection with, and understanding and deep appreciation of, the land, and for over 65 000 years, they have managed and conserved it. The land owns First Nations Australians, not the other way around. Every aspect of their lives, including their health and wellbeing, is connected to it. Their cultures and spirituality are linked to the landscapes in which they live. Connection to Country and respect for Elders, as well as the **Dreaming**, are a key part of this. These factors are all major influences on First Nations Australians' health, and affect their attitudes, beliefs, decisions and behaviours.

Central to First Nations' cultures is the way land is treated and its health. Land sustains the lives of First Nations Australians in every way — socially, culturally, physically and spiritually. The stories that are passed through the generations are connected to the land, and maintaining this connection is essential to ensure that important knowledge is passed down to future generations. First Nation Australians' laws and lives originate in and are governed by the land. For information about the strong link between First Nations Australians' health and land management, access the **Land management** weblink in your Online Resources.

weblink

Ceremonial events help First Nations Australians renew their spiritual connection to the land and significant cultural sites. These sites are often called 'living museums', as they contain a rich history in which younger generations learn about those that came before them.

Every Australian should understand and respect the significance of the knowledge, culture and relationship with the land that First Nations Australians have. Our interest and respect will support First Nations Australian communities, and assist Australia in moving forward in the journey of reconciliation with its Traditional Owners.

Dreaming in First Nations Australian cultures, the time when the Earth took on its present form, and cycles of life and nature began. Dreaming stories pass on important knowledge, laws and beliefs. Dreaming is continuous (non-linear) – it is past, present and future.

5.4.2 First Nations Australians' traditional diets

For First Nations Australians, food provides an opportunity to reconnect to Country and culture through stories of language, growing and preparation practices, food cooking knowledge and enjoying meals together.

Most foods consumed in Australia today were introduced by European settlers or via immigrants years later. Due to climate change, many of our modern staples, such as wheat, soybean and barley, are suffering from lower yields due to increases in temperatures and more clustered rainfall.

As discussed in Topic 4, prior to European colonisation, First Nations Australians carefully cultivated and managed the land to provide sustainable sources of food. These foods are native to Australia, adapted to the Australian climate and provide a source of nutrition.

Working with the deep knowledge of First Nations Australians to cultivate these crops for consumption could lead to a more sustainable food source for Australians more broadly.

Many 'bush foods' are nutrient dense as well as sustainable. One example is the quandong.

This plant is used as both food and medicine. Not only is it high in antioxidants, but it also has more vitamin C than an orange and has higher levels of folate, magnesium, iron and calcium than blueberries. Other nutritious foods are shown in table 5.3.

FIGURE 5.21 The quandong

TABLE 5.3 Nutritious bush foods

Australian native		Instead of European variety
Warrigal greens		Spinach
Illawarra plum		European plum
River mint		Common mint
Native rice (grown in monsoon areas)		Common rice

Case Study: Using First Nations Australian bush medicine

Many people are using their knowledge of bush medicine to adapt and create their own products for retail sale. One such person is Vivienne 'Binyaarn' Hansen. She is a Noongar woman from Western Australia. She runs 'Binyaarns Bush Medicine', where she sells balms, tea bags and ointments.

FIGURE 5.22 Vivienne 'Binyaarn' Hansen

FIGURE 5.23 Binyaarns bush medicine

Aboriginal Bush Traders is another organisation that sells bush medicine products, as well as Australian native superfoods. It is a not-for-profit organisation that was started to provide assistance for First Nations Australians of the broader Darwin region. It aims to fight the effects of poverty, illness and economic disadvantage by helping First Nations people seek employment opportunities. In addition, Aboriginal Bush Traders provides education for Australians who may not know about these native foods.

5.4 ACTIVITIES

1 Bush foods

Investigate one native plant of interest to you. Explain the health and wellbeing benefits of this plant, and how the plant is used. For example, the plant may be high in vitamin C and be best eaten after steaming.

2 Developing our connection to nature

How can we develop our eco-identity and positive sense of wellbeing? First Nations Australians have a strong and enduring connection to Country. All Australians can benefit from time in and a connection to nature, to understand and respect First Nations Australian cultures and improve our connection with the Earth.

Ubirr in the Northern Territory is a First Nations cultural site, visited by thousands every year. The Bunitj, Manilagarr and Mandjurlgunj Peoples are the Traditional Custodians of this land. They have petitioned to have the site closed due to its sacredness.

Try the following:

a. Find out who the Traditional Custodians of the land and waterways where you live and learn are.
b. Are you aware of any local sites of significance for your First Nations communities? If not, find out.
c. Discuss why it is important to acknowledge Country and the Elders and Traditional Owners of your local area, and to respect and protect local sites of significance.
d. Participate in Dadirri, which means deep listening. See the **Dadirri** weblink in your Online Resources for more information. It is based on respect. It is inner quiet, still awareness and waiting. Go to a natural area near you (e.g. a forest, mountain or beach). Close your eyes and listen to the sounds of nature around you.

weblink

3 Your special place

a. Reflect on a place that is special to you, your family and your community. Consider how both written and visual language help you to express your feelings, attitudes and ideas about that place.
b. Create your own short story, poem or artwork that expresses the significance of your chosen place.

Include the following:

- a description of your chosen place and your relationship with it
- an explanation of why it is special to you, your family or community
- why you think it is important for all people to respect and protect this place.

c. After everyone in the class has presented their work, discuss the benefits to all Australians of developing meaningful connections to nature.

5.4 Exercise

5.4 Exercise

Select your pathway

LEVEL 1	LEVEL 2	LEVEL 3
1, 2, 3, 4, 5	6, 9	7, 8, 10

These questions are even better in jacPLUS!

- Receive immediate feedback
- Access sample responses
- Track results and progress

Find all this and MORE in jacPLUS

Check your understanding

1. MC For First Nations Australians, the land links directly to their:
   - A. culture.
   - B. spirituality.
   - C. history.
   - D. All of the above
2. MC The fruit quandong has high levels of:
   - A. vitamin D.
   - B. vitamin B.
   - C. vitamin C.
   - D. vitamin B12.
3. MC First Nations Australians pass on their knowledge, laws and beliefs through:
   - A. books.
   - B. Dreaming stories.
   - C. written histories.
   - D. formal classes.
4. MC First Nations Australians' ways of growing, cooking and eating are worth adopting more broadly due to their:
   - A. high nutrient value.
   - B. sustainability.
   - C. suitability for the climate.
   - D. All of the above
5. MC A native food that can be used instead of English spinach is:
   - A. gum leaves.
   - B. pig face.
   - C. warrigal greens.
   - D. river mint.

Apply your understanding

6. **Identify** the factors that are important for First Nations Australians' health and wellbeing.
7. **Explain** why all Australians should attempt to understand and respect First Nations Australians and their connection to the land.
8. **Explain** some of the potential benefits of the increased use of native plants for food and medicine.
9. **Identify** the ways in which First Nations Australians connect to Country.
10. **Propose** how we as a nation could improve our sustainability and increase our use of native foods.

LESSON
5.5 Promoting health and wellbeing

LEARNING INTENTION

- Identify how to keep yourself safe online.
- Describe actions to promote your own and others' mental health and wellbeing.

5.5.1 Being healthy offline and online

Being online can be fun and interesting. You can learn so much that you didn't know before. But it can also be risky. You need to know how to keep yourself safe. Promote the wellbeing of others online and offline, by being respectful and inclusive, and taking care of your mental health.

ENGAGE

Brainstorm with the class: Do you consider being online safe or unsafe? Why?

FIGURE 5.24 How protected are you on the internet?

DID YOU KNOW?

A study by the eSafety Commissioner in 2021 found that 44 per cent of young Australians reported having had a negative online experience, with 15 per cent having received threats or abuse online.

5.5.2 Staying safe when online

The internet is accessible to everyone. Be aware of the risks and know about tools to protect yourself and others when having fun online. Some common risks are listed below, along with tips to help you avoid the risks.

- Did you know that once you post something online, it is on there forever? Even if you delete a comment or photo, the data remains on the internet. That's why it is really important to *think* before you post. A good way to check is to think about whether you'd say it to someone's face or not.
- There are people who try to talk with children and young people online in an attempt to have sexual contact. This is called unwanted contact or grooming and it is against the law. They hide behind false names and pictures, and trick people into thinking they are someone they aren't. This is another good

reason to keep your accounts private and not publicly available. It's recommended to only have contacts you actually know, and block any contact that feels inappropriate or makes you feel uncomfortable.

- If you are not careful with your personal data, you can have your identity stolen. This is called identity fraud. If someone gets access to your password or accounts, they can gather information about you and steal your identity. They might steal your money, commit crimes under your name or use your name to create fake profiles and troll people online. Changing your passwords regularly is one way to protect against this. That is why so many websites require you to do this. Choose passwords that are hard to guess — don't use your birthday or pet's name!
- Internet trolls use social media to cause conflict or harm intentionally to an individual or group. The best response is to not respond. Report it and block them.
- There are people who pretend to be someone they aren't online, using fake or stolen profiles, to trick people into forming online relationships with them. This is called catfishing. The aim of the catfish is to convince their victim to give them money. Catfishing can happen anywhere online, but especially on dating sites. There have been reports of people stealing thousands of dollars from their victims this way. Again, the advice is to be careful of your privacy settings. Use common sense: if it sounds too good to be true, it probably is. Block and report them if you think it's happened to you. See the **eSafety Commissioner** weblink in your Online Resources for more information and resources.
- Sexting is when you use a mobile phone or computer to send, receive or share nude or intimate pictures/videos or sexual texts.

weblink

Constructive actions to take about sexting and cyberbullying are discussed below.

5.5.3 Sexting

As discussed in topic 2, sexting is when you use a device to send, receive or share nude or intimate pictures/videos or sexual texts. It isn't a crime if everyone involved is over 18 and has consented. However, sending or receiving an intimate image of someone under 18 can be illegal, even if it's of yourself! If you or the other person are under 18, it can be considered image-based abuse and you could be breaking the law. Once you send an intimate image, it is out of your control. Here are some actions to help if you need it.

FIGURE 5.25 Sexting can result in more than just sharing an image with someone you like.

If you sent an intimate image and now regret it, ask the person you sent it to to delete it (watch to make sure). If your image is shared online:

- Consider asking a parent or trusted adult for help. Ask the person who received the images to delete them. If you're under 18, you can report it to eSafety.
- Tell a teacher if the person who shared or posted it goes to your school.
- Untag yourself from the photo.
- Report the image to the platform so that it can be removed. eSafety has information on how to do this. If the platform has not removed it in 48 hours, you can report it to eSafety online.
- Report the person who posted it.
- Make sure you talk to someone you can trust, such as a friend, parent, counsellor or teacher.

If you get sent a sext:

- Delete it!
- Do NOT forward it to anyone.
- If the image sharing is unwanted and persistent report the image if it is online.
- Block the number or account.
- Tell the sender not to send you that kind of message or image any more.
- Report the sender to your phone company if they don't stop.

If you are asked by someone to send a nude:

- Know that you do not have to send intimate images just because others do.
- It is okay to say no. Even if it is your intimate partner who has asked or if they've sent you one already.
- Respond in a funny way by sending something else, like a meme, funny one-liner or a picture of some noodles or an animal.
- If you feel pressured, tell someone you trust.

5.5.4 Cyberbullying

Cyberbullying involves using technology to bully, harass or hurt someone. It can include:

- sending or sharing nasty or abusive messages or emails
- humiliating others by sharing embarrassing videos or images
- spreading rumours or lies online
- excluding others online
- sending threatening messages
- harassing others online.

It isn't your fault if you are being cyberbullied. Just remember you aren't alone. It isn't weak to get help; it is important that you get help. You will get through this!

FIGURE 5.26 People on the internet can hide behind their keyboard and be anonymously cruel.

Unlike face-to-face bullying, **cyberbullying** can be hard to escape. It may feel like it is happening 24/7. Information about you can spread across the internet quickly and you may not even know who is doing the bullying, as they can remain anonymous. Because of this, it can be hard to remove. That's why it's so important to report it and get help as soon as possible.

cyberbullying the use of electronic communication to bully a person, typically by sending messages of an intimidating or threatening nature

Action to take

- If you are being bullied online, don't respond back with something mean about them. You can use the app functions to hide or mute their comments while you think about what to do.
- Tell someone you trust, like a parent, friend, counsellor or family member.
- If you feel comfortable doing this, tell the person to stop and delete what they posted or shared.
- If the bullying won't stop, seek help. eSafety has lots of good advice in the weblink **eSafety: Someone is being mean to me online**.

weblink

If you see someone else being cyberbullied, report it. Do not share any bullying material with others or take part in the bullying. If it is safe to do so, tell the person doing the bullying that it is not okay. Reach out to the victim to check on them.

FIGURE 5.27 Bullying can make you feel really sad and down. Make sure you talk to someone about how you are feeling.

Figure 5.28 Tips to stay safe online

1	Do not share your address or location with anyone you don't know.
2	Do not give out your phone number.
3	Don't tell anyone you don't know what school you go to, your workplace or any sporting clubs you participate in.
4	Do not share your password.
5	Never give out your bank details to strangers.
6	Only accept friend requests from people you are actually friends with in real life.
7	Block people who are mean or unkind.
8	Think before you upload and share photos. Remember, it could be viewed by anyone.
9	Think before you write. Anyone can read what you write on the internet. Present yourself online how you would like to be seen in real life.
10	Never agree to meet someone you've only talked to online. If you really want to, take a parent and meet in a public place.
11	Keep sexting laws in mind when taking photos or sending and receiving nudes.

5.5.5 Strategies to improve mental health and wellbeing

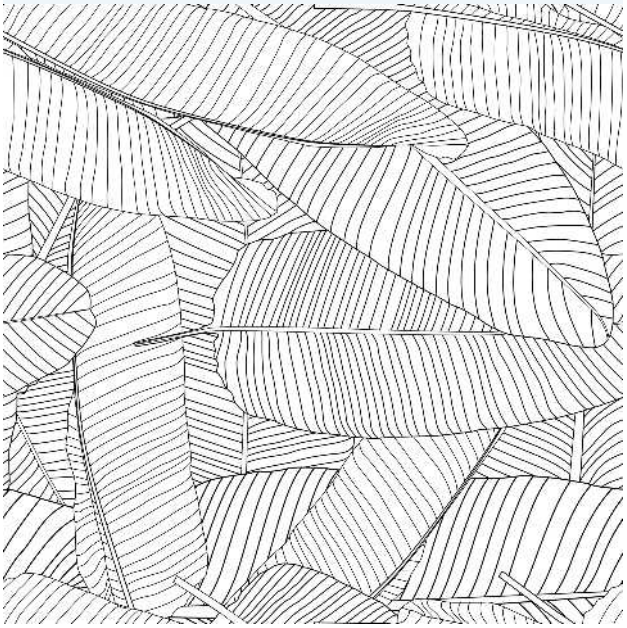
If you have good mental health you can work and study efficiently, connect well with others, be involved in activities in your community, and bounce back in response to life's changes and challenges.

We know that there are many aspects of life online and offline that can affect our mental health. Let's take a look at some strategies we can use to improve our overall mental health and wellbeing.

Express yourself

Find a creative way to express yourself. It might be painting, colouring, journaling, craft or music. It will be individual to you and allow you to express yourself in your own way without any labels.

FIGURE 5.29 Mindfulness colouring helps many people when they feel stressed.



Spend time in nature

You know about the importance of a connection to Country for First Nations Australians, but did you know spending time in nature is a wonderful way to help you feel connected to yourself. It is as simple as walking outside, putting your bare feet on the grass or laying back and watching the clouds go by.
Give it a try!

FIGURE 5.30 Spending time in nature is good for your soul.

DID YOU KNOW?

'Forest bathing' or 'shinrin-yoku' emerged in Japan in the 1980s as a treatment for burn out. It aimed to inspire the Japanese people to reconnect with and protect the country's forests.

FIGURE 5.31 Forest bathing is nature therapy.

Set goals

Set small goals for things you would like to achieve. It might be as simple as connecting with a friend for a smoothie and catch-up, or perhaps starting a new sport or hobby.

Talk kindly to yourself

Practise positive self-talk. Try not to criticise no yourself. Start writing down all the things you love about yourself.

FIGURE 5.32 Positive affirmations can reinforce positive self-talk.

Do the things you love

Focus on doing the things that are important to you and that you find enjoyment in. This might be reading a good book, skateboarding, going for a walk, cuddling your pet or spending time with friends and family.

Make sure you do things YOU love, not what other people want you to do.

Connect with people

Spend time with the people you love and that make you feel good.

Consider forming new connections. You may find that you make many new friends. Some ideas to try are:

- volunteering to help others
- starting a new hobby
- starting a new sport
- starting a new club like scouts or a gym.

FIGURE 5.33 Joining a new sports team can help you build new connections.

Stay active

Staying active can help you improve your mood and sleep, manage your stress and form meaningful connections with people.

Start small by going for a walk around the block, or join a new team or gym.

Get enough sleep

Sleep is important for effective functioning. If you are aged 14–17, you need to get 8–10 hours each night; if you are 18–25, you need 7–9 hours each night. Are you getting enough? Good sleep habits have been shown to improve mood, concentration and performance at school or work. Lack of sleep has been linked to depressive symptoms, such as irritability, suicidal thoughts and increased use of alcohol and drugs.

Sometimes, it can be hard to get enough sleep due to the environment you are in. For example, if you are stressed, have work commitments or are using alcohol or drugs, this may affect how much sleep you are getting.

FIGURE 5.34 Try these tips for healthy sleep. If you need more help, contact your GP.

Try mindfulness

Being mindful involves being aware of your thoughts and calming your mind to prepare your body for a good night's sleep.

Four mindful things you can try to improve the quality of your sleep are:

1. Turn your devices off. The blue light of devices can increase how alert your brain is and reduce the production of the hormone melatonin. Melatonin helps you to fall asleep.
2. Don't force sleep. Try to avoid forcing yourself to sleep; instead, try to relax and let sleep come naturally.
3. Try a body scan meditation. Start by noticing how your body feels and the sound of your breathing. When your attention wanders, gently bring your thoughts back to your body scan.
4. Try an app such as Calm, headspace, Smiling Mind or Insight timer. They have many sleep meditations that will help you drift off peacefully.

weblink

FIGURE 5.35 Meditation may help you sleep better.

5.5 ACTIVITIES

1 Seeking and giving help

a. Sometimes, the easiest people to talk to are your friends. Trustworthy friends will be your biggest allies and best support network. However, sometimes it is important to talk to a parent or trusted adult to get support. Think about the following questions:
- Why do you think it is a good idea to talk to and seek help from others?
- Do you think having a support group helps? Why?
- Who would you include in your support group? Do they come from different parts of your life?
- How do you think you could be a supportive friend to others if they experience bullying or harassment online?

b. Investigate places or people you could go to for support, such as family, friends, Kids Helpline or the eSafety website. There are some weblinks in your Online Resources to get you started. Compile a list of people or services you could contact if you were being harassed online or experiencing cyberbullying.

weblink

2 Designing a resource to protect people online

When Trisha Perdue was 14, she had already heard too many stories about people taking their own lives due to cyberbullying, so she did some investigating. It is known that a person's prefrontal cortex, which controls decision-making and impulse control, is not fully developed until adulthood. Therefore, a lot of teenagers make impulsive decisions that they later regret. Trisha thought maybe that's why teenagers don't realise the significance of what they are posting on social media. From this, her app 'ReThink' was born. Once installed on your phone, whenever you go to post something online, a message pops up that asks you to stop and rethink your decision. For example, 'Are you sure you want to post this?' or 'Is this really what you want to say to someone?'

weblink

You can learn more about this app via the **ReThink** weblink in your Online Resources.

From this example, you can see how one small idea from a teenager is helping with some incidences of cyberbullying.

a. Consider the following questions:
- **i.** What do you think you could do to speak up against cyberbullying?
- **ii.** What actions could you take to help reduce it?

b. In groups, brainstorm ideas for an app or ad campaign that you believe would effectively inform teenagers about the dangers of cyberbullying, sexting and/or harassment online. You can choose one of these issues or all three.

5.5 Exercise

5.5 Exercise

Select your pathway

LEVEL 1	LEVEL 2	LEVEL 3
1, 2, 3, 4, 5	6, 7, 9	8, 10

These questions are even better in jacPLUS!

- Receive immediate feedback
- Access sample responses
- Track results and progress

Find all this and MORE in jacPLUS

Check your understanding

1. MC When you post something online it stays there for how long?
   - A. 1 year
   - B. Forever
   - C. Until you delete your profile
   - D. Until the software updates
2. MC Other than being of age, what else do you need to have for sexting not to be illegal?
   - A. Evidence
   - B. Consent
   - C. A relationship
   - D. A mobile phone
3. MC What should you avoid in your passwords? Select all options that apply.
   - A. The numbers of your birthday
   - B. Your pet's name or your nickname
   - C. Changing it regularly
   - D. A random combination of letters and numbers
4. MC What strategies help to improve mental health and wellbeing?
   - A. Mindfulness
   - B. Sleep
   - C. Staying active
   - D. All of the above
5. MC Using technology to bully, harass or abuse someone is called:
   - A. harassment.
   - B. sexting.
   - C. cyberbullying.
   - D. catfishing.

Apply your understanding

6. **Identify** and **describe** two ways to keep safe online.
7. **Outline** what to do if someone sends you an intimate image.
8. **Explain** why cyberbullying is so harmful.
9. **Propose** three practical actions you can use to improve your mental health and wellbeing. **Evaluate** their potential effectiveness.
10. **Identify** and **describe** methods you could use to take a break from social media. **Explain** what benefits you think this would have.

LESSON
5.6 Review

Hey students! Now that it's time to revise this topic, go online to:

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5.6.1 What have I learned?

- Where you are born, where you live and where you work can all impact your health.
- Health factors can be both modifiable (changeable) and non-modifiable (unable to change).
- Social, cultural and economic factors all influence our health behaviours and help-seeking.
- Marginalised groups need extra support to feel safe accessing help. They are also more likely to have complex healthcare problems.
- The environment has a direct impact on our health and wellbeing.
- Worldwide, 13 million deaths and nearly a quarter of all disease are due to environmental causes that could be avoided or prevented.
- Recycling, composting and conserving energy and water are all ways you can green your routine.
- Food miles refers to how far your food has travelled to get to your plate.
- To ensure that you are eating sustainably, you should ask: Where was it grown? How was it grown? Is it local? Does it support local farmers?
- Look for organic or sustainable meat products where the farmers use sustainable farming practices, such as stock rotation.
- It is important to look for the MSC stamp on fish products. This shows that the fish you are buying has been sourced from a sustainable fishery.
- Before you buy something new, consider whether you actually need it. When you need to dispose of something, consider whether you can reuse or recycle it.
- Growing your own food is a great way to eliminate packaging.
- First Nations Australians have strong and rich cultures and deep spiritual connection to the land, which positively affects their health and wellbeing.
- Connection to Country enhances First Nations Australians' identity and sense of belonging.
- Taking an interest in and respecting First Nations Australians' connection with Country will assist Australia in moving forward in the journey of reconciliation and also help improve our sustainability practices.
- In 2021, 44 per cent of young Australians reported having a negative online experience.
- What you post online can stay there forever, even if you delete it.
- It is important to protect your digital identity and regularly change passwords to avoid identify theft.
- Sexting is a crime if you are under 18.
- If someone sends you an intimate image, you should delete it and report it.
- Cyberbullying is especially hard to escape as it can be 24/7 and spread very quickly.
- It is always important to get help if you are being harassed or bullied online.
- Regular physical activity, positive self-talk, regular sleep habits, mindfulness and social connection can all help improve your mental health and wellbeing.

ESSENTIAL QUESTION

What proactive measures can I take to make sure that I can stay healthy and safe?

Evaluate your initial response to this essential question now that you have studied the topic.

5.6.2 Key terms

carbon footprint the amount of pollution, specifically greenhouse gas emissions, that is produced by something or someone

community a group of people living or working in the same place or environment and acting collectively in the areas of social values and with shared responsibilities

cyberbullying the use of electronic communication to bully a person, typically by sending messages of an intimidating or threatening nature

Dreaming in First Nations Australian cultures, the time when the Earth took on its present form, and cycles of life and nature began. Dreaming stories pass on important knowledge, laws and beliefs. Dreaming is continuous (non-linear) – it is past, present and future.

food miles the distance that food travels from where it is produced to where it is eaten

marginalised group people, or groups of people, who are pushed to the fringes of society by others in the community, and those who are different from the perceived 'norm'

modifiable factors those factors you can take measures to change

non-modifiable factors those factors over which individuals have little to no control

sustainable able to be maintained at a certain rate or level (e.g. does not deplete our natural resources)

on Resources

Interactivity Crossword (int-9000)

5.6 Exercise

5.6 Exercise

Select your pathway

LEVEL 1	LEVEL 2	LEVEL 3
1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12	11, 13, 14, 17, 18	15, 16, 19, 20

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Check your understanding

Identitly whether the following statements are true or false.

Statement	True or false
1. It is important to help people from marginalised groups to live healthier and more active lives.	
2. Your education level has an impact on your health.	
3. Your culture can affect how healthy you are.	

(continued)

Statement	True or false
4. The quality of our environment has no impact on our physical health.	
5. The way that cows are raised has little to no impact on the environment.	
6. Fruit and vegetables should always be in packaging when sold.	
7. There are no practical strategies to improve mental health and wellbeing.	
8. Food and the land provide spiritual connection and are important to First Nations Australians' health and wellbeing.	
9. Sexting is only a crime if you are under 18 and/or you do not have consent.	
10. There are actions you can take to fight cyberbullying.	

Apply your understanding

11. **Outline** the factors that influence health. **Explain** how they influence health behaviours.
12. **State** an example of how economic factors affect health access.
13. **Describe** the role of sleep in promoting mental health and wellbeing.
14. **Explain** how you can live more sustainably.
15. **Describe** how what you eat affects your environmental impact.
16. **Explain** the importance of the connection to the land for First Nations Australians.
17. **Outline** the ways your culture can affect your health.
18. **Identify** three ways to keep safe when using the internet.
19. **Explain** when sexting is illegal and when it is not.
20. **Describe** the two ways to take action on cyberbullying.

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Online Resources

on Resources

Below is a full list of **rich resources** available online for this topic. These resources are designed to bring ideas to life, to promote deep and lasting learning and to support the different learning needs of each individual.

Topic PDF

5.1 Strategies for a healthy sustainable community (tpdf-3593) ☐

Digital documents

5.2 Challenging health inequities (doc-39550) ☐

Video eLessons

5.1 Strategies for a healthy sustainable community (eles-6102) ☐

Interactivities

5.6 Crossword (int-9000) ☐

Solutions

5.6 Answers: topic 5 ☐

Weblink

5.2 Youth community health services ☐
Growing up poor ☐
5.3 Palm oil product guide ☐
Environmental impact of meat ☐
5.4 Land management ☐
Dadirri ☐
5.5 eSafety Commissioner ☐
eSafety: What should I do if I'm being bullied online ☐
Calm app ☐
headspace app ☐
Smiling mind app ☐
Insight timer app ☐
eheadspace ☐
Kids Helpline ☐
Lifeline ☐
headspace locations ☐
ReachOut online community ☐
ReThink ☐

Teacher resources

There are many resources available exclusively for teachers online.

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PART

2 Movement and physical activity

TOPIC SEQUENCE

6 Proficiency of movement 238
7 Participation, collaboration, teamwork and fair play 286
8 Movement concepts and strategies 328
9 Physical activity plans for fitness, health and wellbeing 348
10 Understanding how the body moves ..... online only
11 Nutrition for good health ..... online only

6 Proficiency of movement

LESSON SEQUENCE

6.1 Overview 239
6.2 Classifying skills 240
6.3 Skill acquisition 246
6.4 Factors affecting skill acquisition 250
6.5 Refining skills using biomechanics 254
6.6 Transferring, training and adapting skills 265
6.7 Appraising movement proficiency 272
6.8 Review 281

FIGURE 6.1 All sports that we play require us to use our manipulative and movement skills.

LESSON
6.1 Overview

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6.1.1 Movement, skill and proficiency

There is a strong link between proficiency of movement and the quality of your performance. The fundamental skills you learn as a child lead to the more complex skills you need to complete specialised activities in a skilful way. Practice, feedback using performance measures and a knowledge of biomechanics can all help you build skills and improve your technique.

ESSENTIAL QUESTION

How can I improve performance?

STARTER QUESTIONS

1. What factors influence skill acquisition?
2. How do you move from fundamental to specialised and advanced skills?
3. What factors affect skill acquisition?
4. How can biomechanics maximise skill performance?
5. How can skills be transferred and adapted to different situations?

on Resources

Video eLesson Movement, skill and proficiency (eles-6103)

LESSON
6.2 Classifying skills

LEARNING INTENTION

- Describe different types of skills and categorise skills based on the type of movement, predictability of the environment and movement precision.

ENGAGE

Fundamental movement skills are the building blocks for more complicated or sophisticated movements. Children learn to crawl, walk, run, skip, throw, catch, bounce, hit and jump. These actions are called the 'basic skills'. Basic skills lead to the more specialised skills required in games, dance, gymnastics and other sporting and recreational pursuits.

In groups, link each of the following basic skills to more complicated ones. For example, a more complicated skill involving throwing could be a tennis serve or a basketball lay-up. (You might like to use the **Basic skills** worksheet in your Online Resources to complete this task.)

doc-14827

Basic skills are:

- throwing
- crawling
- skipping.

FIGURE 6.2 Rock climbing involves a number of different skills.

6.2.1 Building on basic skills

All advanced skills and techniques in sport evolve from the fundamental movement skills developed during childhood and adolescence.

The fundamental movement skills include:

- balancing
- dodging
- catching
- running
- skipping
- kicking
- jumping
- bouncing
- striking.
- hopping
- throwing

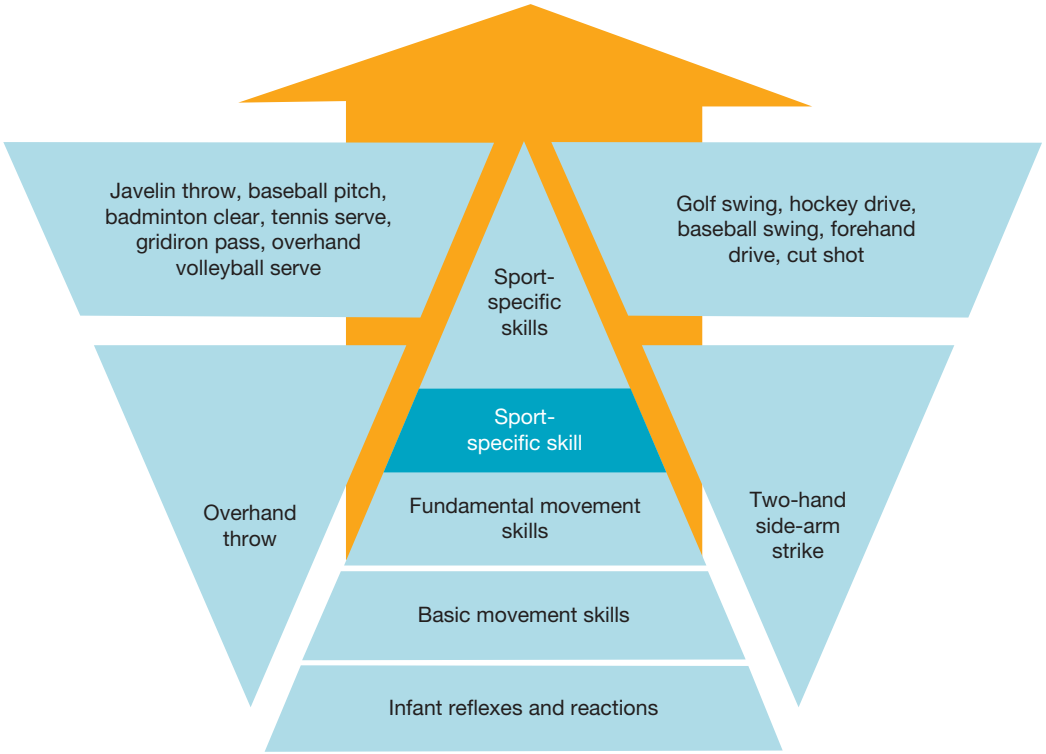
Fundamental movement skills can be categorised into three groups: body management skills, locomotor (moving) skills and object control (manipulative) skills.

If these skills are mastered, it can lead to increased opportunities to be involved in physical activities. For example, if you can throw and run successfully, you are more likely to participate in physical activities like European handball, netball and basketball. If you can master striking, you are more likely to be successful in sports like lacrosse, hockey, tennis, cricket and baseball.

DISCUSS

What basic skills form the foundation for rock climbing?

FIGURE 6.3 Fundamental movement skills instruction and its effect on the performance of sport-specific skills



6.2.2 Specialised sporting skills

Specialised sporting skills are found in a wide variety of games and sports played throughout the world. Moving from the fundamental skills to these more specialised skills involves a process similar to putting together building blocks. The fundamental skills are the foundations on which more specialised skills are developed. For example, the catch, strike and overarm throw form the basis of the more specialised sport-specific skills employed in cricket, baseball and softball.

FIGURE 6.4 The relationship between fundamental movement skills (overarm throw) and sport-specific skills

6.2.3 Classification of skills

To learn and improve skills, it is important to understand the different classifications of skills. A common classification is to consider skills as either closed or open. Closed and open skills represent the end points of a continuum, as shown in figure 6.5.

FIGURE 6.5 The skills classification continuum ranges from closed skills to open skills.

Closed skills

Closed skills are performed in an environment that:

- is stable and predictable
- has internal timing, so the performer has control over the timing and speed of the skill
- has limited inter-trial variability — that is, each time the skill is performed, it is very similar or the same. This allows the performer to plan their movements in advance.

closed skills skills performed in a stable and predictable environment. They allow the performer to plan their movements in advance.

Examples of closed skills are a golf swing, a gymnastics routine, taking a free throw in basketball and swimming in a pool. Closed skills can usually be mastered more easily because the environment is very predictable and learners can focus on the technique of the skill. Success is a matter of repeatedly practising the movement until the skill is learned.

Open skills

An **open skill** is performed in an environment that:

- is variable and unpredictable
- has external timing, because of the greater impact of external factors (e.g. teammates and opponents)
- has increased inter-trial variability because it is performed in a constantly changing environment. Performers need to be aware of these changes and adjust their movements to match.

open skills skills performed in an environment that is variable and unpredictable; usually externally paced and performed in a constantly changing environment

Examples of open skills are batting in cricket, softball or baseball, and passing in football, netball or hockey.

Open skills are often more difficult to learn because more decisions need to be made before performing the skill. For example, receiving a pass in netball requires you to make decisions on:

- where to move to receive the ball
- at what height and speed the ball will come at you
- where your opponent will be
- what you will do when you receive the ball.

When learning skills, it may be possible to 'close' the skill down, then gradually 'open' the skill over time. Using netball as an example, passing and catching the ball can be done in a closed environment by passing it to a stationary player. When that is mastered, you can open the skill by receiving the ball on the move, then adding token opposition, followed by full opposition, a lead-up game and, finally, a full game.

FIGURE 6.6 Taking a contested mark in Australian Rules football is an example of a skill that is closer towards the open end of the continuum. Teammates, opposition and the weather can affect skill performance.

FIGURE 6.7 Taking a penalty shot is an example of a skill that is closer to the closed end of the continuum.

Discrete, serial and continuous skills

Another method of classifying skills is based on how the timing of the movements is organised. Skills classified in this way are referred to as discrete, serial or continuous.

Discrete skills involve brief movements that have a distinct beginning and end. Examples include throwing and kicking a ball.

Sometimes, discrete skills are performed in a sequence to form more complicated actions. These types of skills are classified as **serial skills**. The duration of serial skills is longer, and each individual movement in the series has a definite beginning and end. However, the order of the elements that make up the total skill is often important to performance success. Performing a gymnastics routine is an example of this. Such skills are best learned by breaking the skill down into its parts and then linking them back together.

Continuous skills have no distinct beginning or end. These skills or movements are often repetitive or rhythmic in nature and may continue for several minutes. Examples include running, cycling and swimming.

discrete skills skills or movements of brief duration that have a distinct beginning and end

serial skills series of discrete skills strung together to form a more complicated action

continuous skills skills that have no distinct beginning or end; such skills or movements are often repetitive or rhythmic in nature

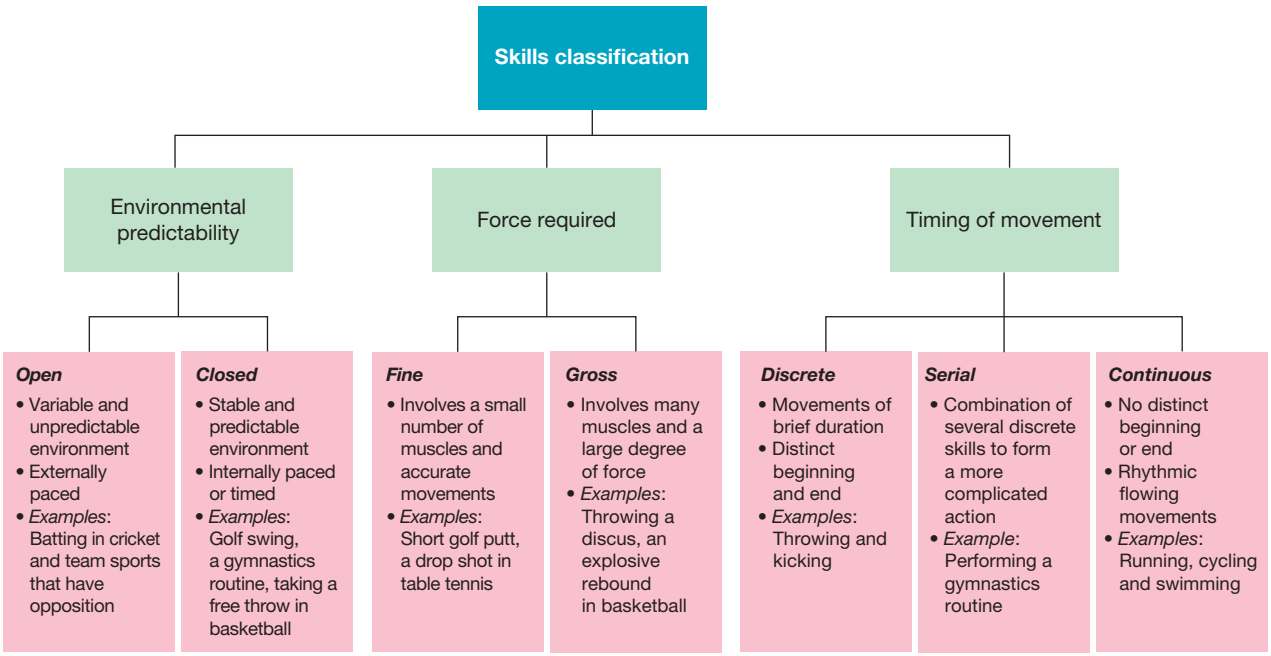
gross motor skills movements involving the use of large muscle groups that result in a coordinated action

fine motor skills delicate, precise movements that engage the use of small muscle groups

Fine and gross skills

A final way of categorising skills is based on the degree of muscle force required for a successful outcome. At one end of the spectrum, some skills require the involvement of all muscles, activated by strong and continuous messages sent via the nervous system. These movements are referred to as **gross motor skills**. Examples include lifting a heavy weight and throwing a javelin. Conversely, some sports require the use of few muscles, activated by a small number of nervous impulses. These skills are often required when accuracy is more important than force production. These are referred to as **fine motor skills**. Examples of fine motor skills in sports include throwing a dart, lining up a shot in billiards and notching an arrow in archery.

FIGURE 6.8 Summary of skill classifications



It is important to understand the classification of skills, as the type of skill can affect how we learn and practise it.

6.2 ACTIVITY

a. Create a continuum with closed skills at one end and open skills at the other.
b. In pairs, discuss where each of the following would sit.
c. Give reasons for your answers.

- 100-metre sprint
- Archery
- Marking in football
- Motor car racing
- Receiving a pass in netball
- Serving in tennis
- Vaulting in gymnastics
- Tenpin bowling

6.2 Exercise

6.2 Exercise

Select your pathway

LEVEL 1	LEVEL 2	LEVEL 3
1, 2, 3, 4	5, 7, 8, 9	6, 10

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Check your understanding

1. Fundamental movement skills are the building blocks of all other movement skills. True or false?
2. MC The variable that determines whether a skill is open or closed is:
   - **A.** the amount of force required.
   - **B.** whether or not the skill has a distinct start and end.
   - **C.** how similar the repetition of each skill is.
   - **D.** All of the above
3. MC A gross motor skill:
   - **A.** requires a large amount of force.
   - **B.** requires a high level of accuracy.
   - **C.** is a sequence of distinct skills.
   - **D.** is unpredictable and has external timing and increased inter-trial variability.
4. MC A discrete skill:
   - **A.** has a distinct beginning and end.
   - **B.** is a series of discrete skills completed in a sequence.
   - **C.** is repetitive or rhythmic.
   - **D.** involves a pattern of complex movements.
5. MC Which of the following skills can be described as a sport-specific, gross, serial and closed skill?
   - **A.** Jumping
   - **B.** Hitting a 6 to win a game of cricket
   - **C.** High jump
   - **D.** Running

Apply your understanding

6. **Describe** what is meant by fundamental movement skills. **Determine** how they can influence performance in physical activity.
7. Using examples from soccer or hockey, **outline** the difference between an open and closed skill.
8. Using examples from basketball or AFL, **outline** the difference between discrete, serial and continuous skills.
9. Using examples from cricket or tennis, **outline** the difference between fine and gross skills.
10. **Propose** which fundamental movement skills would form the foundation of the following sport-specific skills:
    - volleyball serve
    - golf swing
    - triple jump.

LESSON
6.3 Skill acquisition

LEARNING INTENTION

- Describe the different stages of learning and typical characteristics of learners as they move through the stages.

6.3.1 What is a skill?

A **skill** is the learned ability to bring about an expected result with certainty, often with little effort. Skill acquisition is the process by which individuals learn motor skills.

skill a learned ability to bring about an expected result with certainty, often with little effort

ENGAGE

Every skill we perform has been learned. Can you remember when you first learned to ride a bike? In pairs, discuss the stages of learning for this skill.

FIGURE 6.9 How does a beginner become an athlete?

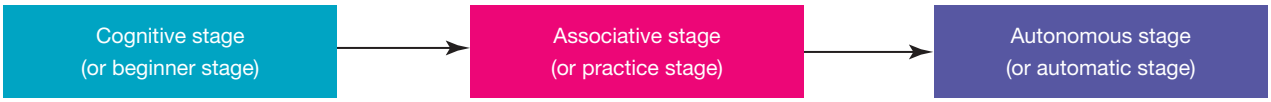
6.3.2 The stages of skill learning

When learning a new skill, there are three distinct stages of progression:

1. cognitive stage (or beginner stage)
2. associative stage (or practice stage)
3. autonomous stage (or automatic stage).

It is important for teachers and coaches to understand these stages, so that they can identify the stages their learners are at. The stage of the learner affects the kinds of feedback and practice that will best help the learner move on to the next stage.

FIGURE 6.10 The three stages of learning



Cognitive stage

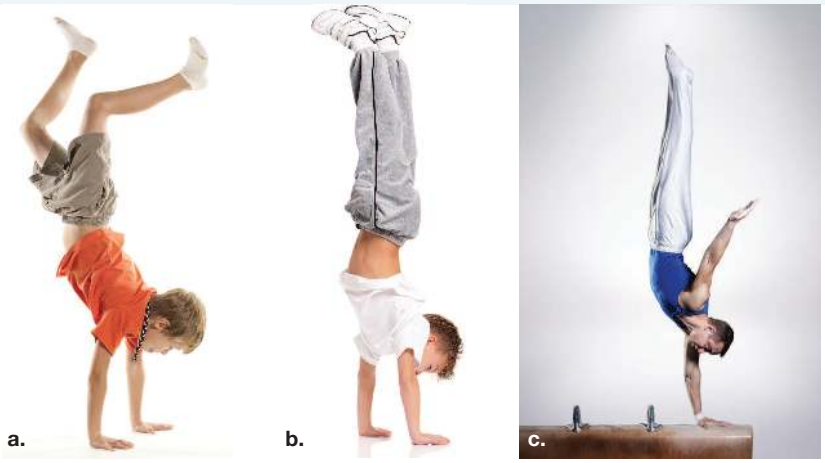
Individuals within the **cognitive stage** of skill learning need to learn how to perform the skill. You can help beginners by first demonstrating the skill a number of times so that they can get an idea of the skill, and by identifying two or three key points to focus on. A visual demonstration is a powerful teaching tool. During this stage, it can be helpful to 'close down the skill' to allow the learner to focus on the key points of skill execution. To do this:

cognitive stage first stage of skill learning. Individuals who are at the cognitive or beginner stage need to know how to perform the basic movement patterns of the skill in the correct sequence.

- Demonstrate the skill so the learner can visualise it. Then, have them practise the skill.
- After allowing the learner some time to practise the skill on its own, point out their errors, re-emphasise and demonstrate the key points again, and then have the learner practise the skill again.
- Be aware that during this first stage of skill learning, the beginner's movements will often appear uncoordinated and a large number of mistakes are common.

In the handstand example in figure 6.11a, the learner is making a large number of mistakes. Feedback and practice should focus on the key points of skill execution, such as keeping the legs together.

FIGURE 6.11 **a.** A beginner is at the cognitive stage. **b.** In the associative stage, the skill is refined. **c.** At the autonomous stage, the skill has been mastered.



Associative stage

During the **associative stage**, the individual is beginning to get the feel of the movement and fewer errors are made. Demonstrations and feedback during this stage can help individuals refine their skills. It is important to note that the time spent in this stage will depend on a number of factors, such as:

- the complexity of the skill
- the motivation of the individual
- the ability of the coach to detect errors and provide accurate feedback
- the individual's abilities
- the individual's past experiences.

associative stage second stage of skill learning. During the associative or practice stage, the individual is beginning to get the feel of the movement and fewer errors are made.

Some people may never progress past this stage.

In the handstand example in figure 6.11b, the learner is completing the skill with fewer errors. However, they can still refine their skill further. For example, the head could be tucked in more.

Autonomous stage

In the **autonomous stage**, the individual is able to complete the skill with little conscious effort. The skill can be sped up or slowed down, depending on the requirements of the situation. Other information can now be taken in, such as the opponent's moves, the weather conditions and other external factors that may affect the skill. During this stage, an athlete can focus on other factors, such as the application of different degrees of force or spin. Once a learner reaches this stage, they can complete the skills successfully in an open environment.

autonomous stage third and final stage of skill learning. In the autonomous or automatic stage, the individual is able to complete the skill virtually without conscious control.

In the handstand example in figure 6.11c, this person is completing the handstand skill with minimal errors and added complexity (e.g. using one hand).

Most people are able to move to the associative stage of skill learning quite quickly. However, entering the autonomous stage may take months or years of practice, and some people may never be able to progress to the autonomous stage. The younger a person is when developing a skill, the more likely it is that they will progress through to the autonomous stage.

6.3 ACTIVITIES

1 Stages of skill acquisition

a. Use the following table to summarise the three stages of skill acquisition as outlined in this lesson.
b. Use the example of a handstand to describe what each of these stages looks like.

Stage	Characteristics	Handstand example
Cognitive		
Associative		
Autonomous		

2 Investigating skills

a. In class, try some of the following skills:
- a tennis serve
- a cartwheel
- dribbling a basketball through your legs
- a drop punt
- spin bowling.

b. For any skills you tried, identify and justify which stage of learning you are in for that skill.

6.3 Exercise

6.3 Exercise

Select your pathway

LEVEL 1	LEVEL 2	LEVEL 3
1, 2, 3, 4, 5, 6	7, 9	8, 10

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Check your understanding

1. MC What stage of learning is associated with practising the key points of a skill?
   - A. Cognitive
   - B. Associative
   - C. Autonomous
   - D. All stages
2. MC At what stage of learning would you expect to see a focus on external factors such as tactics?
   - A. Cognitive
   - B. Associative
   - C. Autonomous
   - D. All stages
3. MC At what stage of learning are a large number of mistakes expected?
   - A. Cognitive
   - B. Associative
   - C. Autonomous
   - D. All stages
4. Every learner spends the same amount of time in each stage of learning. True or false?
5. MC In what order do learners move through the stages of learning?
   - A. Autonomous → associative → cognitive
   - B. Associative → cognitive → autonomous
   - C. Cognitive → autonomous → associative
   - D. Cognitive → associative → autonomous

Apply your understanding

6. **Outline** each of the stages of learning.
7. **Describe** the difference between the cognitive and associative stages of learning.
8. When an older learner starts something new, they usually go straight into the associative stage of learning. **Justify** whether you agree with this statement.
9. **Outline** some factors that may decrease the time spent in the cognitive stage of learning.
10. Using your knowledge of open and closed skills, **propose** what skills should be used during each stage of learning.

LESSON
6.4 Factors affecting skill acquisition

LEARNING INTENTION

- Explain how practice and feedback can be used to enhance movement skill development.

ENGAGE

Learning a movement skill is no different from learning a language, spelling or a new phone number.

If you had to learn to spell supercalifragilisticexpialidocious, how would you practise it?

Now, try throwing a ball at a target with your eyes closed. How could you know if you were successful or not? What type of feedback is most helpful?

FIGURE 6.12 Can you throw a ball accurately with your eyes closed?

6.4.1 Practice

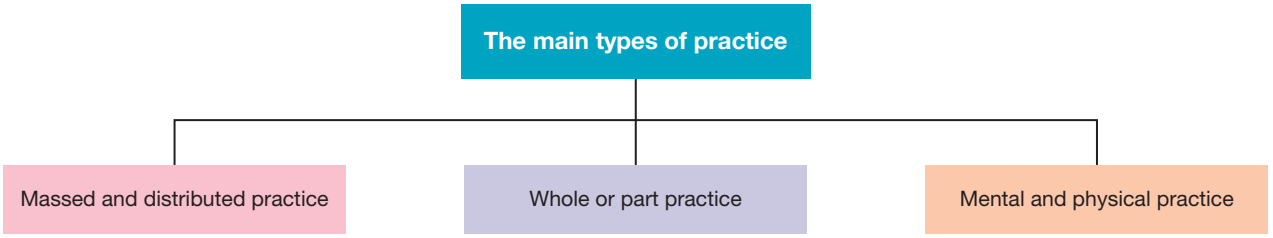
Practice is essential for the acquisition and development of movement and sport-specific skills. The teacher or coach should be aware of the different types of practice and should select the method that will most improve the individual's ability to learn. The main types of practice are:

- massed and distributed practice
- whole or part practice
- mental and physical practice.

massed practice practice of a longer duration

distributed practice short sessions interspersed with periods of rest, during which either feedback is provided or another skill is practised

FIGURE 6.13 The main types of practice



Massed and distributed practice

Massed practice involves practice over a longer period of time. This type of practice is most suitable for highly skilled (autonomous learners) and motivated performers. An example is practising 50 tennis serves one after the other.

Distributed practice involves shorter sessions with rest breaks in between. During these rest breaks, feedback can be given or another skill can be practised. Distributed practice is more suitable when:

- the athlete is learning a new skill (cognitive and associative learners)
- when the skill is complex and/or physically demanding
- when the learner's motivation is not high.

FIGURE 6.14 Practising is an important part of skill learning.

Whole or part practice

Whole practice involves practising a skill in its entirety, whereas **part practice** involves breaking down the skill to practise it in parts. Some skills are best practised in their entirety; for example, discrete skills like a golf swing. However, serial skills, such as a basketball lay-up, are best broken down into their parts, so that each part can be practised on its own before the parts are combined and practised as a whole. In the example of a lay-up, the dribbling and shooting parts would be practised on their own first before combining them.

Mental and physical practice

Most of us are familiar with **physical practice**, which involves actually performing a skill. In contrast, **mental practice** involves imagining or visualising the skill in your mind. Elite athletes use mental imagery to improve their skill levels.

whole practice form of practice in which a skill is practised in its entirety

part practice breaking down and practising a skill in its 'parts' or sub-routines

physical practice practice in which the skill is actually performed physically

mental practice involves imagining or visualising a skill in the mind

feedback information provided to a performer about the quality and/or outcome of the performance

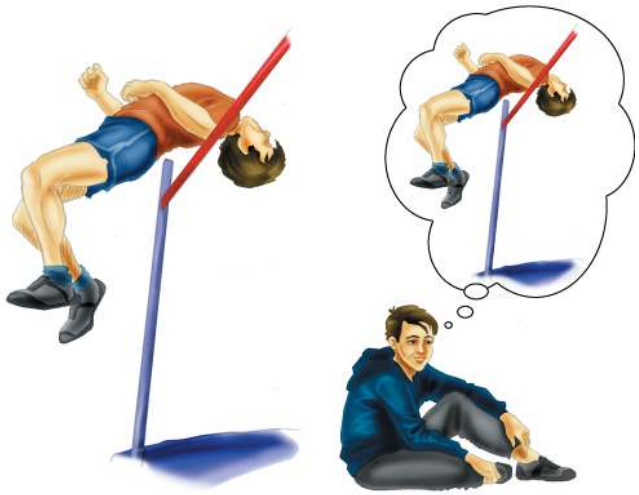
knowledge of performance feedback about the quality of the performance itself

knowledge of results feedback about the outcome of the performance

6.4.2 Feedback

Feedback provides us with information about the quality of our performance. This is usually in the form of knowledge of performance or knowledge of results.

FIGURE 6.15 Best practice incorporates both physical and mental techniques.



Knowledge of performance is information about the quality of the performance itself; for example, was the skill performed with the correct technique? This feedback may be provided by an external source, such as the coach, or it may come from the individual performing the skill who has a 'feel' for the quality of their performance.

Knowledge of results is feedback about the outcome of the movement or performance; for example, whether a serve in tennis was in or out.

FIGURE 6.16 A coach can provide valuable feedback to an athlete about their performance.

There are other types or forms of feedback. Internal or **kinaesthetic feedback** is about the 'feel' of the movement. For example, a golfer can often feel whether the shot was a good one by the way the movement felt and the way their body flowed during its execution. On the other hand, external or **augmented feedback** is provided by visual, verbal or aural (hearing) signals. For example, golfers can tell that they hit the ball well by the sound made on contact, by seeing the ball flying down the fairway or by being told that the shot was a good one.

kinaesthetic feedback feedback about the 'feel' of a movement skill

augmented feedback information provided by visual, verbal or aural (hearing) signals

Feedback is very important if players are to improve. For feedback to be effective, it needs to be given as soon as possible during or after the performance and it should be positive rather than negative. People are much more receptive to feedback that is constructive. Constructive feedback is more motivating and increases the likelihood of the performer wanting to practise. This, in turn, increases their success, which serves as a further motivating force.

The precision of the feedback is also very important. Feedback such as 'well done' is good for encouraging beginners. However, learners also need specific feedback, such as 'you need to follow through more at the end of your throw' and 'try putting your throwing hand in your back pocket after you have released the ball'. It is important that a teacher or coach provides feedback to as many individuals as possible during a class or training session. It is also important to use feedback effectively so that individuals and teams can improve their performance.

DID YOU KNOW?

People are able to process only two or three pieces of information at once. Feedback about performance should be limited to a few key points and should be given as soon as possible after completion of the skill.

6.4 ACTIVITY

1 Critical and creative thinking

a. Select a skill at which you are not very competent (e.g. juggling). Complete the following steps:
- **i.** Spend one minute attempting the skill and rate your performance.
- **ii.** With a peer, complete five minutes of distributed practice.
- **iii.** Spend one minute attempting the skill and rate your performance.
- **iv.** Complete five minutes of massed practice.
- **v.** Spend one minute attempting the skill and rate your performance.

b. Now, discuss the following questions:
- **i.** Which form of practice appeared to be the most effective and how do you know?
- **ii.** Consider the advantages and disadvantages of the types of practice.
- **iii.** When would massed practice be the most effective way to improve and why?
- **iv.** When would distributed practice be the most effective way to improve and why?
- **v.** What can you do if you are practising and practising, but are not seeing any improvement?

2 Feedback

doc-14831

Complete the laboratory activities in the **Feedback** worksheet in your Online Resources and comment on the effect of feedback on performance.

3 Intrinsic feedback

a. Observe an elite basketballer completing a foul shot and three point shot. (There are many videos online.)
b. Attempt 10 foul shots. Discuss examples of knowledge of performance and knowledge of results from your foul shots.

c. Complete 5 foul shots with your eyes closed. As you make the shot, predict if it is going to go in.
d. Complete the same activity for three point shots.
e. Were you able to successfully guess whether the shot would go in (or not) with your eyes closed? How does being able to use intrinsic feedback help performance in basketball?

4 Using technology for feedback purposes

a. Research the use of technology in sport and how it can help an athlete improve performance via feedback.
b. Come up with two technology tools that can help provide athletes and their coaches with feedback to modify and improve performance. This may include video analysis, computer software or apps on your digital device.
c. Identify one advantage and one disadvantage of one of the tools selected.
d. Decide which one would be most appropriate for you.
e. Justify your response.

5 Assessing swimming performance

Poor swimming technique can result in wasted energy and poor performance. The aim in sprinting is to direct all body action directly up the pool and avoiding too much rotation or sideways movements.

weblink

a. Use the **Freestyle** weblink in your Online Resources to explore further.
b. Choose one stroke, and read the technique points and watch one of the short videos.
c. List five points that you consider to be fundamental to better freestyle technique.
d. Take turns with a partner in swimming a distance of about 20 metres. Focus on trying to swim efficiently, being mindful of the points you listed on better technique.
e. The observer should provide feedback from your list about your technique following each swim. Feedback should focus on ways to refine your technique to improve performance.

6.4 Exercise

6.4 Exercise

Select your pathway

LEVEL 1	LEVEL 2	LEVEL 3
1, 2, 3, 4, 6	7, 8, 10	5, 9

These questions are even better in jacPLUS!

- Receive immediate feedback
- Access sample responses
- Track results and progress

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Check your understanding

1. MC Completing 40 tennis serves in a row would be an example of what type of practice?
   A. Massed and part
   B. Distributed and part
   C. Massed and whole
   D. Physical and part
2. MC Who is part practice best suited for?
   A. Cognitive learners
   B. Associative learners
   C. Autonomous learners
   D. It depends on the skill
3. MC Providing information about the learner's technique is an example of what type of feedback?
   A. Knowledge of results
   B. Knowledge of performance
   C. Kinaesthetic feedback
   D. All of the above

4. MC An example of knowledge of results in tennis would be:
   A. feeling like you hit the ball 'in the sweet spot'.
   B. hearing the ball hit the net as it goes over.
   C. the percentage of first serves in.
   D. not throwing the ball up high enough on the serve.
5. Any and all types of practice are beneficial for cognitive learners. True or false?

Apply your understanding

6. Using an example, **outline** the difference between massed and distributed practice.
7. Using an example, **outline** the difference between part and whole practice.
8. Massed and whole practice is best suited for autonomous learners. **Explain** why this is the case.
9. **Describe** the difference between knowledge of results and knowledge of performance for a swimmer, rower or cyclist.
10. **State** an example of each of the following types of feedback for a sport or physical activity of your choice:
    - Knowledge of performance
    - Knowledge of results
    - Kinaesthetic feedback
    - Augmented feedback

LESSON
6.5 Refining skills using biomechanics

LEARNING INTENTION

- Explain how biomechanical concepts are applied to improve performance.

6.5.1 What is biomechanics?

Biomechanics is an area of sports science that applies the laws of physics and mechanics to improve performance in sport. In other words, it studies forces and their effects on and within the human body.
A basic knowledge of biomechanics can help athletes and coaches get better results. This lesson covers the key biomechanical concepts of:

- application of force
- projectile motion
- balance and stability.

ENGAGE

Different sports involve the use of different biomechanical concepts.

- What sports or activities require increased force and decreased precision?
- What sports or activities require a focus on precision with decreased force?
- What sports or activities require a focus on projectile motion? Height or distance?
- What sports or activities require high levels of balance and stability?
- What sports or activities require the performer to sacrifice balance and stability to be able to move quickly?

FIGURE 6.17 Sumo wrestlers try to maximise their stability to ensure success against an opponent who is attempting to knock them off balance.

6.5.2 Using biomechanics to produce better results

When combined with good technique, understanding biomechanical concepts can improve performance. Further, to improve the effectiveness of your practice and feedback, it is useful to understand the biomechanical principles behind the target skill.

An excellent example of how biomechanical principles can be applied to improve athletic performance is the Fosbury Flop. This high jump technique was pioneered by Dick Fosbury, and it allowed him to successfully clear 2.24 m at the 1968 Olympic Games. The Fosbury Flop involves the high jumper arching their body as they pass over the bar, which means the body's centre of mass passes under the bar. Fosbury's technique is still used by all elite high jumpers today.

FIGURE 6.18 The Fosbury Flop is characterised by the high jumper arching their body as they pass over the bar.

Understanding biomechanics can produce the following benefits for coaches, teachers and athletes:

- Skill performance and proficiency can be improved by developing the most efficient and effective technique.
- Equipment and materials can be designed maximise sports performance or widen participation (e.g. junior-size equipment).
- Skills can more easily be transferred from the practice field to the playing field. For example, batting tees, ball-throwing machines, swimming flumes and video and computer software allow athletes to improve their technique and then apply this in competition.
- Injuries can be prevented or reduced by understanding the causes of injury and using proper technique.

6.5.3 Force production and application

All movement and motor skills — including running, jumping, throwing, kicking and striking — require the production and application of muscular force.

How effectively this force can be developed and applied often determines the proficiency with which the skill is performed. How much force is developed can significantly impact the speed and power of the movement.

This section looks at important factors in force production and application, including:

- force summation
- impulse
- absorption of force
- accuracy.

Force summation

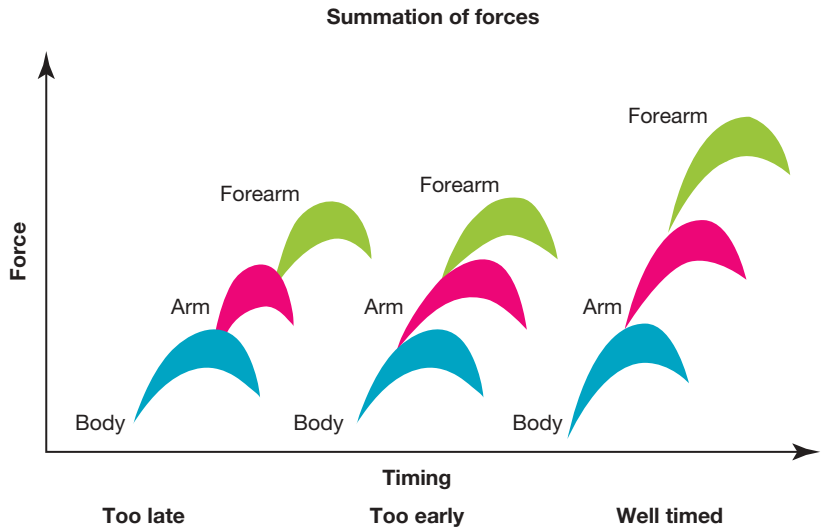
Force summation is necessary when maximum effort is required, such as kicking a football for distance, throwing a javelin, fast bowling a cricket ball, performing the high jump or performing a vault in gymnastics. Force summation involves adding different body parts to a movement to achieve a greater overall force. To achieve the best results, the individual must combine the movements of these different body parts into a coordinated sequence of movements. Summation of force can occur in two ways: sequential summation of force or simultaneous summation of force.

force summation the correct timing and sequencing of the parts of your body and muscles through a range of motion

Sequential summation of force

Sequential summation of force is when a sequence of body movements takes place, starting with the larger, more powerful body parts to produce the initial force, and then transferring this force to the next moving part and eventually finishing with the smaller, lighter body parts. To achieve the greatest possible force, each body part must give its greatest force before the next body part comes into action (see figure 6.19). In addition, each subsequent body part that is applied needs a stable base for the force summation to be effective.

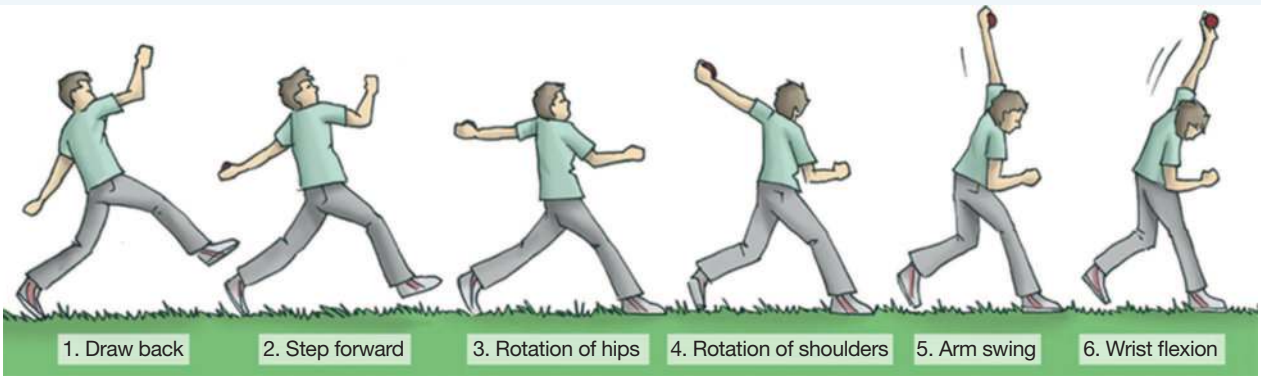
FIGURE 6.19 In sequential summation of force, the force must transfer from larger to smaller body parts in a well-timed sequence.



Fast bowling in cricket is a good example of the sequential summation of force (see figure 6.20). In the delivery action, there is a sequence of body movements beginning with the larger, heavier body parts (legs, trunk) and finishing with the smaller, lighter body parts (wrist, hand).

1. The first part of the delivery action is to step forward onto the front foot.
2. This provides a stable platform for the rotation of the hips and trunk.
3. Momentum is then transferred to the shoulder and the arm swing, followed by wrist flexion and the release of the ball from the hand and fingers.

FIGURE 6.20 The delivery action in fast bowling in cricket showing the sequential summation of force



Players who cannot throw a ball as far as expected may not be carrying out the summation of forces correctly. When analysing the movement or skill, ask yourself:

- Are as many body parts as possible contributing to the desired outcome?
- Are the body parts that are larger and stronger operating before the smaller, faster-moving body parts?
- Are the body parts being used in the correct order?
- Does each body part have a stable base so that it can carry out its action effectively?
- Are the lighter and more quickly moving body parts being used at the point of release? (You may like to apply this to other skills, such as striking.)

Simultaneous summation of force

Simultaneous summation of force takes place when an individual performs a skill such as a sprint start or box jump. The performer carries out an explosive action with maximum force over a very short period of time. The aim of this type of force production is to develop powerful movements of the arms and legs to produce a powerful take-off.

Impulse

Another way of increasing the amount of force production or change in momentum during a movement is by applying the force for a longer period of time. This is the biomechanical principle of **impulse**. Impulse is the product of force × time. Impulse is important in many sports, including:

impulse the force applied to an object and the length of time the force is applied; change in momentum

- the start of the 100-metre sprint in athletics
- leaving the blocks in swimming
- pitching in softball and baseball
- the discus throw
- performing the push pass in hockey.

For example, in discus, it is better to perform a circular spin before releasing the discus, rather than throwing from a standing position. This allows the athlete more time to generate muscular force.

In the 100-metre sprint, two techniques are used at the start of the race to generate greater impulse:

1. pushing from the blocks to maintain a strong forward force for as long as possible
2. taking short, sharp steps over the first 10–20 metres, which allows the feet to push repeatedly against the track and magnify the force applied.

Absorption of force

The principle of impulse can also be used to absorb force, such as when catching a ball. Absorbing the force means that the object that is in motion is slowed or stopped. The longer the force is absorbed, the easier it is to slow down. This biomechanical principle is often used to decrease the risk of injury. This absorption of force can be achieved in a number of ways, including by altering the technique of a skill or by using equipment that can absorb the impact for a period of time (see table 6.1).

TABLE 6.1 Example of the absorption of force

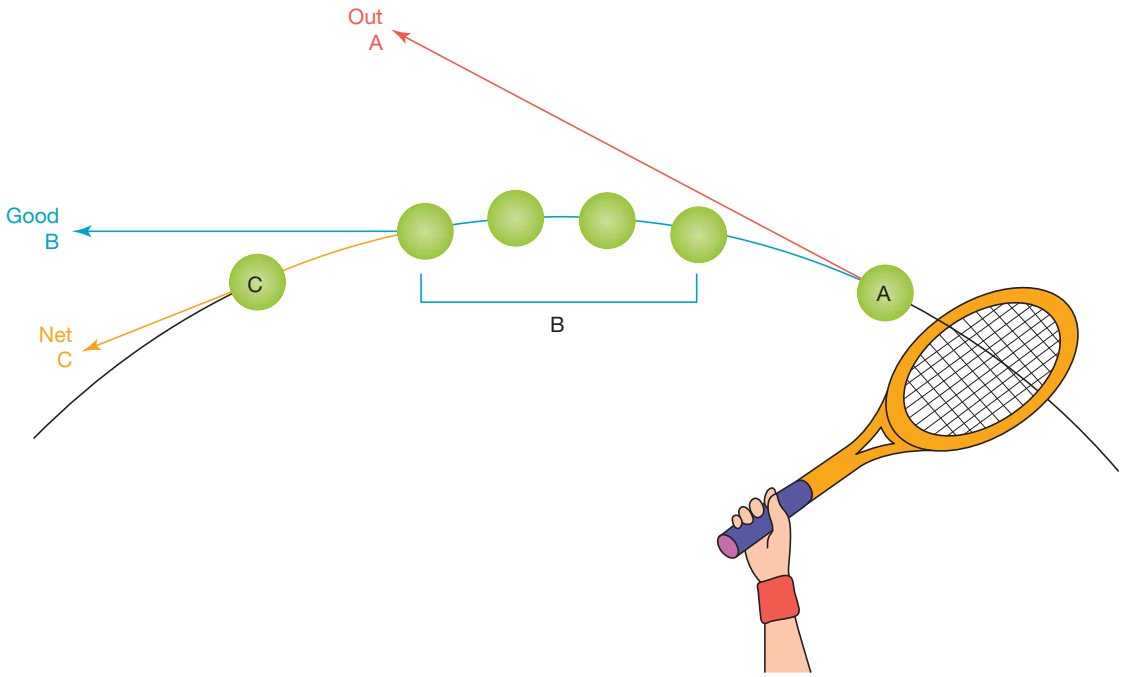
Absorption of force by altering technique	Absorption of force using equipment
A cricketer attempting to catch a hard cricket ball will let the ball hit their hands and move their hands in the direction the ball is going. This absorbs the force over time.	A high jumper performing the Fosbury Flop will have their force absorbed by a thick high jump mat. The thicker the mat, the longer the force can be absorbed and the easier it is for the jumper to slow down safely.
A netballer who jumps up to receive a pass will land and attempt to absorb the force over a long period of time. They do this by bending their knees when landing and continuing to do so until the force is absorbed.	A tennis racquet with loose strings will absorb the force of a tennis ball more easily, as the ball is in contact with the strings over a longer period. If the strings are tight, then the force will not be absorbed as much. In this case, the player would have to generate more force to overcome the force of the ball.

Accuracy

In some sports, maximum force is not required; rather, accuracy is more important. Accuracy in throwing and striking can be improved by 'flattening the arc'. This is achieved by moving the axis of rotation (the shoulder joint) forward in the direction of the throw just before the time of release of the ball. The arm should straighten as the shoulder moves forward because of the transfer of weight onto the front foot and the rotation of the trunk.

When a player serves in tennis (see figure 6.21), they create a flattened arc by shifting their body weight forward and rotating their body just before the moment of contact. When a player hits a softball, the arc is flattened due to the rotation of the trunk, which moves the shoulders forward, and by moving their weight onto the front leg just before contact.

FIGURE 6.21 The correct trajectory is obtained by striking the ball at point B. This is called flattening the arc.



6.5.4 Projectile motion — speed and angle of release

Throwing, striking and kicking skills all involve objects such as balls and equipment (e.g. discus or javelin) being projected into the air. In biomechanics, this is known as **projectile motion**, and the object moving through the air is referred to as a **projectile**. A projectile's flight path (trajectory) is influenced by a number of factors, of which velocity of release and angle of release are the most important. The body can also be considered a projectile in sports like high jump and long jump.

projectile motion the motion of objects such as balls or implements that are thrown, struck or kicked into the air

projectile the object propelled into the air as a result of force application, such as a soccer ball or even a body itself

Velocity of release

Velocity of release is the most important factor for achieving maximum distance of a projectile. The greater the speed of release, the greater the distance achieved. Speed of release is largely determined by the principles of force production (summation of force and impulse) discussed in section 6.5.3.

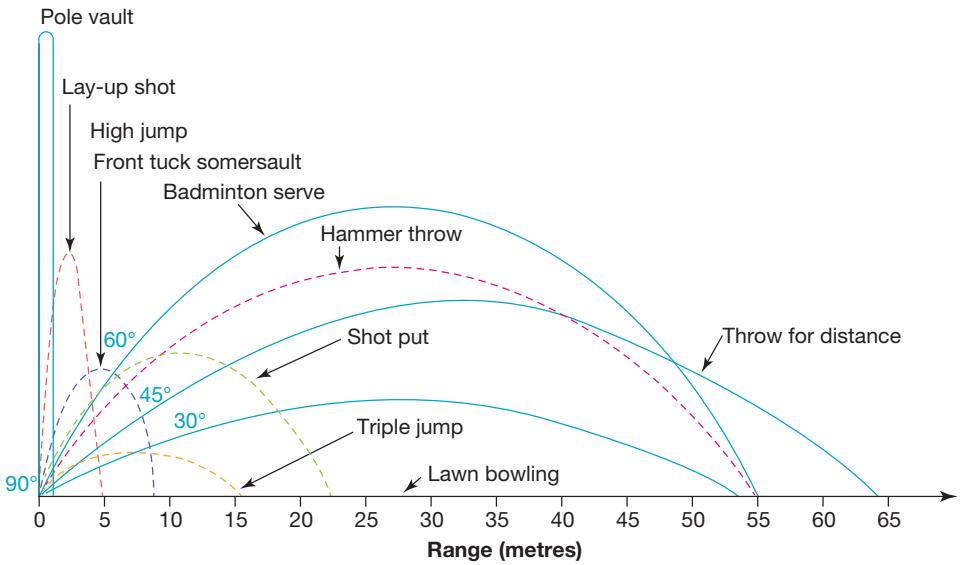
velocity of release the single most important factor for achieving maximum distance of a projectile; the greater the velocity of release, the greater the distance achieved

angle of release angle at which a projectile is released

Angle of release

When attempting to achieve maximum distance in throwing and kicking skills, the optimal **angle of release** of a projectile is 45 degrees for any given velocity of release. This angle of release gives equal parts vertical and horizontal force. However, this applies only when the height of release and height of landing are the same, and when spin and air resistance are not present. Given that this is rarely the case, the optimal angle of release for achieving maximum distance in most sporting activities is usually less than 45 degrees. An angle of between 35 and 45 degrees is the most common. Figure 6.22 shows the optimal angles of release for various sporting skills. When height is required, the angle of release increases, such as during a pole vault or high jump.

FIGURE 6.22 Optimal angles of release and associated trajectories for various sporting skills



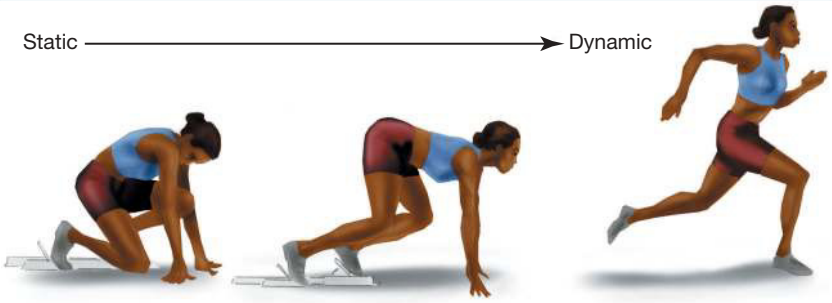
6.5.5 Balance and stability

In sport, balance and stability can make the difference between an effective or ineffective performance. **Stability** is an object's resistance to movement from a balanced position. There are two types of stability:

- *static stability* — when an object is at rest
- *dynamic stability* — when an object is in motion.

stability an object's resistance to movement from a balanced position. Static stability is when the object is at rest; dynamic stability is when the object is in motion.

FIGURE 6.23 The sprinter progresses from a very stable position of static balance to a less stable dynamic position during the one event.



The stability of an object depends on a number of factors, including:

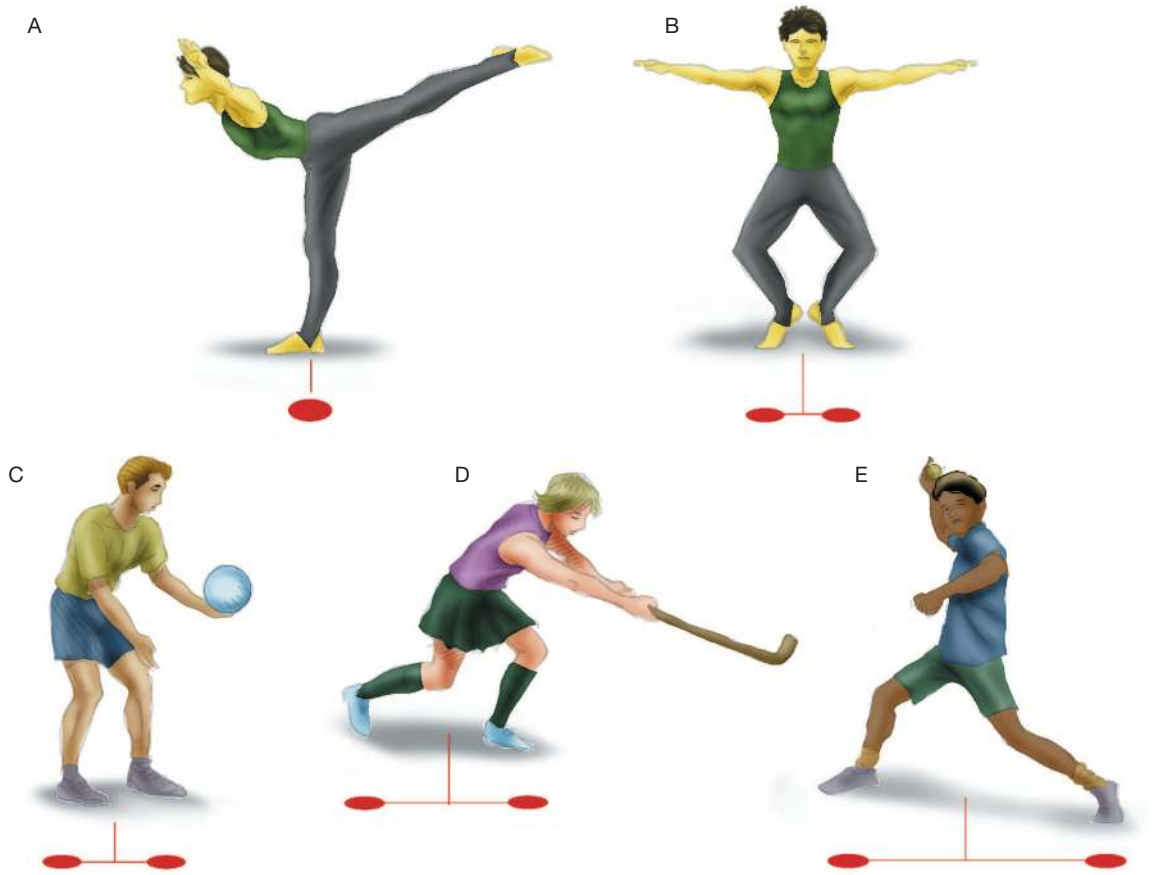
- the area of the object's base of support
- the height of the centre of gravity of the object above the base of support
- the position of the line of gravity relative to the base of support.

The area of the base of support

The area of the **base of support** of an object refers to the part or parts of the object in contact with the support surface. For example, the hands are in contact with the floor in a handstand, and the head and hands are in contact for a headstand. The area of the supporting base of the object is directly related to its stability; the greater the area of support, the greater the degree of stability (figure 6.24).

base of support part or parts of the object in contact with the support surface

FIGURE 6.24 Stability is related to the area of the base of support. Notice how the base of support gets larger from A to E.



Therefore, stability can be increased by increasing the area of the base of support. This can be achieved by making contact with more body parts or by spreading the body parts so that they cover a greater area, such as when placing the feet further apart before receiving a bump in football.

Centre of gravity

The **centre of gravity** of an object refers to the point in the object or body through which the downward force of gravity acts. Generally, the higher the centre of gravity of the object above its base of support, the less stable the object. Lowering the centre of gravity of an object relative to its base of support increases the stability of the object. You can increase your stability by bending your knees and thereby lowering your centre of gravity.

Line of gravity

The **line of gravity** is an imaginary vertical line passing downward through the centre of gravity. If the line of gravity falls comfortably within the base of support, the position is more stable. The greater the area of the base of support, the more space you have for this to occur. The closer the line of gravity is to the limits of the base of support, the less stable the object.

centre of gravity the point in any object or body through which the downward force of gravity acts

line of gravity imaginary vertical line passing downward through the centre of gravity of a body or object

In some sports and skills, athletes deliberately position the line of gravity close to the limits of their base of support so that only a small force is required to get them moving in the required direction. Swimmers and runners on the blocks lean forward in the direction of intended movement, so that when the gun goes off, they require only a small amount of force to begin moving in that direction (figure 6.26). In a sprint, as soon as an athlete removes their hands from the ground (when using starting blocks), their line of gravity is in front of the body. This causes a quick rotation of the body and an explosive start. The athlete is prepared for this and puts their foot out to stabilise themselves so they don't fall over. This is an example of when a lack of stability is actually a good thing. It allows movement to be far quicker than it would otherwise be.

FIGURE 6.25 The location of the centre of gravity in the human body when standing upright

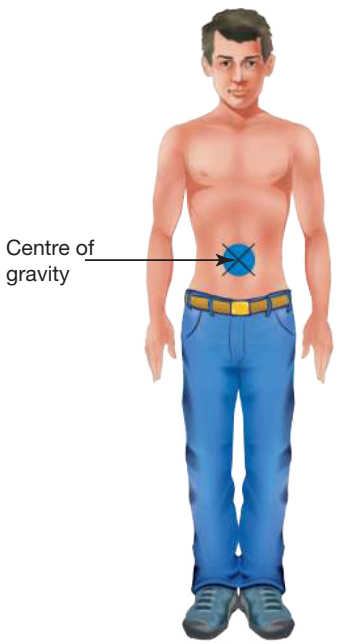
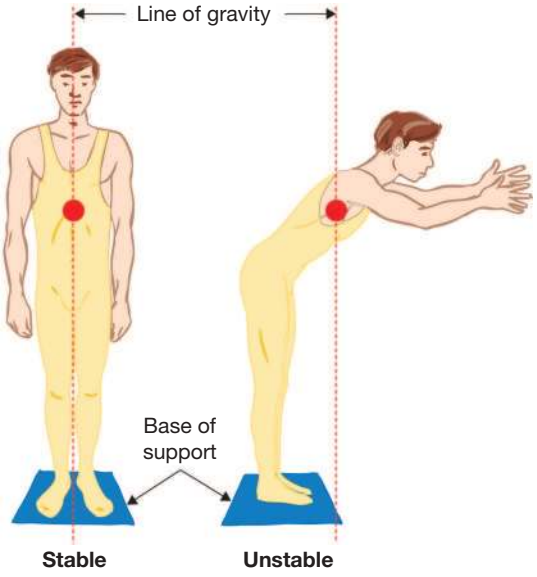


FIGURE 6.26 The height of our centre of gravity changes according to the skill we are performing.

Other athletes who require a position of stability, such as sumo wrestlers (figure 6.17), position the line of gravity as far inside the base of support as possible.

Some athletes even manipulate their line of gravity to help maintain stability after collisions. For example, in rugby, if a player sees someone coming to tackle them, they can move their line of gravity forward towards the limit of the base of support. This way, even if collision occurs, the line of gravity falls within their base of support and they avoid falling over.

FIGURE 6.27 Stability is lost when the line of gravity falls outside the base of support.



6.5 ACTIVITIES

1 Stability

a. Rank the following figures from least stable to most stable.
b. Use the **Stability** worksheet in your Online Resources and complete the activity.

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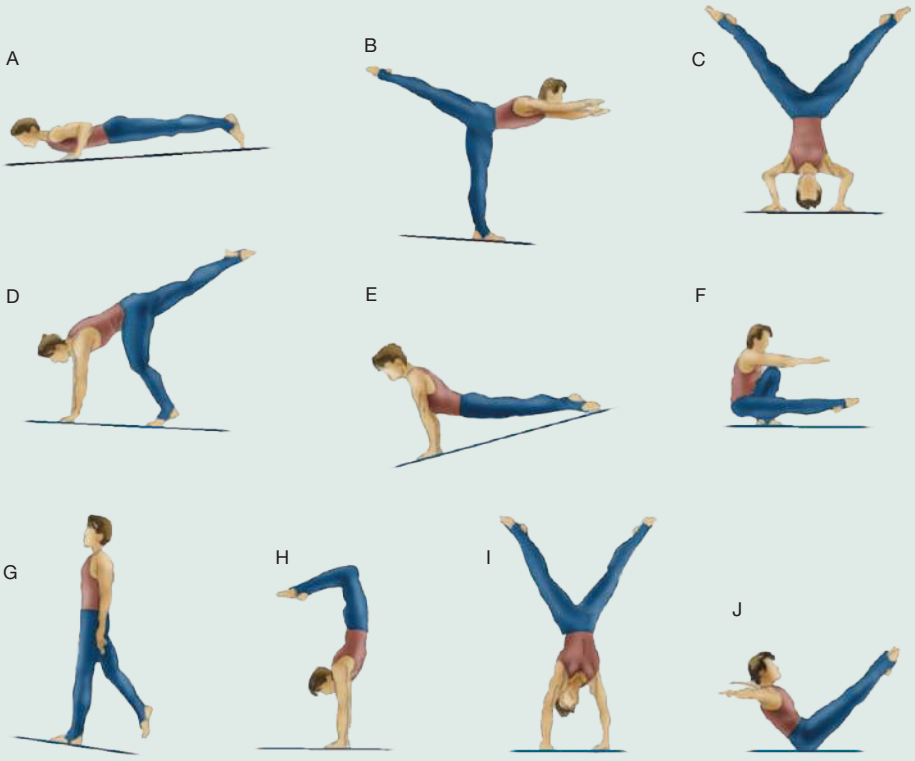

2 Summation of forces

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Use the **Summation of forces** worksheet in your Online Resources and complete the activity.

3 Projectile motion

doc-14832

Use the **Projectile motion** worksheet in your Online Resources and complete the activity.

4 Analysing the use of force using ICT

weblink

a. In pairs, use the **Video analysis software** weblink in your Online Resources or similar software on your laptop, tablet or phone to record a partner performing a bowl in cricket.
b. After recording this action, compare it to the action shown in the bowling illustration in figure 6.20.
c. Based on this comparison, give feedback about how the performer can generate more force.
d. Swap roles so that you both have a chance to give and receive feedback.

5 Canoeing or kayaking

Jess Fox, OAM, is an eight-time world champion and an Olympic champion and is considered one of the greatest paddlers of all time. Both her parents were paddlers.

Both canoeing and kayaking are considered 'paddle' Olympic sports but they actually differ greatly. The image and table below show some differences between the two sports and the skills required.

FIGURE 6.28 (a) Canoeing (b) Kayaking

	Canoe	Kayak
Vessel	Open on top, wider, heavier and more stable	Closed on top, lighter weight
Paddle	Single-bladed	Double-bladed
Position	Kneel	Seated, legs out in front, closer to water
Paddle skill	Paddle on one side of body	Paddle on both sides of body

Using your understanding of biomechanics, explain how the difference in equipment would impact performance. You should consider the ability to generate summation of momentum, impulse and balance and stability.

6.5 Exercise

6.5 Exercise

Select your pathway

LEVEL 1	LEVEL 2	LEVEL 3
1, 2, 3, 5, 8	4, 7, 9	6, 10

These questions are even better in jacPLUS!

- Receive immediate feedback
- Access sample responses
- Track results and progress

Find all this and MORE in jacPLUS

Check your understanding

1. Applying impulse to sporting performance can improve performance and decrease the risk of injury. True or false?
2. MC For an activity such as throwing the ball over a defender's hands, the optimal angle of release will be:
   - A. 45 degrees.
   - B. less than 45 degrees.
   - C. greater than 45 degrees.
   - D. between 35 and 45 degrees.
3. MC To increase stability, you can:
   - A. widen your stance.
   - B. bend your knees.
   - C. shift your weight into the middle of your stance.
   - D. All of the above
4. Sequential summation of forces involves using all of the muscles in the body at the same time. True or false?
5. All athletes at all times will benefit from having their line of gravity through the centre of the base of support. True or false?

Apply your understanding

6. **Explain** the concept of impulse and its relationship to the change in momentum that can be generated when performing a skill, such as throwing or kicking for distance.
7. **Outline** the difference between simultaneous and sequential summation of force.
8. **Identify** three sporting skills that require sequential summation of forces and three that require simultaneous summation of forces.
9. Using a sporting example, **explain** the difference between static and dynamic stability.
10. Select one of the following activities and **identify** the biomechanical principles that can be applied to it. In each case, **determine** how the principle operates for the activity you have chosen.
    - a. Javelin throw
    - b. Tennis serve
    - c. Rugby tackle
    - d. 100-metre sprint

LESSON
6.6 Transferring, training and adapting skills

LEARNING INTENTION

- Describe how tactics and other components of sport can be practised and modified in training to improve performance.

ENGAGE

- What skills and strategies would Ash Barty have been able to transfer from tennis to cricket and then to golf?
- What are the similarities and differences in the tactics for these three sports?
- What types of practice may be similar for all three sports and how would practice differ for each sport?

FIGURE 6.29 Ash Barty is a tennis champion but she also plays cricket and golf.

FIGURE 6.30 Some skills developed in some sports can be transferred successfully to other sports. People who are successful in one striking sport are often successful in other striking sports.

6.6.1 Transference of skills

Once skills have been learned, they are continually refined using practice, feedback and transference of skills. Skill transference occurs when the learning or development of one skill is used in the learning and development of another skill. This is possible because we can draw from our 'skills bank' (our past experiences of developing other skills) and transfer this to similar movements and skills. For example, for all methods of kicking, there are similarities and basic principles that apply regardless of whether the kicking is being done in Australian Rules football, rugby or soccer.

Transference can also relate to how individuals think about rules, space, time, tactics and strategies. Familiarity with the use of space and time in soccer, for example, can be beneficial when playing hockey or lacrosse. Transference also enables a player to adopt movement strategies and elements appropriate for a game or performance, such as completing a diving or gymnastics routine.

Spatial awareness is important in team games because performers need to be aware of other players and their movements. An understanding of the elements of space and time can be used by skilled performers to improve the chances of a successful outcome.

Use of space

Space can be used in team sports to give a player more time in possession of a ball, increasing the likelihood of an accurate pass. In soccer, this might involve passing the ball to a player on the other side of the field. Defenders attempt to close down space and apply pressure on the ball carrier to reduce their time in possession.

Use of time

Time can be used to a team's advantage. For example, a basketball team playing against a team that has poor speed can improve their chances of success by increasing the speed of their own play. This reduces the time available for their opponents to defend the ball. If a team is leading, they may also decide to 'waste time' by deliberately holding onto and passing the ball instead of trying to shoot.

6.6.2 Practice and training regimes to improve performance

Practice and training regimes

Performing skills in a game or competitive situation requires practice and training in a less competitive and more controlled situation. Coaches set up practice regimes that allow athletes to rehearse their skills and movements repeatedly.

FIGURE 6.31 Basic skill drills should help prepare you for the movements required during a game.

As you know from previous sections, practice is essential for learning and developing proficiency in motor skills. We learned that practice could be massed or distributed, whole or part, and mental or physical. We will now consider some other aspects of practice that can help us to learn and develop motor and sporting skills.

An important element in developing skill proficiency is the ability to perform the skills in game-like situations. Most often, skills are first taught and practised using basic skill drills. Many of these drills take place in relatively closed environments, such as lines, lanes, circles, squares or triangles, which can result in individuals attending to what is happening in only limited situations. If too much time is spent practising skills in this way, the individual may struggle to apply these skills in game situations, where peripheral vision and an awareness of teammates and opponents are required. Therefore, while skills should initially be developed through basic skill drills, once learned, individuals should try to make their skills more open through intermediate skill drills, advanced drills and, eventually, game-like practice activities. This is to prepare individuals for the types of movements and situations they will encounter during actual games.

Basic skill drills

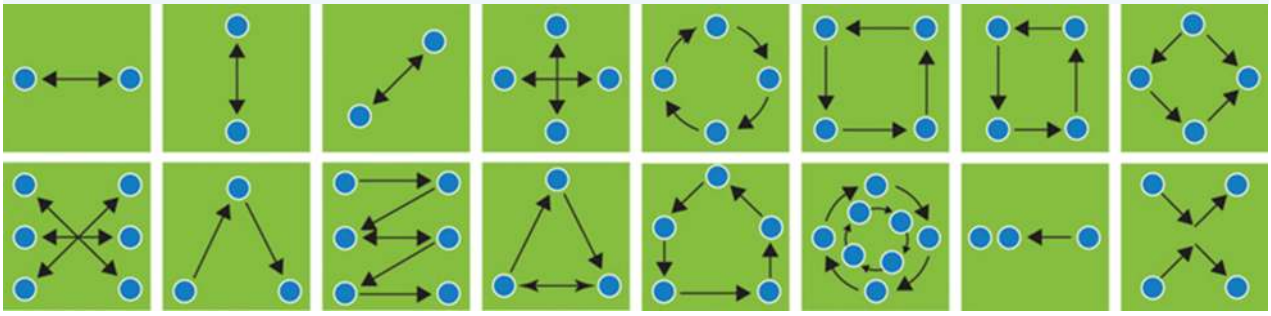
Basic skill drills are designed to allow the individual to learn and perform the skills in an environment in which they do not have to consider outside elements, such as the opposition or movement. In other words, they are performed in a closed environment. These types of drills are often performed with the individual stationary, or moving slowly at a walking or jogging pace. During this cognitive stage of skill learning, if the individual is required to direct their attention to anything other than performing the skill itself (such as moving to provide support or taking notice of where an

basic skill drills practice drills designed to allow the individual to learn and perform skills in an environment that ignores outside elements such as the opposition or movement

opponent is positioned), their focus can be distracted. This leads to a lack of concentration on how the skill is performed.

In ball games such as basketball, Australian Rules football, soccer, netball and hockey, basic skill drills are usually set up with the players in formations such as lines, circles, squares or triangles (figure 6.32). The ball is generally played in the direction of the arrows, with players performing the skills in a stationary position, or while walking or jogging. It is easy to imagine setting up such drills for any number of skills, such as the push pass in hockey or handballing in Australian Rules football. It is important that players are fully capable of performing a skill before advancing from basic to more advanced drills.

FIGURE 6.32 In ball games, basic skill drills are usually set up with the players in formations such as lines, circles, squares or triangles.



Intermediate skill drills

Once players have learned the basics of the skill, the skill may then be practised using an intermediate skill drill. In intermediate drills, movement is the only other factor that the player must think about. The player must learn to perform the skill correctly with movement involved. The pace of the movement will then be slowly increased. The types of movement involved should include:

- *stationary to moving* — performing the skill from a stationary position, or playing the ball to a moving partner or into a moving zone
- *moving to stationary* — performing the skill while moving, or playing the ball to a stationary partner or into a fixed zone
- *moving to moving* — performing the skill while moving, or playing the ball to a moving partner or into a moving zone.

Intermediate skill drills can also be set up with the players in lines, circles, squares or triangles. In a moving to moving skill drill, the ball may move in one direction and the player in another.

Advanced skill drills

As the difficulty of the drill increases, the aim is to make the activity more like a real game situation. Advanced drills increase the level of challenge by:

- increasing the speed of the drill until it eventually reaches match speed
- reducing the space and time the players have to perform the skill
- introducing opponents
- asking players to modify their skills (such as by applying spin in a tennis serve).

Advanced skill drills are often used by associative and autonomous learners in an open environment.

To make any skill drill more advanced, you can adjust the speed, space, time, equipment or pressure (see table 6.2). These can be remembered with the acronym SSTEP.

TABLE 6.2 SSTEP parameters

Speed	• The speed at which the drill is being performed • Having the player perform a number of repetitions within a set timeframe
Space	• Changing the amount of space available to the player performing the skill
Time	• Changing the period over which the drill is performed • Increasing the length of time of the skill practice session. This increases the physical demands on the performer • Decreasing the length of time for practicing the skill. This increases the speed of the performance
Equipment	• Introducing different equipment, or setting up a drill with different equipment • By altering the equipment, the performer can be challenged to complete a skill using a more advanced technique. An example is a junior tennis player who learns to play using a short racquet that is easy to swing and hits the ball accurately. Once the player is using this technique correctly, they can be challenged by introducing a longer racquet that is harder to control but that produces more force. The technique used for this longer racquet will need to be changed. For example, the player may hold the racquet closer to their head to maintain control and gradually lengthen their grip as they improve their skills.
Pressure	• Introducing opposition to the person performing the skill • This can be done progressively — first with token (passive) opposition, where the performer is not challenged for possession; second, allowing the performer to get possession (active) and then providing opposition in the form of attempted blocking; and, finally, by providing full opposition, where possession is contested in a game-like manner.

Opposed drills

Introducing opposition into any skill drill will 'open up the skill' and make it a game-like situation. Opposed drills involve the player and opponent weighing up the available options and choosing the best way to perform the task. Other skills, such as tackling and evasion, are also developed alongside the focus skill in some sports.

6.6.3 Moving towards game situations

Grid games

Grid games are an extension of intermediate and advanced skill drills. They take place, as their name suggests, within a grid or defined area and usually involve a relatively small number of players (e.g. three to five players per side). An example of a grid game is a keeping-off type passing game, which requires players from each side to make a certain number of passes while moving continuously within the defined grid or area. As the players' movements are not as defined as in a skill drill, players must make decisions on where and when to move, just like in a real game situation.

grid games an extension of intermediate and advanced skill drills; take place within a grid or defined area and usually involve a relatively small number of players

Such games not only encourage awareness of time and space but also help develop characteristics of teamwork, such as communication and running to support. In grid games, it is also possible to limit the movement of players to certain zones within the grid or area (non-invasive practices). This allows players to develop positional sense, and limits the type and amount of opposition that they encounter. Grid games provide an opportunity for players to begin developing what is referred to as **tactical proficiency**.

tactical proficiency the ability to weigh up game situations and decide which option to take and when to take it

Tactical proficiency

Tactical proficiency or **decision-making** is the ability to weigh up game situations and decide which option to take and when to take it; for example, whether to carry the ball or pass it to a teammate, or whether to shoot for a score or pass to a player who is in a better position. Tactical proficiency can be developed through activities that closely mirror game situations.

decision-making the ability to weigh up game situations and decide which option to take and when to take it

Game sense

Game sense is an approach to coaching that uses the game as the focus of the practice session. By focusing on the game (not necessarily a full game, but often a modified version of the game), players are encouraged to:

- start thinking strategically about game concepts
- become more tactically aware and able to make better decisions during the game
- develop skills within a realistic context rather than practising them on their own
- develop a greater understanding of the game being played.

FIGURE 6.33 Learning about rules, strategies and tactics educates players to make good decisions during a game.

By using a game sense approach, players are challenged to think about what they are actually doing and why. Game sense activities require players to perform skills in situations that are similar to those in a real game. Players are forced to weigh up the choice of which skill to perform, and how to perform the skill to complete the drill. These sessions help players quickly choose the appropriate technique at the right time during the heat of a game.

Game sense activities are an essential link between the development of skills or technical proficiency and being prepared to play in full-game situations.

Synchronicity

An even more advanced skill is the creation of movement sequences aligned with the movement of others. Sometimes these are synchronous movements that require two or more athletes to move in unison (at the same time as one another). Synchronised diving is an example of such an activity, where two divers perform the same dive simultaneously. Volleyball also requires synchronous movements in the skill of blocking a spike, in which two players jump up at the net together to perform the block.

Individual movements

Individual movements are performed on their own. Using the previous examples, a diver performing by themselves or a volleyballer independently performing a serve, dig or set are individual movements. In team sports, the individual movements performed by different players are combined to create a set play. This can occur at the same time or in sequence.

An example is when two soccer players run into the penalty area to help the player with the ball keep dribbling and provide options for a pass. When one volleyball player receives and passes a serve via a dig, then a different player sets the ball up, and a third player spikes the ball down for a winner, this is an example of individual movements happening in a sequence.

FIGURE 6.34 Synchronised diving involves two divers performing the same movements simultaneously.

6.6 ACTIVITIES

1 Drill down

a. Work with a partner and select a skill from a sport of your choice.
b. Describe a basic, intermediate and advanced skill drill that you could use when teaching the skill to a group of secondary school students. Make sure that your three skill drills show progression from basic to advanced.
c. Demonstrate any one of your skill drills to the class during a practical session.

2 Game, set, match

List as many examples as you can of where set plays and routines can be applied to the advantage of a sports team.

3 SSTEP parameters

Refer to table 6.2 and create a skill drill for each of the five steps using one of the following skill drill levels.

- Basic
- Intermediate
- Advanced

4 Creating a synchronous routine

In a group size of your choice, complete the following tasks in relation to *either* a dance routine or gymnastics routine.

a. Work together to choreograph (plan) a routine of your choice.
b. Practise the routine. Try to include synchronous movements between participants.
c. Video the performance using a tool of your choice, such as Dartfish or Coach's Eye. (There are many free options available for you to use.)

d. Using this footage, critique the performance, highlighting areas of individual and group strengths and weaknesses.
e. Use this feedback in your next stage of practice. Try to improve the quality of the individual and group performances.
f. Video the 'final' performance and again critique the quality of the performance.
g. Discuss the benefits of using ICT to improve performance, particularly in regards to synchronicity and the timing of movements.

6.6 Exercise

6.6 Exercise

Select your pathway

LEVEL 1	LEVEL 2	LEVEL 3
1, 2, 3, 4, 6	5, 7, 8, 9	9, 10

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Check your understanding

1. Advanced skill drills can be modified using speed, space, time, equipment and pressure. True or false?
2. Slowly progressing through intermediate skill drills includes only moving drills. True or false?
3. MC Game sense allows for:
   A. mastery of skills.
   B. learners to learn in a closed environment.
   C. developing tactics.
   D. the separation of skills into their parts.
4. Grid games are useful for associative and autonomous learners. True or false?
5. MC The most appropriate skills training for a cognitive learner is:
   A. basic.
   B. intermediate.
   C. advanced.
   D. grid games.

Apply your understanding

6. **Outline** the key differences between a basic, intermediate and advanced skill drill.
7. **Explain** how training and skill drills can be used to build and improve the game sense of an athlete.
8. **Describe** what 'game sense' means to you.
9. **Identify** and **justify** which type of skill drill — basic, intermediate or advanced — is best suited for cognitive learners.
10. **Identify** and **justify** what stage of learning 'game sense' is best suited to.

LESSON
6.7 Appraising movement proficiency

LEARNING INTENTION

- Analyse and measure movement for improvement.

6.7.1 Appraisal methods

Movement proficiency can be analysed and measured in a number of ways. These include:

- observing the performance live
- judging or scoring the performance
- measuring the outcome of the performance
- comparing the outcome with percentile charts
- data collection and movement analysis
- criteria checklists
- skill tests.

Not all these methods can be applied to all types of movements or skills. In this lesson, each method will be described, and an opportunity to use each method for measuring performance will be provided.

ENGAGE

In gymnastics, would you rather be judged subjectively or objectively? What do you think is the fairest way to appraise movement?

FIGURE 6.35 In gymnastics, judging can be subjective or objective.

6.7.2 Measuring proficiency

Movement skills can be measured for proficiency by assessing the quality, efficiency and outcome of the performance.

The link between **proficiency of movement (or skill proficiency)** and the quality of performance is very strong. The characteristics of proficient movement are:

- certainty of achieving the performance goal
- minimising energy expenditure during the performance
- minimising the movement or performance time (in activities where speed is essential).

proficiency of movement (or skill proficiency) the achievement or attainment of a movement goal with maximum certainty, minimum energy expenditure and minimum movement time (where speed is essential)

It is possible to assess movement or skill proficiency in terms of both its process (e.g. the quality and efficiency with which the elements of the skill are performed) and its outcome (e.g. some kind of result, such as a goal, or some form of measurement, such as a distance achieved).

To appraise movement proficiency, some method, technique or tool for assessing the level of performance is needed. These are called **performance measures**.

performance measures methods, techniques or tools for judging or assessing the level of performance

Factors that affect appraisal

Before applying performance measures, a number of factors need to be considered. These factors can affect our judgement of the movement performance:

- individual characteristics of the performer, such as age, size, body type, fitness level and experience
- level of performance (e.g. novice or elite, club, state or national competition)
- performance context (e.g. practice or a game)
- environmental conditions.

FIGURE 6.36 Many sports, like figure skating, use experts and clear criteria to judge the success of performance.

We also need to consider who determines the criteria for appraisal and who sets the standards on which to assess the movement. In many national and international sporting competitions (such as gymnastics and figure skating), movement requirements, categories, deductions and degrees of difficulty are all determined by sporting bodies and federations. They use experts to decide what a skilled performance should look like.

It is also important to realise that, while most athletes will largely follow the principles of proper technique, some will modify their style to suit themselves. This explains why there are many variations of accepted techniques. For this reason, it is important to evaluate whether a variation is sound or weak rather than 'right' or 'wrong'. The aim should not be for everyone to use the same 'perfect' technique.

6.7.3 Performance measures

A range of performance measures are available for appraising performance. Some of these are outlined below.

objective judgements use methods, techniques or tools for appraising the proficiency of the movement performance

subjective judgements based on feelings or impressions and which do not involve the use of techniques or tools for appraising the proficiency of the movement performance

Observation

Observation of performance can be used to appraise both the level of skill proficiency during the performance and the outcome or result of the performance. Observation can be seen as a continuum from 'highly **objective**' to 'highly **subjective**'.

Observations of performance can be made more objective by focusing on the specific criteria, qualities and/or desirable aspects of a performance, and assigning them categories (e.g. excellent, good, average, fair, poor) and/or rating scales (e.g. 5, 4, 3, 2, 1).
To develop criteria to be used in the appraisal of movement performance, follow the steps below.

1. *Specify the nature of the movement or skill*. Decide on exactly what it is you want to appraise.
2. *Establish the performance criteria you want to use*. Determine and list the particular aspects of the movement or skill that you will be appraising and making judgements about.
3. *Practise applying the criteria*. To develop the analytical skill to appraise movement performance, you need to practise.

Checklists and rubrics are usually developed from performance criteria. If a particular part of the movement or skill is performed correctly, a tick or rating is given to it. This information can be used to help performers fix faults or errors and improve their skill. Checklists, rubrics and rating scales can be used for self-appraisal, peer appraisal and by teachers or coaches to assess performance.

FIGURE 6.37 To be fair to all contestants, judges of dance competitions look for established moves performed 'correctly' and evaluate contestants' level of proficiency.

Skill tests and performance achievements

Skill tests provide an indication of the outcome rather than the skill or movement process. There are many tests used to measure skill performance. An example is the wall target throwing test, which can be used to assess the accuracy with which individuals perform the overarm throw. It is possible to use a range of performance achievements to measure aspects of a movement performance. These measures can include speed, distance, time, height, weight and accuracy, and are often expressed numerically. For example, 'Lachlan ran 13.5 seconds in the 100-metre sprint'.

Norm- and criterion-referenced standards and percentile ranks

Norm-referenced standards (or normative scales) allow an individual's score or result to be compared with the performance of a representative group (usually a reference group, such as a nationwide sample of students of similar age and gender) in the same task or test.

Criterion-referenced standards interpret an individual's score or result compared to others of a similar age, gender and so on. Percentile ranking is common. Percentiles indicate the percentages of a reference group that scored above or below a given score on the scale. For example, 'Siobhan achieved a score that put her in the 85th percentile'. This indicates that she has scored higher than 84 per cent of those taking the test; that is, in the top 15 per cent of the compared population.

Statistical information

Statistical information obtained from an **activity analysis** (or games analysis) can also be used to appraise performance. The most common statistical data obtained from games analysis includes:

- possession skills (e.g. marks or passes received in Australian Rules football)
- disposal skills (e.g. kicks and handballs, including the effectiveness or otherwise of these in Australian Rules football)
- successful and unsuccessful scoring attempts.

activity analysis recording and analysing movement and skill data from a game, sport or activity; the data is analysed to appraise a player's performance

Other data, such as movement patterns and intensities, can also be used when measuring and appraising a player's performance.

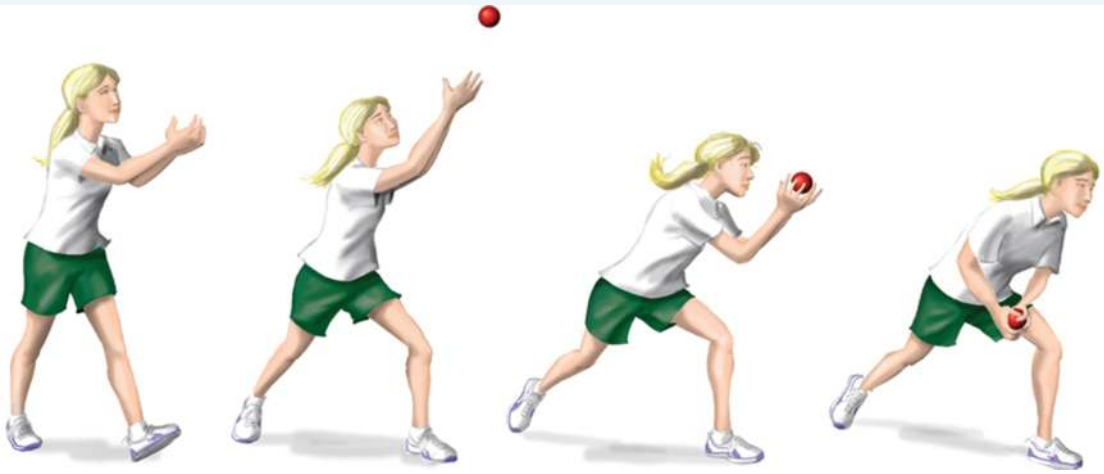
6.7.4 Performance appraisal of selected motor skills

Here, we look at the appraisal of movement proficiency in a number of motor skills, ranging from fundamental movement skills to sport-specific skills. Specifically, we consider the performance criteria for the catch, overhand throw and drop punt kick.

Performance criteria for the catch

1. Eyes are focused on the ball throughout the catch.
2. Preparatory position is assumed, with elbows bent and hands in front of the body.
3. Hands move to meet the ball.
4. Hands and fingers are positioned towards the ball to catch it.
5. Catch and control the ball with hands only.
6. Elbows bend to absorb the force of the ball.

FIGURE 6.38 Fundamental motor skill of the catch



on Resources

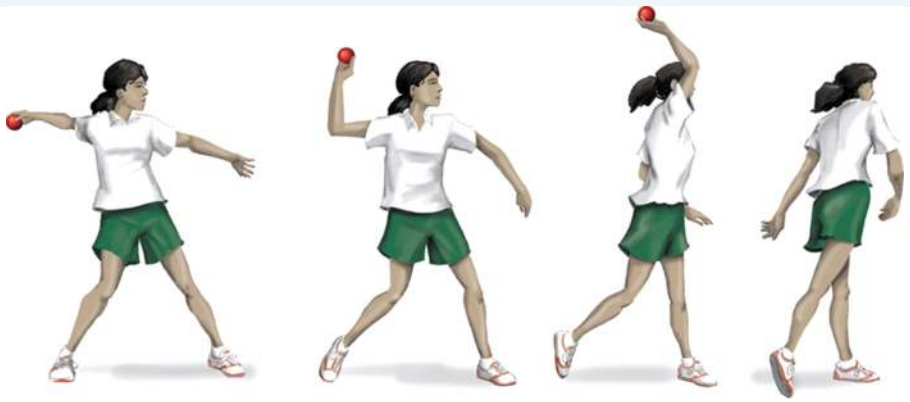
Video eLesson Catching (eles-0750)

Performance criteria for the overhand throw

1. Eyes are focused on the target throughout the throw.
2. Stand side on to the target.
3. Throwing arm is nearly straightened behind the body.
4. Step towards the target with foot opposite throwing arm during the throw.

5. There is a sequential hip-to-shoulder rotation during the throw.
6. Throwing arm follows through, down and across the body.

FIGURE 6.39 Fundamental motor skill of the overhand throw



on Resources

Video eLesson Overhand throw (eles-0751)

Performance criteria for the drop punt kick

1. Eyes are focused on the ball throughout the kick.
2. Ball is held at about hip height in front of the kicking leg.
3. Step forward onto the non-kicking foot.
4. Bend the knee of the kicking leg during the backswing.
5. Hip extension and knee flexion of at least 90 degrees during the preliminary kicking movement.
6. Guide ball down with one hand so it makes contact with the top of the kicking foot.
7. Arm opposite the kicking leg swings forward and sideward.

FIGURE 6.40 Fundamental motor skill of the drop punt kick

on Resources

Video eLesson Drop punt kick (eles-0751)

Other sport-specific skills

eles-0755 Video eLessons for the **golf swing**, **javelin throw** and **soccer throw-in** can be accessed in your Online Resources.

eles-0754

6.7.5 Qualitative analysis of human movement

eles-0756 Observing, analysing and appraising human movement performance using performance criteria and checklists is a form of **qualitative analysis**. Coaches and teachers need to be skilled in qualitative analysis to help them know how best to improve their players' performance.

qualitative analysis process of observing, analysing and appraising human movement performance

Qualitative analysis usually involves four key tasks:

1. preparation
2. observation
3. evaluation/diagnosis
4. intervention/error correction.

FIGURE 6.41 Four key tasks of qualitative analysis

Preparation involves the coach or teacher developing knowledge about the key performance features of a movement or skill, as well as the common errors that performers exhibit. They gather this information from scientific research, expert opinion and personal experience.

During observation, they gather appropriate information about the movement or skill. The most common strategy involves observing **movement phases**. This involves dividing the movement or skill into a number of phases, such as the preparation phase, the execution phase and the follow-through phase. Movement phases can be further divided into **key elements**. Key elements are distinct actions that join to make up a phase. For example, in the execution phase of a golf drive, the key elements are the weight shift, hip rotation, head position, and arm and club extension. Phases and elements can be seen in most of the skill criteria and checklists provided previously in this topic (e.g. the performance criteria for the overhand throw in section 6.7.4).

movement phases division of a movement or skill into a number of phases or parts, such as the preparation phase, the execution phase and the follow-through phase

key elements distinct actions that join to make up a movement phase of a skill

The third key task of qualitative analysis is the evaluation or diagnosis of the desirable (strengths) and undesirable (weaknesses) parts of the movement or skill performance. This leads into intervention or error correction. During this task, the player is provided with feedback, usually while practising, to improve their performance.

DID YOU KNOW?

An athlete can only improve their skills if they are given specific feedback about their performance. Elite athletes and coaches rely on teams of people who gather data about the performance of the individual players, the team and their opponents. This data is used to refine and, at times, change an athlete's technique, the team tactics, or the way an opponent is matched up.

6.7.6 Video analysis software

Video analysis software is an important tool in qualitative analysis. It provides:

- the chance to observe movement in greater detail
- unlimited replays
- split-screen and overlay options, to help compare performance
- the ability to mark up a performance, to show key features (e.g. by adding graphics to a video).

Several companies, including Dartfish (figure 6.42), offer video analysis programs and packages especially designed for use by teachers and students. There are also a range of apps that can be used on digital devices.

FIGURE 6.42 Video analysis software can be an important aid in qualitative analysis and performance appraisal.

https://www.dartfish.com/mobile

6.7 ACTIVITIES

1 Appraisal

Suggest which method of appraisal (subjective or objective) is best suited to each of the following performances and explain your reasoning:

a. tower diving
b. tennis rally
c. hockey penalty stroke
d. 100-metre sprint.

2 Qualitative analysis and feedback

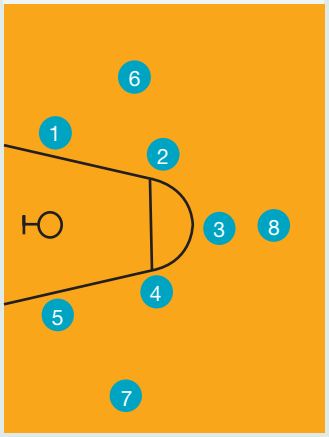
a. Using a video analysis app and/or the performance criteria for the drop punt or overhand throw, complete a qualitative analysis of your own or a peer's technique. Give feedback by outlining at least two errors to correct to improve the technique and suggest ways to achieve this. Complete the same process for a related movement. For example, for an overhand throw, try a volleyball or tennis serve; for the drop punt, try a soccer kick.
b. Reflect on how the performance criteria for analysing the movements are similar and different.
c. Identify how the error correction and feedback provided for the first skill can be applied to the second skill.

3 Measuring performance and skill proficiency

Basketball goal shooting

a. Set out eight cone markers around the key, as shown in figure 6.43.
b. Begin at cone 1 and have three shots at goal. Count the number of successful shots and record this score.
c. Continue to the rest of the marker cones in sequence and repeat the three shots at goal. Record the number of successful attempts at each cone and the number of successful attempts in total.
d. Additionally, or alternatively, you can begin at cone 1 and attempt to shoot a goal. Continue taking shots until you are successful and then move on to the next cone and repeat. Count and record the total number of shots it takes you to score a goal successfully at each cone marker and in total.

FIGURE 6.43 Basketball goal shooting set-up



Basketball free throw shooting

a. Have 10 shots at goal from the free throw line.
b. Repeat three times, recording the number of successful shots in each batch of 10 shots, as well as the total number that were successful.

Basketball ball handling and dribbling

a. While dribbling the ball, run in a figure-eight shape twice around two marker cones placed 10 metres apart. Record the time taken to complete the task.
b. Repeat, but this time, run and dribble in the opposite direction around the cones. Record the time taken to complete the task.

4 Comparing tests

a. Compile the whole class's results from activity 3 and calculate the group's average scores as a proficiency benchmark for each test.
b. Answer the following questions:
   i. Based on the benchmark proficiency score for each test, how did you perform?
   ii. Which skill did you perform best at?
   iii. Which skill did you perform least well at?
   iv. Using these results, what goals can you set for yourself?

5 Set the test

Design three other simple skill proficiency tests that could be used in a sport of your choice. Be prepared to explain these tests to the rest of the class.

6 Performance appraisal by activity analysis

a. In groups of three, undertake an activity analysis of a player in a sport of your choice. This can be done by observing your class playing sport, observing a match played locally, attending an elite-level match or viewing a video of a match.
b. Record your data using the sample tables provided in the **Activity analysis** worksheet in your Online Resources.

doc-14828

7 Performance appraisal of selected motor skills

a. Over a period of three to five sessions, teach one of the fundamental motor skills to a small group of younger children.

doc-14829

b. At the end of the instructional period, assess their motor skill proficiency. Use the **Fundamental appraisal** worksheet in your Online Resources to help you.

6.7 Exercise

6.7 Exercise

Select your pathway

LEVEL 1	LEVEL 2	LEVEL 3
1, 2, 3, 4, 5	6, 7	8, 9, 10

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Check your understanding

1. MC An advantage of using a video analysis app for appraisal and feedback is that it:
   - A. can be slowed down for better analysis.
   - B. can be stored to be reviewed later.
   - C. makes it easier to review performance against the relevant criteria.
   - D. All of the above
2. MC Identify the correct definition of key elements.
   - A. Continuous actions that join to make up a movement phase of a skill
   - B. Distinct actions that join to make up a movement phase of a skill
   - C. Synchronous actions that join to make up a movement phase of a skill
   - D. Distinct actions that join to make up an effective defensive phase of a skill
3. Having clear criteria against which to measure performance can increase consistency in feedback. True or false?
4. Qualitative analysis provides knowledge of both performance and results. True or false?
5. MC The final stage of qualitative analysis is:
   - A. preparation.
   - B. observation.
   - C. evaluation.
   - D. error correction.

Apply your understanding

6. **Outline** the stages of qualitative analysis.
7. **Explain** how feedback can best be used to improve someone's tennis serve.
8. **Discuss** the merit of using performance criteria to evaluate a skill in comparison to using only the outcome of the performance as a measure of success.
9. How should your movement proficiency be assessed in a school situation? Think about which of the methods of assessing movement proficiency is the most practical in a school situation and why. **Identify** which method of assessing movement proficiency is most accurate. **Explain** your answer.
10. **Compare** the advantages and disadvantages of using apps and video software for assessing movement proficiency.

LESSON
6.8 Review

Hey students! Now that it's time to revise this topic, go online to:

Review your results

Watch teacher-led videos

Practise questions with immediate feedback

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6.8.1 What have I learned?

- The fundamental motor skills include common movement activities such as running, jumping, catching, throwing, kicking and striking. They are the foundational movements to the more specialised, complex skills used in games, sports and physical activities.
- Skill acquisition relates to how individuals learn motor skills.
- To master skills, learners progress through different stages, with everyone starting at the cognitive stage.
- There are different types of feedback and practice and all are important in skill learning and acquisition.
- Biomechanics is the science that applies the laws of mechanics and physics to human movement.
- Summation of forces can involve either sequential summation of forces or simultaneous summation of forces.
- Impulse refers to the amount of force applied to an object and the period of time over which this force is applied. It can be manipulated to increase the change in momentum of an object or decrease the risk of injury.
- Speed of release is largely determined by the principles of force production (summation of force and impulse).
- Accuracy in throwing and striking skills is often obtained by applying the concept of 'flattening the arc'.
- The stability of an object depends on a number of factors, including the area of the object's base of support; the height of the centre of gravity of the object above the base of support; and the position of the line of gravity relative to the base of support.
- Measures used to assess movement proficiency include observation, checklists, rubrics and rating scales, measurements, norm- and criterion-referenced standards and percentile ranks, and statistical information.
- Skills should be practised through basic skill drills to begin with, before continuing on to more complex intermediate and advanced drills, and, eventually, to game-like practices such as grid games and game sense drills.

ESSENTIAL QUESTION REVIEWED

How can I improve performance?

Evaluate your initial response to the essential question now that you have studied the topic.

on Resources

Interactivity Crossword (int-9001)

6.8.2 Key terms

activity analysis recording and analysing movement and skill data from a game, sport or activity; the data is analysed to appraise a player's performance
angle of release angle at which a projectile is released
associative stage second stage of skill learning. During the associative or practice stage, the individual is beginning to get the feel of the movement and fewer errors are made.
augmented feedback information provided by visual, verbal or aural (hearing) signals
autonomous stage third and final stage of skill learning. In the autonomous or automatic stage, the individual is able to complete the skill virtually without conscious control.
base of support part or parts of the object in contact with the support surface
basic skill drills practice drills designed to allow the individual to learn and perform skills in an environment that ignores outside elements such as the opposition or movement
centre of gravity the point in any object or body through which the downward force of gravity acts
closed skills skills performed in a stable and predictable environment. They allow the performer to plan their movements in advance.
cognitive stage first stage of skill learning. Individuals who are at the cognitive or beginner stage need to know how to perform the basic movement patterns of the skill in the correct sequence.
continuous skills skills that have no distinct beginning or end; such skills or movements are often repetitive or rhythmic in nature
decision-making the ability to weigh up game situations and decide which option to take and when to take it
discrete skills skills or movements of brief duration that have a distinct beginning and end
distributed practice short sessions interspersed with periods of rest, during which either feedback is provided or another skill is practised
feedback information provided to a performer about the quality and/or outcome of the performance
fine motor skills delicate, precise movements that engage the use of small muscle groups
force summation the correct timing and sequencing of the parts of your body and muscles through a range of motion
grid games an extension of intermediate and advanced skill drills; take place within a grid or defined area and usually involve a relatively small number of players
gross motor skills movements involving the use of large muscle groups that result in a coordinated action
impulse the force applied to an object and the length of time the force is applied; change in momentum
key elements distinct actions that join to make up a movement phase of a skill
kinaesthetic feedback feedback about the 'feel' of a movement skill
knowledge of performance feedback about the quality of the performance itself
knowledge of results feedback about the outcome of the performance
line of gravity imaginary vertical line passing downward through the centre of gravity of a body or object
massed practice practice of a longer duration
mental practice involves imagining or visualising a skill in the mind
movement phases division of a movement or skill into a number of phases or parts, such as the preparation phase, the execution phase and the follow-through phase
objective judgements use methods, techniques or tools for appraising the proficiency of the movement performance
open skills skills performed in an environment that is variable and unpredictable; usually externally paced and performed in a constantly changing environment
part practice breaking down and practising a skill in its 'parts' or sub-routines
performance measures methods, techniques or tools for judging or assessing the level of performance
physical practice practice in which the skill is actually performed physically
proficiency of movement (or skill proficiency) the achievement or attainment of a movement goal with maximum certainty, minimum energy expenditure and minimum movement time (where speed is essential)
projectile the object propelled into the air as a result of force application, such as a soccer ball or even a body itself
projectile motion the motion of objects such as balls or implements that are thrown, struck or kicked into the air
qualitative analysis process of observing, analysing and appraising human movement performance
serial skills series of discrete skills strung together to form a more complicated action
skill a learned ability to bring about an expected result with certainty, often with little effort

stability an object's resistance to movement from a balanced position. Static stability is when the object is at rest; dynamic stability is when the object is in motion.
subjective judgements based on feelings or impressions and which do not involve the use of techniques or tools for appraising the proficiency of the movement performance
tactical proficiency the ability to weigh up game situations and decide which option to take and when to take it
velocity of release the single most important factor for achieving maximum distance of a projectile; the greater the velocity of release, the greater the distance achieved
whole practice form of practice in which a skill is practised in its entirety

6.8 Exercise

6.8 Exercise

Select your pathway

LEVEL 1	LEVEL 2	LEVEL 3
1, 2, 3, 4, 5, 6, 7, 8, 9, 10	11, 13, 14	12, 15

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Check your understanding

Identify whether the following statements are true or false.

Statement	True or false
1. Gross motor skills involve a small number of muscles and accurate movements.	
2. Observations of performance are not useful because they are always subjective.	
3. Individual characteristics or the level of performance do not need to be considered when appraising movement proficiency.	
4. A discrete skill has no distinct beginning or end.	
5. In the autonomous stage of skill learning, the individual can complete the skill with little conscious thought.	
6. A skill learned in one activity or game can't usually be transferred to another game situation.	
7. Absorbing the force means that the object in motion is being slowed or stopped.	
8. Synchronous movements involve moving at the same time.	
9. Your base of support isn't important in maintaining stability.	
10. To improve quickly, you should start with advanced skill drills.	

Apply your understanding

11. **Link** a fundamental movement skill to a manipulative skill. **Describe** how this works in a sport of your choice using an example.
12. **Explain** how you would ensure consistency in assessing a gymnastics or dance routine. List the criteria you would expect judges to follow.
13. For a specific sporting skill, **outline** a plan of action to take a beginner from the cognitive stage through to the associative stage of skill learning.
14. For a specific sporting skill, **explain** how you would close this skill down so that a beginner could learn it, and then how you would slowly open it up to develop the learner's skill.
15. Select a sport and **describe** a typical training session that improves performance in a game situation.

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Online Resources

on Resources

Below is a full list of **rich resources** available online for this topic. These resources are designed to bring ideas to life, to promote deep and lasting learning and to support the different learning needs of each individual.

Topic PDF

- 6.1 Proficiency of movement (tpdf-3594) ☐

Digital documents

- 6.2 Basic skills (doc-14827) ☐
- 6.4 Feedback ☐
- 6.5 Stability (doc-14833) ☐
- Summation of forces (doc-14834) ☐
- Projectile motion (doc-14832) ☐
- 6.7 Activity analysis (doc-14828) ☐
- Fundamental appraisal (doc-14829) ☐

Video eLessons

- 6.1 Movement, skill and proficiency (eles-6103) ☐
- 6.2 Catching (eles-0750) ☐
- Overhand throw (eles-0751) ☐
- Drop punt kick (eles-0751) ☐
- Golf swing (eles-0755) ☐
- Javelin throw (eles-0754) ☐
- Soccer throw-in (eles-0756) ☐

Interactivities

- 6.8 Crossword (int-9001) ☐

Solutions

- 6.8 Answers: topic 6 ☐

Weblink

- 6.4 Freestyle ☐
- 6.5 Video analysis software ☐

Teacher resources

There are many resources available exclusively for teachers online.

To access these online resources, log on to **www.jacplus.com.au**.

7 Participation, collaboration, teamwork and fair play

LESSON SEQUENCE

7.1 Overview 287
7.2 Benefits of physical activity 288
7.3 Promoting physical activity 292
7.4 Collaborating in groups or teams 298
7.5 Leadership and roles in physical activity 304
7.6 Fair play and ethics in sport 312
7.7 Review 325

FIGURE 7.1 Good teamwork teaches many life lessons that are important in endeavours outside of sport.

LESSON
7.1 Overview

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Engage with interactivities

Answer questions and check results

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7.1.1 The benefits of being involved in sport

What sports or recreational activities do you do? Participation brings physical, social and emotional benefits. Being involved in sport is not just about playing; officials, umpires and coaches all play a part. The different roles in sport all have different responsibilities, but teamwork, leadership, fair play and ethics are essential.

ESSENTIAL QUESTION

How can teamwork, leadership and fair play increase an individual's involvement in physical activity?

STARTER QUESTIONS

1. How can physical activity improve your physical and social health?
2. What are the qualities of an effective team member?
3. What roles in physical activity exist other than that of a participant?
4. Why is fair play important in physical activity and sport?

on Resources

Video eLesson Participation, collaboration, teamwork and fair play (eles-6104)

LESSON
7.2 Benefits of physical activity

LEARNING INTENTIONS

- Suggest ways to encourage family, friends and community members to participate in physical activity.
- Describe how physical activity promotes connection and belonging.

7.2.1 Exercise affects all aspects of our wellbeing

Australians recognise the importance of physical activity in maintaining a healthy lifestyle. The link between participation in physical activity and good health is very strong. However, many people don't realise that exercise is important to all dimensions of health and wellbeing. Individuals and communities should encourage participation in physical activity as a way of maintaining and improving:

- physical health and wellbeing
- social health and wellbeing
- mental health and wellbeing (this can also be referred to as emotional health).

Physical activity has benefits for the entire community.

ENGAGE

FIGURE 7.2 Physical activity benefits our physical, social and mental health and wellbeing.

Make a list of the types of physical activity that are popular in your family? Would these be classified as organised sports or recreational activities? Consider the ways you could encourage others to participate in these activities too.

7.2.2 Why participate in physical activity?

Throughout our lives, we are encouraged to participate in regular physical activity. But why is this so important? There is strong evidence that a range of health benefits (physical, social and mental) are gained from regular active participation in physical activity.

Physical health benefits

Physical health and wellbeing benefits of participation in physical activity include:

- reduced risk and incidence of cardiovascular disease
- reduced risk and incidence of stroke and heart attacks
- lower risk of high blood pressure and reduction of blood pressure levels in people who already have hypertension (high blood pressure)
- reduced risk and incidence of type 2 diabetes
- reduced risk of some types of cancer (e.g. colon cancer)
- building and maintaining healthy bones, muscles and joints
- prevention of osteoporosis
- improved posture
- help in achieving and maintaining a healthy body weight
- protection against musculoskeletal injuries in children
- improvement in movement and motor skills.

FIGURE 7.3 Regular physical activity helps support physical, social, emotional and mental health and wellbeing.

Social health benefits

Social health and wellbeing benefits of participation in physical activity include:

- reduces isolation and exclusion
- encouragement of family links
- builds new and strong relationships
- improves interpersonal and communication skills
- reduces workplace absenteeism (being absent from work) due to illness.

Emotional and mental health benefits

Mental health and wellbeing benefits of participation in physical activity include:

- reduction in depression, anxiety and stress
- enhanced self-esteem and self-confidence
- improved concentration
- better memory and learning
- improved sleep patterns.

7.2.3 Community benefits

In addition to the benefits that physical activity can have for the individual, it also benefits the community. Communities that participate in physical activity:

- develop strong social bonds
- become safer places
- become healthier places
- foster a sense of belonging and connection among individuals and groups
- gain environmental benefits, such as less pollution due to reduced car use and more walking and cycling (referred to as 'active transport')
- gain social and economic benefits, such as employment, sponsorships, local pride, role modelling and volunteer opportunities.

Culturally significant activities also provide the opportunity for different cultural groups to celebrate, share and enjoy physical activity with their own and the wider community. For example, First Nations Australian sportspeople can participate in events in which they represent their nation of origin or celebrate their connection to family and kinship by playing in memorial teams for family and friends who have died. Examples of national First Nations sporting events include the Charles Perkins National Football Championship Carnival (Australian Rules football), Koori Knockout (Rugby League) and the Imparja Cup (Cricket).

DISCUSS

Research a local physical activity facility or sporting club.

a. Discuss if and how the facility caters for cultural diversity.
b. Discuss the health implications of your response to part a.
c. Discuss possible implications for the community based on your research.
d. Suggest how this facility/club could increase inclusion. Outline the benefits, for individuals and for the community, of doing so.

7.2 ACTIVITIES

1 Town mayor

You are the local mayor of a new town. Decide what activities you will promote and which facilities you will build and outline why. Write a report on your plans.

2 Sport promotion

Create a flyer/jingle/speech that targets a particular group of people and promotes the benefits of sport to them. The group could be, for example, teenagers, the elderly or a particular migrant group.

3 Local research

Research how much money your local government spends on sport and physical activity.

a. Do you think the government is spending enough?
b. Do they target different sports equally?
c. Do you agree with the spending?

Justify your answer to each question.

4 Encouragement

Imagine you are talking to an adult member of your family, such as an uncle or aunt. You are encouraging them to take up some form of exercise or sport. Propose what you would say to them about the possible short- and long-term benefits.

5 Culturally significant physical activities investigation

Research a culturally significant sporting carnival or event in Australia, such as the Koori Knockout, NAIDOC netball cup, Riverland Pasifika sports carnival or the Imparja Cup. Include:

- when it was first introduced
- how this event helps build a sense of connection and belonging
- why these cultural events are important to all Australians.

doc-39558

Use the **Culturally significant physical activities** worksheet in your Online Resources.

6 Activities from Asia

a. Participate in a low-intensity activity that originated in an Asian culture, such as tai-chi (China) or yoga (India).
b. Identify and then link the physical, social and emotional benefits of participating in the activity.
c. Explore the importance of your chosen activity to the culture it comes from.

7.2 Exercise

7.2 Exercise

Select your pathway

LEVEL 1	LEVEL 2	LEVEL 3
1, 2, 3, 4, 5	6, 8, 10	7, 9

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Check your understanding

1. Physical activity only benefits the people participating. True or false?
2. Culturally significant events improve the sense of belonging among community members. True or false?
3. MC A physical benefit of physical activity is:
   - A. improved communication skills.
   - B. a sense of belonging.
   - C. reduced risk of lifestyle diseases.
   - D. decreased rates of absenteeism from work.
4. MC A social benefit of physical activity is:
   - A. improved cardiovascular fitness.
   - B. stronger relationships.
   - C. exclusion of certain groups.
   - D. enhanced self-esteem.
5. MC A community benefit of physical activity is:
   - A. improved concentration.
   - B. maintenance of a healthy body weight.
   - C. decreased risk of diseases such as cancer.
   - D. a sense of belonging and connection.

Apply your understanding

6. **Explain** the importance of physical activity to wellbeing.
7. **Justify** the need for all Australians to participate in physical activity.
8. **Describe** the importance of culturally significant physical activities for the wider community.
9. **Evaluate** the sport and physical activity options available to you in your town/city.
10. **Discuss** the importance of encouraging others to participate in physical activity.

LESSON
7.3 Promoting physical activity

LEARNING INTENTION

- Design promotional strategies to increase the physical activity of individuals and communities.

7.3.1 Participation in sport and physical activity

Over the past two decades, participation in sport and physical activity has steadily increased across the overall Australian population. During this time, the greatest increases have come from higher participation in non-sport-related physical activities, such as walking, bushwalking and fitness/gym. There has also been growth in individual physical activities, such as running/jogging and cycling. Despite these increases, more than half of the adult population and two-thirds of children aged 2–17 years do not meet the recommended national **physical activity guidelines**. **Health promotion** led by individuals and the community can help change these trends and making Australians more physically active.

physical activity guidelines the daily physical activity guidelines state that children and young people should do at least 60 minutes of moderate to vigorous exercise each day

health promotion the process of enabling people to increase their control over, and improve, their own health

ENGAGE

FIGURE 7.4 Top 10 sports and physical activities (15+ years) by number and percentage of participants.

Adults (15+)

Walking (recreational)	9 726 660 participants	44.3% participation rate
Fitness/gym	7 198 199 participants	35.2% participation rate
Running/athletics	3 426 979 participants	16.7% participation rate
Swimming	3 227 310 participants	15.8% participation rate
Cycling	2 522 819 participants	12.3% participation rate
Bush walking	1 376 103 participants	6.7% participation rate
Yoga	1 122 438 participants	5.5% participation rate
Football/soccer	1 118 595 participants	5.5% participation rate
Golf	1 015 790 participants	5.0% participation rate
Tennis	963 704 participants	4.7% participation rate

Look at the list of top 10 sports. How many of them have you participated in? Did any part of the list surprise you?

7.3.2 Physical activity options

Physical activity options can be classified as sport-related or non-sport-related physical activities. Sport-related physical activities involve developing skills that can later be used in competitive activities.

Non-sport-related activities are recreational activities in which the focus is on enjoyment, fitness and improving health. See table 7.1 for some examples.

TABLE 7.1 Sport- and non-sport-related examples of physical activity options

Examples of sport-related physical activities	Examples of non-sport-related activities
• running/jogging • swimming • cycling • football/soccer • basketball • netball • cricket	• walking • bushwalking • yoga • pilates • dancing (recreational) • fitness/gym • shooting

7.3.3 Physical activity in nature

Regardless of where you live in Australia, one of the major barriers to participation in sport and physical activity is access. In rural and remote locations, you may not have access to the facilities, equipment or number of people required to form teams. In major cities, access to public transport may stop you from attending training, games, gyms/fitness centres and other activities. One way to overcome this barrier is to use the natural environment in your local community for physical activity. This just means getting outside and visiting your closest green space to do some physical activity. Examples of green spaces include:

- public parks
- playgrounds
- sporting ovals
- rivers
- beaches
- walking trails
- national parks.

FIGURE 7.5 Exercising in the natural environment has additional benefits for individuals compared to exercise.

Research has shown that exercising in the natural environment is associated with:

- improvements in feelings of revitalisation, enjoyment and satisfaction
- increased energy levels
- decreases in tension, anger and depression
- more motivation to repeat the activity later.

7.3.4 Physical activity campaigns

As discussed, physical activity is important for people of all ages to maintain good physical, social and mental health and wellbeing. Individuals and communities can promote the positive impact of participation in physical activity through various campaigns, such as 'come and try' days and charity initiatives.

Come and try days

Come and try days involve organising a number of sports and recreational activities to be put on display for people to try. Participation is open to people of all ages, abilities and skill levels and activities are led by trained instructors. At come and try days, people can be encouraged and supported to try new physical activities. Another added benefit is the development of community and social networks, with key stakeholders working together to allow people to meet and develop new friendships.

FIGURE 7.6 Come and try days can bring new participants to a sport or activity.

Charity initiatives

It is common for non-government organisations and charities to use physical activity to raise money for their causes. Using physical activity to gather participants can increase awareness of the cause (e.g. a disease) and educate people of all ages to take action in leading a healthy lifestyle. Some widely known examples of charity initiatives that involve physical activity are Relay for Life and Jump Rope for Heart.

FIGURE 7.7 Organised events such as fun runs can be used to raise money and awareness for charities.

Relay for Life

This event raises money for the Cancer Council. It recognises and celebrates people who have overcome cancer or who are undergoing treatment, and celebrates the memory of loved ones lost to cancer. In the relay, individuals and teams take turns walking laps around a track throughout the night. Community stalls with music, games, food and fun create an enjoyable atmosphere.

Jump Rope for Heart

Jump Rope for Heart is a primary school fundraising event designed by the Heart Foundation and organised by individual schools across Australia. It incorporates a skipping program that helps students move and have fun while raising money for heart research, patient support and other programs that save lives.

FIGURE 7.8 Skipping is used to raise awareness and money for the Heart Foundation.

Running events

One of the most popular ways to promote physical activity within a community is through large running events. Traditionally, these included marathons, half-marathons, and 10 km and 5 km events. However, in recent years, novelty running events have become very popular. Colour runs, mud runs, glow runs and obstacle courses are held in towns and cities across Australia and they encourage individuals, friends, workplaces and schools to participate together.

FIGURE 7.9 Novelty runs using colour, mud or glow-in-the-dark elements have grown in popularity, drawing more competitors and increasing the fun.

7.3 ACTIVITIES

1 Physical activity in your community

a. For your own gender and age group, identify if the image of the top 10 sports and physical activities in figure 7.4 reflects what is happening in your own community.
b. Identify if your community has resources that promote physical activity or whether there are barriers that prevent activity.

2 Your physical activity

weblink

a. Predict what might happen to your own physical activity levels over the next year.
b. Research the **Australian physical activity and exercise guidelines** using the weblink in your Online Resources. Identify the recommended amount of physical activity required for:
  i. Children and young people
  ii. Adults (18–64 years)
  iii. Older Australians (65+)
c. Discuss how you could increase the amount of physical activity you do to improve your health.

3 Spaces for getting active

a. Identify local green spaces (such as beaches, rivers or parklands) and/or community spaces where individuals and groups can connect and participate in physical and social activities.
b. Plan an excursion to one of these places and reflect on the following:
  i. Identify the benefits of this space for physical activity.
  ii. Identify the physical activities being done in, and the groups currently using, the space.
  iii. Propose improvements to the space to encourage more physical activity from members of the community.

4 Promoting physical activity

In small groups, plan an activity that will encourage your school or community to engage in physical activity. Designing your own campaign for your school or community takes time, teamwork and careful planning to make it successful.

a. Make a list of the current sporting and recreational activities already happening in your community. Use this list to decide what your activity will be. Will it be a new activity? Will it build on an existing popular activity?
b. Discuss your concept with some key stakeholders. This could include school leaders, teachers, parents, community members and organisations, local sport and recreation service providers in your community and members of the local council. Will they support your campaign?
c. Plan your event. Where and when will it be held, who can participate, is there a cost associated and what will participants get to do on the day? How will people register for the event?
d. Increase awareness of your campaign in the community through advertising and promotion. School newsletters, Facebook and Instagram posts, posters in store windows and even media releases for local newspapers and radio can help get your message out. Use the **Sample media release** and **Sample draft letter for organisations** in your Online Resources to help.

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e. Host your event.
f. Measure the success of the campaign by seeking feedback from all of the individuals involved in making the day happen. This could be in the form of a questionnaire completed on paper or using Google Forms.
g. Celebrate the success of the campaign in your school and local community via newsletters, social media, newspapers and/or radio.

7.3 Exercise

7.3 Exercise

Select your pathway

LEVEL 1	LEVEL 2	LEVEL 3
1, 3, 4, 5	2, 6, 8	7, 9, 10

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Check your understanding

1. Football/soccer is the most popular sport and physical activity for Australians aged 15+. True or false?
2. More than half of the adult population does not meet the recommended national physical activity guidelines. True or false?
3. Health promotion can help change attitudes and behaviours, including physical activity patterns. True or false?
4. MC Which of the following is considered a non-sport-related activity?
   - **A.** Basketball
   - **B.** Yoga
   - **C.** Cricket
   - **D.** Cycling
5. MC Which of the following best reflects the benefits of exercising in the natural environment?
   - **A.** Feelings of revitalisation and satisfaction
   - **B.** Decreased tension and anger
   - **C.** Greater intent to repeat the activity at a later date
   - **D.** All of the above

Apply your understanding

6. **Describe** two examples of physical activity campaigns. **State** how they promote participation.
7. **Evaluate** the benefits of colour runs and mud runs for improving physical activity levels.
8. **List** three steps you must take when planning your own physical activity campaign.
9. **Justify** the importance of a thorough planning process when designing your own physical activity campaign.
10. **Propose** improvements to facilities in your school or community that would increase teenagers' physical activity habits.

LESSON
7.4 Collaborating in groups or teams

LEARNING INTENTIONS

- Describe the variety of roles that exist in physical activity.
- Demonstrate the qualities of an effective leader.

7.4.1 Teams and teamwork

A team is a group of people with complementary skills who are committed to a shared purpose. Success is more likely when there is great teamwork among everyone in the team. In this lesson, many aspects of teamwork will be investigated.

Being involved in a sporting team provides opportunities to:

- improve and develop individual and group skills
- meet other people who share a mutual interest
- work together with others to achieve a common purpose
- work and socialise with others, and develop friendships and relationships
- respond to challenging situations
- develop leadership skills
- improve self-confidence and self-esteem.

ENGAGE

FIGURE 7.10 Teams provide an opportunity for individuals to work together to achieve a common purpose.

Think about any teams you have been associated with in the past 12 months. Were they effective or ineffective, successful or otherwise? What was it about these teams that made them this way? What are the key elements of high-performing teams? How can great teamwork be developed?

weblink

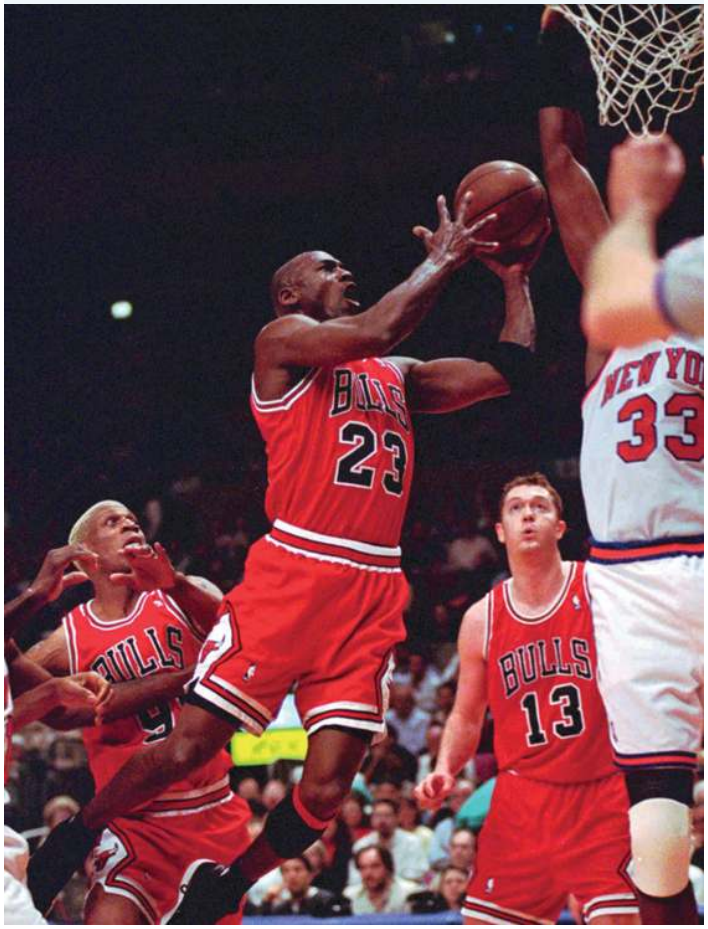
Use a range of research tools, including the internet, to create a database of definitions or characteristics of what makes a successful team. Collect at least three definitions. The **Teamwork** weblink in your Online Resources can help you get started.

7.4.2 Key elements of high-performing teams

Most people interested in how teams perform and how teamwork develops agree that high-performing teams usually have the same key characteristics. These can be summarised as follows.

- There is a clear and common purpose. The vision or purpose of the team has been defined and accepted by everyone. Goals and tasks are understood and committed to by everyone.
- There is a climate of trust among members of the team.
- Open and honest communication exists among members. Team members feel free to express their feelings on the goals and tasks, as well as on the group's operation.
- Diversity of opinions and ideas is encouraged.
- Creativity and positive risk-taking are evident.
- A sense of belonging and pride in accomplishments is promoted and encouraged.
- The team is constantly learning and aiming to improve.
- Procedures are developed to diagnose, analyse and solve problems.
- Everyone participates in leadership. While the team may have a formal leader or leadership group, leadership functions shift, depending on the circumstances, the needs of the situation and the skills of the team members.
- Decisions are supported and made together. For important decisions, there is open discussion of everyone's ideas and most, if not all, team members come to an agreement about the decision.
- There are clear roles and assignments. Expectations about the roles played by each team member are clear, and the workload is evenly and fairly spread among all members.
- The team is diverse and has a broad spectrum of team member types.
- Self-evaluation is apparent. Periodically, the team examines how well it is functioning and what may be limiting its effectiveness.

FIGURE 7.11 According to basketball legend Michael Jordan, 'talent wins games, but teamwork wins championships'.



7.4.3 Team building and developing teamwork

Developing a sense of team and teamwork can be a very complex and challenging task, but the rewards can be substantial. Most sportspeople would agree that a champion team will always beat a team of champions. Team building is often a key role of the coach. It involves putting strategies in place that allow for the characteristics of successful teams to develop and grow.

Selection of team members

The selection of team members is very important when building teams and developing teamwork. Effective teams are made up of a range of different types of team members. Each has a different skill set and experience and they develop confidence and trust in one another. Balancing skill sets and the experience of team members can help build an effective team.

Establishing a common purpose or goal

Establishing a common purpose or goal within the team is essential in team building. Teams need to understand what they are trying to achieve and why. This gives the team direction and offers each member a sense of value and commitment. Team members also need a detailed understanding of how the team will accomplish its tasks and goals.

Allocation of roles within the team

Assigning roles to team members helps individuals assume an active and productive position within the team. However, individuals must be willing and able to adapt to new roles if required by the team. Teamwork also requires people who are willing to help others in their roles at times.

FIGURE 7.12 Many sporting teams participate in training camps and challenge activities, the primary goal of which is team building and the development of team spirit.

Training on how to work together

A team must know how to work together to be productive and successful. Sometimes, specific training in how to work together is necessary or advantageous. Such teamwork training might include instructional workshops and courses on communication skills, conflict resolution, goal setting and other topics that provide skills necessary to be an effective team player.

Many teams also participate in training camps and challenge activities. The primary goal of these is team building and the development of team spirit. Typically, players are faced with challenging and demanding situations that require them to make good decisions while under pressure, to problem solve and to work together to achieve a certain goal. AFL football teams, Rugby League teams and the Australian cricket team are just a few of the many teams that attend these types of camps and activities.

Motivation: self-talk and encouragement

A variety of strategies can be used to motivate players and teams. Some of the easiest methods are ‘self-talk’ and encouragement of each other.

The famous Australian tennis player, Leyton Hewitt, regularly used self-talk to increase his motivation and energy levels during a match. His famous catchcry was 'come on', which he regularly shouted when he needed to energise himself. This often inspired others in the crowd to also make some noise to encourage him, thereby raising his motivation.

Similar tactics are used in team sports, where team members use encouraging language to increase each other's motivation. This encouragement should be reciprocal. This means that all team members have the responsibility to encourage others in addition to receiving encouragement.

Support within the team

Team support is more than being warm, empathetic and caring about your teammates. It is also about providing emotional, informational, instrumental and appraisal support.

- Team **emotional support** involves providing a shoulder to cry on, an encouraging word and sympathetic understanding of another team member's emotional pain or distress.
- Team **informational support** refers to sharing necessary information between team members.
- Team **instrumental support** focuses on the practical support that team members offer to each other.
- Team **appraisal support** is the help and feedback that individual team members give one another in making sense of a particular situation.

emotional support sympathetic understanding and behaviour towards another team member
informational support the exchange among team members of necessary information
instrumental support the practical support that team members offer each other
appraisal support providing feedback to others to make sense of a particular situation

Team building will be successful if the team members can provide each of these types of team support.

Communication between team leaders and team members

One of the most important contributions a team leader can make to a team is to make sure that team members can communicate openly with one another. This allows members to speak honestly and deal openly with any obstacles or problems that might be preventing the team from achieving its goals.

FIGURE 7.13 In rowing, the cox communicates with the rowers to ensure that everyone works together as a team.

7.4 ACTIVITIES

1 Recipe for success

a. List five benefits of being involved in a sporting team.
b. Summarise the ingredients required for an effective team.

2 There is no 'I' in team

What sayings or team bonding games do you know that promote teamwork? Create a class folder of games and sayings.

3 Teamwork

a. As a class, set up an obstacle course in the gym or other suitable area, using safe equipment such as gymnastics items (e.g. vaulting horse, beam, parallel bars, gym mats), benches, hoops, tyres, wall bars and ropes.
b. Divide the class into teams of about five or six students.
c. The aim is for each team to work together to move around the obstacle course in the shortest possible time. Each team could have one common handicap; for example, the team might have to transport a container of water around the course without spilling it, or have one team member who is blindfolded. The team has completed the course when its last member crosses the finish line.
d. **i.** At the end of the activity, reflect on your experiences and record some details about the factors and characteristics that helped each team to work together and function effectively as a single unit.
ii. Consider the factors and characteristics that prevented cooperation and effective teamwork.

4 Assessing teamwork

a. **i.** List the characteristics that you think are desirable in team members (e.g. in a game of basketball). The focus should be on the factors that influence teamwork and being a valued member of the group.
ii. As a group, highlight the five main characteristics that you think are important in a team player.
iii. After this, design a rubric for assessing these five characteristics. A rubric is a table or grid that lists the criteria for assessing each characteristic you have chosen.
b. Play a game of basketball against another group that has completed their own rubric on what they think is important in a team player.
c. After the game, each team member assesses a teammate using the designed rubric. From this, each student should end up with a completed rubric describing their strengths and weaknesses as a team member.
d. Using the rubric describing their strengths and weaknesses, each student should write two short summaries on 'What makes me a good teammate?' and 'How can I become a better teammate?'

7.4 Exercise

7.4 Exercise

Select your pathway:

LEVEL 1	LEVEL 2	LEVEL 3
1, 2, 3, 4	5, 7, 8	6, 9, 10

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- Receive immediate feedback
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Check your understanding

1. When there is great teamwork in a group environment, you are more likely to succeed. True or false?
2. Team environments allow for opportunities to improve self-confidence and self-esteem. True or false?
3. High-performing teams succeed when team members hide their feelings for the good of the team. True or false?
4. MC A player making comments such as 'you can do this' to themselves during a match is using:
   - A. reciprocal motivation.
   - B. supportive behaviour.
   - C. positive self-talk.
   - D. bragging.
5. MC Which of the following best describes appraisal support?
   - A. Providing encouraging words and recognising when a team member needs to vent their frustration
   - B. Providing essential information to a team member
   - C. Providing practical support to team members
   - D. Providing feedback on the quality of a team member's performance

Apply your understanding

6. **Compare** the difference between high-performing teams and low-performing teams.
7. **Identify** and **discuss** the characteristics you have that would contribute to the success of an effective team.
8. **Explain** the benefits that participating in team sports can have for individuals.
9. **Propose** ways that a coach or team member can motivate their team to perform well.
10. **Research** and create a brief report on a team leader who you believe made a significant contribution to the success of their team. Provide information about the leadership qualities they demonstrated. **Evaluate** how these qualities contributed to the success of the team.

LESSON
7.5 Leadership and roles in physical activity

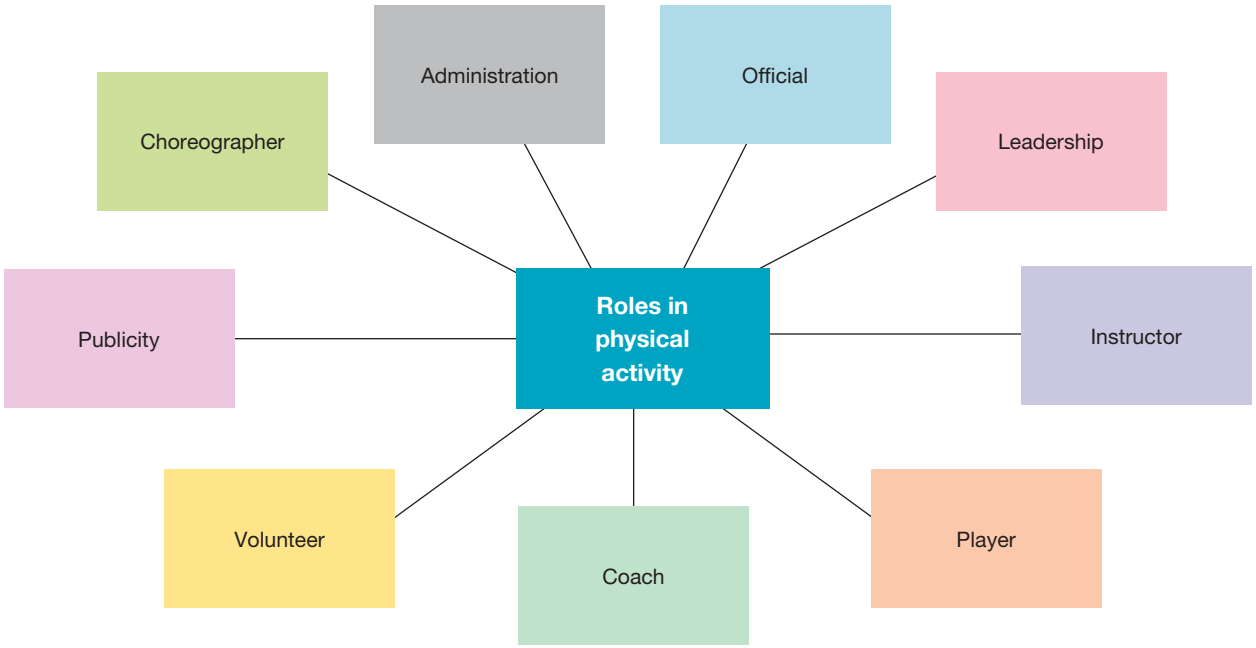
LEARNING INTENTIONS

- Demonstrate the qualities of an effective team member.
- Understand the skills of a leader.
- Use strategies to persist in physical activity when faced with challenging circumstances.

7.5.1 The various ways people can become involved in sport

Participants in sport are expected to undertake specific roles and to accept the responsibilities that go along with those roles. Figure 7.15 shows some key roles that people can take on in sport. These roles are the focus of this lesson.

FIGURE 7.15 Roles in sport



ENGAGE

Individuals can be involved in sport in many ways. These include:

- as a player, captain or coach
- as an official, umpire, referee, timekeeper or scorer
- as an administrator, club president, team manager, trainer, runner or equipment manager.

It is very important that the roles and responsibilities of each participant are clearly defined. This allows the sport to be conducted in a fair and orderly manner.

List the various roles you have played in organised sport, either in school or outside school. Which roles have you enjoyed performing and why? Which roles did you least enjoy performing and why?

FIGURE 7.14 Teammates are responsible for the team culture and the team's success.

7.5.2 Players

Players participate either as individuals or as team members, depending on the nature of their sport or activity. In either case, players usually need to work closely with coaches and other support personnel to improve their performance and achieve their best. Team players also need to work cooperatively with others to help the team achieve its goals. Players have a number of expectations to fulfil as part of their role in sport and physical activity, such as:

- attending training and games, and working cooperatively with others to achieve individual and team goals
- paying attention to the coaching staff, and being disciplined during both practice and competitive matches
- participating positively and displaying good sporting conduct
- showing respect towards teammates, opponents, coaches and officials.

7.5.3 Team captain

One player in a team who has a special role to play is the team captain. Captains are often selected by teammates but may be selected by the coach or administrators of the sport. This is because such people have experience, ability in and knowledge of the game, as well as an understanding of strategies and tactics. The captain is a leader and is often expected to:

- make important strategic and tactical decisions in the game
- be responsible for the conduct and behaviour of the team in general and of fellow players
- lead by example and be an inspiration to other players
- perform media and sponsorship duties on behalf of the team
- communicate with officials (umpires and referees) and administrators on behalf of the team
- support and help the coaching staff.

FIGURE 7.16 The leadership of the captain is important to team success.

7.5.4 The coach

Most athletes and sporting teams have a coach to help them achieve their goals. Coaching is central to the development of sport at every level, whether in a school environment, the local club or at an elite level. Coaches help athletes to achieve their full potential. They are responsible for training athletes by analysing their performances, teaching skills and tactics, and providing encouragement, motivation and other forms of psychological assistance.

Roles and responsibilities of the coach

The roles and responsibilities of coaches are very broad (see figure 7.17). While a coach may not always be personally responsible for providing all of the expertise in each particular area, their overall aim is to prepare the players for competition by improving their performance.

FIGURE 7.17 The role of the coach

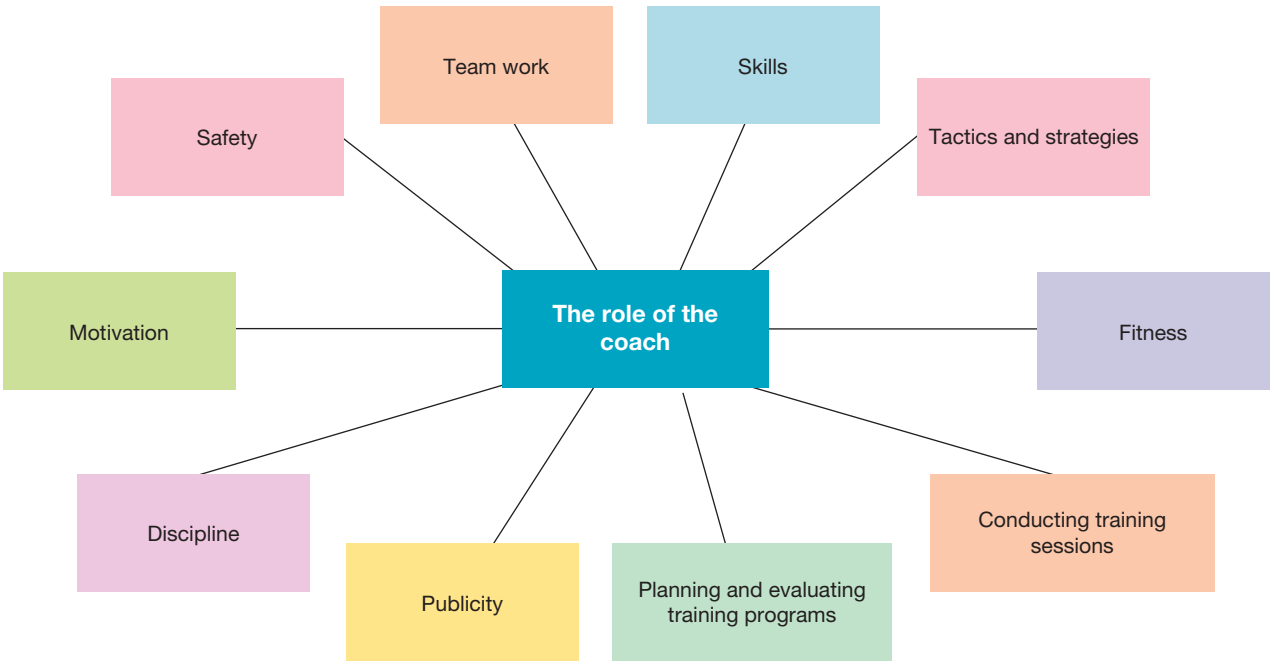


FIGURE 7.18 The role of the coach is central to the development of sport at just about every level of competition and performance. Former Socceroos coach Ange Postecoglou talks to the players during a team training session.

Skills and characteristics of an effective coach

Effective coaches possess various skills, characteristics and personal attributes that help them to develop productive relationships with the athletes they work with. Some of these skills are described below.

- *Knowledge of the game*. Coaches must possess a thorough knowledge of the rules, skills, techniques and strategies for their sport.
- *Knowledge of coaching principles and sports science.* Coaches need to understand and be able to apply coaching principles, skill acquisition theory and biomechanical principles. They also need to understand exercise physiology and sports psychology.

- *Communication skills*. Coaches must be able to communicate effectively with their athletes. They need well-developed verbal and written communication skills as well as the ability to effectively use non-verbal communication, such as body language and gestures.
- *Observation and analysis skills*. Coaches must be able to observe and analyse a player's performance and, if necessary, modify and correct the player's technique or performance.
- *Organisational and management skills*. Coaches must have the ability to plan and put in place training schedules and programs, and to manage and coordinate the role of other coaching and support staff.

Some of the characteristics and personal attributes of an effective coach are:

- *Patience, persistence, understanding and enthusiasm*. Coaches need to be aware of and understand the personal goals and motivations of their athletes. By being enthusiastic, they increase team spirit, and encourage players to give their maximum effort.
- *Values and integrity.* Coaches should personify the positive aspects of involvement in sport, such as respect, responsibility, determination, fair play and good sporting conduct. The use of a code of behaviour can ensure that coaches deal with their athletes honestly and demonstrate the appropriate values and integrity expected of a coach.

7.5.5 Officials — umpires and referees, scorers and timekeepers

An **official** is any person who controls the actual play of a sporting competition. They do this by applying the rules and laws of the sport to make judgements on performance, time, scores and whether any rules have been broken. Officials in sport are most commonly referred to as umpires or referees, scorers and timekeepers.

The duty of the sports official is to act with integrity during competition and to perform their role accurately, consistently and objectively.

FIGURE 7.19 Umpires and referees are responsible for ensuring players adhere to the rules.

Umpires and referees

Umpires and referees are responsible for regulating the conduct and playing of sporting events. They are responsible for:

- making sure that sports are played correctly and fairly
- penalising players who break the rules
- resolving disputes between teams
- making sure everyone plays in the spirit of the game.

Umpires and referees need to have a thorough understanding of the sport's rules and the ability to make decisions quickly, accurately and fairly, often while under pressure. They must have well-developed communication skills and good attention to detail. They also have personal and legal responsibilities towards the players. For example, they must stop the game if the safety of players is at risk.

official any person who controls the actual play of a sporting competition by applying the rules and laws of the sport to make judgements on performance, time scores and whether any rules have been broken

umpires and referees sporting officials responsible for regulating the conduct and playing of sporting events

scorers sporting officials responsible for maintaining an accurate record of the scores during a game or event

Scorers

Scorers are responsible for maintaining an accurate record of the scores achieved during the course of a game. This information is usually recorded on a scoresheet or scorecard, with at least some of the information displayed on a scoreboard. This lets all players, spectators and other officials know the state of the game at all times.

In some sports, scoring can be quite a complex process, and the person fulfilling this role needs to have a good understanding of the complexities of the task. For example, the scorer in cricket records all runs scored, both

in total and by each batsperson, all wickets taken, both in total and by each bowler, and the number of overs bowled, both in total and by each bowler. They record how each batsperson was dismissed, the overall score at the time of each dismissal, and the number of runs scored by each batting partnership. They also record extras such as no-balls, wides, byes and leg byes.

Timekeepers

Timekeepers monitor the time during a game or sporting event. Their role is to make sure that competition times are kept to and that periods of play follow the rules of the sport. Timekeepers are also responsible for recording times taken by athletes and sportspersons to complete events in sports such as athletics, swimming, cycling, skating, skiing and motor racing.

timekeepers sporting officials who make sure that competition times are kept to, and that periods of play follow the rules of the sport

7.5.6 Leadership styles

Although there are a number of different roles in sport, many roles require leadership skills. While people all bring their individual personalities and characteristics to leadership roles, a number of recognisable styles of leadership have been identified. Traditionally, there were three basic styles, as outlined in table 7.2.

TABLE 7.2 Leadership styles

Leadership style	Description	Advantages	Disadvantages
Authoritarian or autocratic style	When a leader makes all the decisions and does not take into account other people's views.	Decisions are made quickly. Leader has total control.	Everyone else is dependent on the leader. May cause resentment towards the leader.
Democratic or cooperative style	When a leader determines what needs to be done, explains this and seeks feedback from others on how to proceed.	Allows group members to have a voice, which can raise morale and motivation.	Decisions are made slower.
Casual or Laissez-Faire style	When a leader makes very few decisions and allows others in the group to choose appropriate solutions.	Able to use the talents of all individual group members.	The group can lack coordination and a sense of direction.

authoritarian style of coaching typically characterised by a strict and disciplined approach, thorough organisation and planning, attention to detail and total commitment to the role

democratic style of coaching typically characterised by consultation and shared decision-making by the coach with others

casual style of coaching characterised by a relaxed and almost detached approach, with the coach assisting only when advice is sought by the athlete

command style of coaching that involves the coach dictating what will be done and how it will be done via direct instruction

reciprocal style of coaching in which the athlete takes some responsibility for their own development, with the coach monitoring progress and development

problem-solving style of coaching in which the athlete is challenged to respond to and solve problems set by the coach

guided discovery style of coaching in which the coach sets forward various options that the athlete has the freedom to explore and decide between

More recently, other styles have been identified, including:

- The **command** style: Similar to the authoritarian style, the leader makes all of the decisions.
- The **reciprocal** style: Group members work together to take turns observing and providing feedback on each other's performance.
- The **problem-solving** style: Involves anticipating, diagnosing and resolving problems to guide your team towards their goals or desired outcome.
- The **guided discovery** style: The leader uses questions to guide the group members towards a solution rather than providing them with all of the answers.

Leaders rarely fit these profiles exactly. Usually, they display the characteristics of one style more than the others, although many coaches combine elements from each of the main coaching styles.

FIGURE 7.20 Some leaders may prefer to make all of the decisions themselves, whereas other leaders like to listen to ideas from all team members.

7.5 ACTIVITIES

1 Captain

a. In groups of three, brainstorm the leadership qualities that you think are important for a team captain. List at least five of these qualities in a table or mind map.
b. Identify a captain in a sports team who possesses these leadership qualities and write a report explaining in what ways these qualities make them a successful captain.

2 Coaching

a. List the most widely recognised leadership/coaching styles.
b. Which of these coaching styles would you most relate to as a player and why?
c. Rank, in order of priority, the top six skills and characteristics that you believe would be most important for a coach of an under-15s mixed netball team to possess and display. Be prepared to justify your selections and ranking.

3 Have a go

a. As a class, organise a team round-robin competition.
b. Take turns to trial different roles throughout the competition, such as player, coach, scorer, umpire or timekeeper.
doc-14838
c. Reflect on these different roles by using the **Round-robin roles** worksheet in your Online Resources, then answer the following.
  i. Discuss the pressures of being an official rather than a scorer.
  ii. State the roles you played in the team games.
  iii. Consider how well you fulfilled these roles. Identify some of the challenges of this role.
  iv. Decide what role you think you are best suited to. Explain why.
  v. Discuss three examples of good leadership within the game.
  vi. Provide constructive feedback to two other peers about how they fulfilled their roles. Include a positive comment and a suggestion on how to improve.

4 Match up

int-6343
int-6342

Complete the **Recognising roles in sport** and **Coaching styles** interactivities in your Online Resources to identify different sporting roles and coaching styles.

5 Leadership styles — initiative games

a. Participate in the following initiative games in small groups.
b. Assign each group a leadership style they must stick to when participating in the game.
  i. Authoritarian: One nominated member makes all the decisions for the group.
  ii. Democratic: Everyone has a voice to offer ideas and solutions.
  iii. Guided discovery: Leaders ask questions of their team members to help them solve the problem.
  iv. A combination of leadership styles.

Afterwards, discuss the effectiveness of each type of leadership style.

Human knot

Equipment: None, or you can use short ropes or cut-up pool noodles to hold, to reduce arm twisting.

Objective: To untangle the human knot.

Description: Make a circle. Everyone should place their left hand into the middle of the circle and hold hands with someone who is not directly next to them. Repeat with the right hand, holding hands with a different person. The group must use teamwork to untangle itself into a circle again without coming disconnected.

River crossing

Equipment: Hula hoops (1 per person + 1 additional hula hoop per team. For a team of 5, you would need 6 hula hoops)

Objective: To move from one area to another (e.g. length of a basketball court).

Description: Teams must build a moving bridge to cross a river while observing the following rules:
a. Only one person can be standing on any one hula hoop at a time. (Students must stand on the hula hoop, not inside the hula hoop.)
b. If any group member touches the water (the floor, inside or outside the hoop) with any part of their body, the bridge must be moved back to the starting position.
c. If two people step on the same hula hoop at the same time, the bridge must be moved back to the starting position.
d. If put-downs are used, the group starts over.

Hoop pass

Equipment: 1 hula hoop per group.

Objective: To pass a hoop around the group as quickly as possible.

Description: Form a large circle holding hands. There will be a hoop over the joined hands of two students. Students must move the hoop around the whole circle while still holding hands. This will require them to pass their whole body through the hoop, without using their hands.

weblink

Access the weblink **Initiative and team-building games** in your Online Resources for more examples of games to use.

7.5 Exercise

7.5 Exercise

Select your pathway

LEVEL 1	LEVEL 2	LEVEL 3
1, 2, 3, 4, 5	6, 9	7, 8, 10

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Check your understanding

1. It is important that the roles and responsibilities of each participant are clearly defined. True or false?
2. A team captain should not be held responsible for the behaviour of the players in their team. True or false?
3. Administrators are responsible for making sure that the sport is played correctly and fairly on the field. True or false?
4. MC A coach is responsible for:
   - A. developing skills.
   - B. implementing tactics and strategies.
   - C. instilling discipline.
   - D. All of the above
5. MC When everyone relies on the leader to make all the decisions, what leadership style is being used?
   - A. Authoritarian
   - B. Democratic
   - C. Casual
   - D. Bossy

Apply your understanding

6. **Discuss** the difficulties associated with umpiring and refereeing. How important is it that umpires and officials be treated with respect?
7. **Propose** how umpiring and refereeing could be made more appealing to people.
8. **Compare** the advantages and disadvantages associated with two different leadership styles.
9. Imagine you are a coach of a local junior sporting team. **Identify** the most important aspects of your role. **Explain**, as the coach, how you would cater for the individual needs of the players in your team.
10. **Evaluate** the effectiveness of different initiative games for developing leadership skills.

LESSON
7.6 Fair play and ethics in sport

LEARNING INTENTIONS

- Describe how the concept of fair play impacts on the physical activity of individuals and groups.
- Identify the role of organisations in making sure all individuals and teams follow the principles of fair play.

ENGAGE

In small groups, discuss what good sporting conduct is, and then write your own definition. View figure 7.21 of Australian Olympian Peter Norman. After winning the silver medal at the 1968 Mexico Olympics, he demonstrated solidarity with the two African American athletes and the civil rights movement by wearing a badge that read 'Olympic Project for Human Rights', which aimed to oppose racism in sport. Upon returning to Australia, Peter Norman was ridiculed and never had the opportunity to race at the Olympics again. Do you think his actions demonstrated good sporting conduct?

View the two weblinks **The Third Man** and **Waleed Aly on Adam Goodes** in your Online Resources. Consider the personal and professional consequences athletes face when they take a stand. Compare these incidents to the idea of the 'fair go' in Australian society.

FIGURE 7.21 At the 1968 Olympics, Peter Norman supported the African American athletes, seen here making the black power salute in support of the civil rights movement.

7.6.1 Fair play for all?

Australians have always been proud of our cultural concept of the 'fair go'. In sport, this principle means that everyone should behave fairly and display positive sportsmanship during all types and levels of competition. This concept of the 'fair go' encourages all athletes to compete hard, but fair, and it provides an opportunity for all athletes to achieve personal success in their own way. Unfortunately, within any type of competition, some people will seek an advantage, including by using **performance-enhancing drugs**.

performance-enhancing drugs substances that are used to improve the sports performance of humans

It is also important to recognise that throughout Australian history different groups of athletes, including First Nations Australians, have been treated unequally and discriminated against within sport. Acknowledging this history and recognising when it is occurring today is important. Sport should be a welcoming place for people of all backgrounds.

FIGURE 7.22 A three storey high mural in Sydney commemorates AFL legend Adam Goodes, who took a stand against racism in sport.

7.6.2 Inclusivity in sport

Sporting clubs and associations are providing increasing opportunities for all athletes. Equitable participation in sport can have a significant effect on participation and feelings of enjoyment. Great progress has been made in recent years to encourage young people of all abilities, females and people from the **LGBTIQA+** community to participate in sport and enjoy all the benefits regular sport and physical activity can bring.

LGBTIQA+ an acronym for lesbian, gay, bisexual, trans, intersex, queer and asexual. The 'plus' describes all the other genders and sexual orientations that do not fit into the initial letters.

People of all abilities

An example of inclusivity can be seen in the Surf Life Saving New South Wales (SLSNSW) disability inclusion policy. SLSNSW states that it 'is committed to the inclusion of people with disability, their families and their carers'. The policy establishes the importance of everyone having access to the opportunities surf lifesaving brings, as well as having equal access to surf clubs and their activities.

SLSNSW encourages clubs to look at inclusion on a spectrum, with the goal of always supporting a person with a disability to participate as they choose, and not as others choose for them.

FIGURE 7.23 Australian surf lifesaving clubs aim to include all people, including those with disabilities.

Female participation

Major sporting codes and organisations such as Cricket Australia, Football Australia, Australian Football League (AFL), National Rugby League (NRL) and Australian Rugby Union have made large efforts to increase the participation of female athletes in these traditionally male sports. Efforts have been made at the grassroots level to increase participation rates among children. At the professional level, there are now more opportunities and increased earnings through the Women's Big Bash League, A-League Women, and the AFL Women's, NRL Women's and Super Rugby Women's competitions.

LGBTIQA+ participation

In sport, it has been a common occurrence for LGBTIQA+ athletes to feel uncomfortable or unwelcome in team environments. Stereotypes and hurtful attitudes have led many young athletes to not pursue sporting opportunities or to quit participating. Over the years, women's sports have done far better than men's sports when it comes to accepting LGBTIQA+ athletes. This is evidenced by the very few openly gay male athletes in men's professional sports. When A-League Men's player Josh Cavallo publicly came out as gay, it shone a light on the difficulties many gay athletes face when trying to participate in the sports that they love.

Currently, there is an ongoing debate about the participation of transgender and intersex athletes at all levels, from amateur sport all the way up to the Olympic level. The issue is the binary sporting classifications of male and female. Some sporting organisations, such as weightlifting, athletics and swimming, have allowed transgender and intersex athletes to compete after receiving hormone therapy. Other sports, such as Australian Rules football, have banned these athletes from competing. Transgender and intersex athletes continue to face a range of barriers to participation in physical activity.

FIGURE 7.24 The success of the Australian women's cricket team has encouraged many young girls to try cricket.

FIGURE 7.25 Partners Vanessa Foliaki and Karina Brown share a kiss after competing against each other in a Rugby League State of Origin match. While progress is being made, many LGBTIQA+ athletes still face discrimination in the sporting environment.

7.6.3 Fair play

Fair play can be defined as 'participation in sport being based upon the concepts of fairness, fun, sportsmanship, respect, safety, and personal and collective responsibility'. With these principles at the forefront of sport participation, all participants can enjoy the benefits of being involved in sport and physical activity.

Being able to deal with the highs and lows of competitive sport is essential to the development of fair play. Although competition can be positive and rewarding, it can also cause some players or teams to show negative behaviours. Factors such as poor performance, frustration or anger, external pressures (such as peer pressure or parental pressure) and a win-at-all-costs mentality can result in individuals or teams displaying unsporting conduct. Learning to lose gracefully, as well as learning how to win, are important habits for individual team members and teams as a whole to develop. It is the team's responsibility to develop these high standards of attitude and behaviour in its players and members.

7.6.4 Sporting conduct

Put simply, good **sporting conduct** means playing by the rules of the sport. Good sporting conduct occurs when teammates, opponents, coaches and officials treat one another with respect and consideration. Good sporting conduct starts with something as simple as shaking hands with an opponent after a game and includes acknowledging skills displayed by others and accepting unfavourable decisions gracefully. You acknowledge your victories without making your opponents feel bad. Even if you win comfortably, you still find ways to compliment your opponents.

FIGURE 7.26 Gracious winners and losers characterise a good sporting contest.

Poor sporting conduct includes:

- arguing with or not accepting the umpire's decisions
- the winners making the losers feel bad for their loss
- the losers acting or speaking offensively, or blaming others for their loss
- booing others' national anthems
- failing to congratulate or acknowledge winners.

Coaches and parents who emphasise good sporting conduct see winning as just one of several goals. They help young athletes take pride in their accomplishments and in their improving skills, so that they see themselves as winners even if the scoreboard doesn't show it. The best coaches and parents encourage young players to have fun, to play fairly by the rules, and to concentrate on helping the team while developing and improving their own skills.

sporting conduct conforming to the rules of sport; an aspiration or ethos that the activity will be enjoyed for its own sake, with proper consideration for fairness and ethics, and respect for one's opponents

SPORTING CONDUCT CASE STUDY: JOHN LANDY

The 1956 National Mile (1500 metre) Championship in Melbourne is remembered for one of the greatest sporting gestures of all time. John Landy had become the world champion miler in 1954. No one in the world was faster week after week over the mile and three miles than John Landy. Ron Clarke, another Australian, held the Australian and World Junior Mile records. As the 1956 Olympics approached, everybody was looking to Landy to set a new world record. Many thought that if Landy got a fast start in the championship race, he would set a new world record.

At the end of the first lap of this race, Robbie Morgan-Morris had completed the first quarter mile in 59 seconds, followed by Ron Clarke, Alec Henderson, John Plummer and then John Landy. The time was right on target for a world record. At the half-mile, Morgan-Morris was still leading and the time was two minutes and two seconds.

At the start of the third lap, young Clarke and Landy moved forward. A new world record beckoned. Then, an event occurred that is etched into the minds of many who witnessed it.

FIGURE 7.27 The 1956 National Mile Championship. After this incident, John Landy offered his hand to the fallen Ron Clarke in what many people believe to be one of the greatest examples of good sporting conduct.

Clarke was moving to the lead as they came into the corner on the third lap. Landy was on his shoulder. Alec Henderson tried to squeeze between the two runners and the inside edge of the track. In doing so, Clarke clipped Henderson's heel with his spikes. Clarke sprawled forwards onto the cinder track, while Henderson was knocked onto the inside arena. Landy leaped over the falling body of Clarke in front of him and, as he did, his sharp spikes tore into the flesh of Clarke's shoulder. The rest of the field either jumped over Clarke or ran around him.

Then, to everyone's amazement, Landy stopped, turned around, ran back to the fallen Clarke and helped him up to his feet. Landy had forgotten about the Australian mile title, his world record bid, and even the approaching Olympic Games, in a spontaneous gesture of good sporting conduct. Clarke got to his feet and, together, Landy and Clarke set off after the other runners. They were 60 yards (55 metres) behind the rest of the field, who had kept running, and the crowd did not expect them to continue. Clarke and Landy sprinted off in pursuit. The crowd was shouting as, with every stride, Landy hauled in the front runners.

Landy quickly ran around the rest of the field, and came into the home straight, leaving Clarke behind with a powerful finish. He stormed down the straight and in the last ten yards passed the two leading runners to win the Australian Championship in four minutes and four seconds. There was no question that Landy could have set a new world record that day. Stopping and going back, picking up Clarke and then running back over his tracks had cost him eight or ten seconds.

John Landy went on to set new world records and become a hero at the 1956 Olympic Games (he also became Governor of Victoria from 2001 to 2006), but nothing compares with that race in 1956 when he stopped, picked up Ron Clarke and then continued to run himself into athletic immortality.

weblink

Use the **A good sport** weblink in your Online Resources to watch an interview with John Landy, in which he reminisces about his sporting conduct.

Developing good sporting conduct

Good conduct learned through sport often carries over into other areas of your life. At school, for example, you are better able to appreciate the contributions made by classmates, and know how to work as part of a team to complete a project.

To develop good sporting conduct:

- Learn as much as you can about your sport and always play by its rules.
- Realise that, on a team, everyone deserves a chance to play.
- Speak politely and act courteously towards everyone before, during and after games and events.
- Stay cool, even if others are losing their tempers.

- Never settle disputes with violence. Remember that if you respond with violence, you could be penalised or even injured.
- Support your teammates with positive statements and avoid trash-talking.
- Acknowledge good plays, even when someone on the other team makes them.
- When officials make a call, accept it gracefully, even if it goes against you.
- Whether you win or lose, congratulate your opponents on a game well played.

7.6.5 Experiences of First Nations Australians in sport

With the culture of fair play and the concept of a 'fair go' embedded deeply into Australian sporting culture, it is important to identify that these concepts have not always been applied equally to all groups.

Across sport, from the local to the professional level, there have been many examples of First Nations Australian athletes experiencing discrimination and harassment. In the documentary 'Freeman', Cathy Freeman recounts a moment when as a child she won an athletics race and was not awarded a ribbon due to her Aboriginality. Later when she won a Commonwealth Games gold medal in Canada and carried both the Australian and Aboriginal flags in celebration, she was labelled 'Un-Australian' for politicising sport. Another iconic moment in Australian sport was when Australian Rules player Nicky Winmar raised his shirt and pointed to his skin saying 'I'm black and I'm proud to be black' in response to racist taunts from opposition supporters in the grandstand.

These incidents are not just isolated to the sporting field but can also occur off the field between teammates, officials and administrators.

FIGURE 7.28 Cathy Freeman celebrated her Commonwealth games win with both the Australian and Aboriginal flags.

More recently, Australian Rules footballer Cyril Rioli recounted an incident in which the president of his former club, Hawthorn, made inappropriate remarks about his wife's clothing in an airport on the way home from a game. These examples paint a picture of the difficulties faced by First Nations Australians to feel welcome in sporting clubs and on the sporting field. This can reduce their participation in sport and physical activity.

Major sporting codes and organisations have made progress in recognising the contributions of First Nations Australians to their sports through the celebration of Indigenous Rounds. During these rounds, teams wear jerseys decorated with First Nations artwork, which is a symbol of pride and an acknowledgement of the Country and culture each team comes from.

While netball is the number one sport for girls' participation in Australia, only three First Nations Australian netballers have ever played for Australia. In the 2021 Super Netball Indigenous Round, the only First Nations player in the competition, Jemma Mi Mi, was denied any court time. This example demonstrates the contrast between the acknowledgement of culture during Indigenous Rounds and the underrepresentation of First Nations Australian athletes in the sport.

The NRL also holds a representative Indigenous All Stars game, in which the best First Nations Australian players, male and female, play against the Maori All Stars. This event provides a national showcase to celebrate the cultures, land, language and diversity of First Nations Australians. It also provides opportunities for community outreach in the lead up to the event. These positive showcases of First Nations cultures can encourage the participation of young First Nations Australians in sport and physical activity because they get the chance to see their cultures not only represented but celebrated.

FIGURE 7.29 Nicky Winmar's iconic moment has been immortalised in a statue outside the Perth Stadium. Rugby league player Josh Addo-Carr pays tribute to the moment in an NRL All Stars match celebrating First Nations Australian cultures.

Table 7.3 outlines some of the most famous past and present First Nations Australian sporting heroes.

TABLE 7.3 Famous First Nations Australian sportspeople

Name	Sport	Some of their major achievements
Ash Barty, a Ngaragu woman	Tennis	• Grand Slam singles and doubles champion • Winner of a Wimbledon Singles Championship Title in 2021 • Won a bronze medal in the doubles at the Tokyo Olympics in 2021 • Achieved a world number one ranking for female tennis singles • Won the Australian Open in 2022

(continued)

TABLE 7.3 Famous First Nations Australian sportspeople *(continued)*

Name	Sport	Some of their major achievements
Cathy Freeman, a Kuku Yalanji and Birri Gubba woman	Athletics	• Won a gold medal in the 400 m race at the 2000 Sydney Olympics • Four times Commonwealth Games gold medallist • Two times World Champion in the 400 m race • Atlanta 1996 Olympics silver medallist in the 400 m • Lit the Cauldron at the 2000 Olympics
Adam Goodes, a Adnyamaathanha and Narungga man	Australian Rules football	• Two times AFL Premierships (2005 and 2012) • Two times Brownlow medallist • Three times leading goalkicker of the season for the Sydney Swans • Four times All Australian team member • Australian of the Year (2014)
Patty Mills, a Muralag and Ynunga man	Basketball	• Winner of an NBA Championship • The youngest player to represent Australia in men's basketball • The highest points scorer in men's basketball at the London Olympics (2012) • Won a bronze medal in men's basketball at the Tokyo Olympics in 2021 • Appointed a Member of the Order of Australia (AM) (2022)
Nova Peris, a Murran woman	Hockey and Athletics	• Olympic gold medallist in Hockey at the 1996 Atlanta Olympics • First Australian First Nations woman to win a gold medal at the Olympics • Gold medal in the Hockey World Cup • Double gold medallst in the 1998 Commonwealth Games in the 200 m sprint and 4 x 100 m relay • Australia's first First Nations woman elected to federal parliament (2013)
Jonathan Thurston, a Gungarri man	Rugby League	• Four times Dally M best NRL Player of the Year award • Three times winner of the Golden Boot Award for the world's best player in Rugby League • Two times NRL Premierships (2004 and 2015) • Represented Queensland, Australia and the Indigenous All Stars across many years (2005–2017) • Queensland's Australian of the Year (2018)

7.6.6 Performance-enhancing drugs

Athletes have been searching for substances that will enhance their performance since the Ancient Olympic Games. The Ancient Greeks used wine potions and hallucinogens in search of an advantage, while modern Olympic athletes in the early 1900s used mixtures of strychnine, heroin, cocaine and caffeine. It was not until 1928 that the first rule against doping was set in the sport of athletics. Since then, there has been an ongoing race between sporting bodies to develop technologies to detect performance-enhancing substances and scientists and athletes to get away with doping. Table 7.4 outlines types of performance-enhancing drugs, their effect on performance and their side effects.

These substances are banned because they create an uneven playing field. Moreover, they can have extremely dangerous side effects and can sometimes be deadly.

TABLE 7.4 Performance-enhancing drugs and their effects

Type of drug	Effect on performance	Side effects
Anabolic agents (including steroids and testosterone)	Helps build muscle tissue and increase body mass. This can make an athlete larger, stronger and more powerful.	Acne, baldness, increased aggression, impotence in males and abnormal menstrual cycles in females
Peptide hormones and growth factors (such as HGH)	Helps build muscle tissue, improving strength and endurance.	Severe headaches, loss of vision, acromegaly, high blood pressure, heart failure, crippling arthritis
Beta-2 agonists	Helps widen the airways. This allows the lungs to be supplied with more oxygen and improves endurance.	Palpitations, headaches, sweating, nausea, muscle cramps
Diuretics	Used to cause rapid weight loss, which can help make weight in combat sports. Also acts as a masking agent to hide the effects of other substances, including steroids.	Dehydration, muscle cramps, dizziness, fainting, low blood pressure
Stimulants	Increases an athlete's alertness, concentration, power and strength, and reduces the onset of fatigue.	Insomnia, anxiety, weight loss, addiction, increased heart rate and blood pressure, increased risk of heart attack and stroke
Blood doping (EPO)	Increases the number of red blood cells in the body, which has an effect on endurance.	Blood clots, heart attack, stroke, anaemia
Narcotics (opioids or pain killers)	Used to mask the impact of severe pain. Allows the athlete to continue to perform.	Further aggravation of existing injuries, addiction, dependence, gastrointestinal problems
Beta blockers	Reduces the effects of adrenaline and slows the heart rate. This may improve the performance of athletes who need a steady hand (e.g. in archery or shooting).	Reduced circulation, dizziness, fatigue, memory loss, heart failure

7.6.7 Fairness and ethical behaviour in sport

All participants, coaches and officials have an obligation to follow the rules of the game. They also have a responsibility to act ethically at all times. Although the term 'acting ethically' can be interpreted in a number of ways, most people would agree that in sport this means that people:

- demonstrate behaviours consistent with the spirit and values of the sport
- maintain a level playing field for all
- aim to protect the health and safety of all
- are good role models.

There are a number of organisations around Australia that aim to promote ethical behaviour and fairness in sport.

Sport Integrity Australia

Sport Integrity Australia is a national organisation that enforces the world anti-doping rules in this country. It educates officials and athletes about how to behave ethically and within the rules. There are eight categories of doping violations:

1. an athlete having a prohibited substance in their sample
2. an athlete using or attempting to use a prohibited substance or method
3. an athlete refusing or failing to submit a sample collection when requested
4. an athlete failing to be available for out-of-competition testing, including failure to file required whereabouts information
5. tampering or attempting to tamper with any part of doping control
6. possessing prohibited substances and prohibited methods
7. trafficking or attempting to traffic any prohibited substance or prohibited method
8. administering or attempting to administer to any athlete in-competition or out-of-competition any prohibited method or any prohibited substance, or covering up an anti-doping rule violation or any attempted anti-doping

weblink

Together with national sports organisations, Sport Integrity Australia provides advice and guidelines aimed at promoting doping-free sports environments around the country. Sport Integrity Australia has made many rulings resulting in bans against athletes found guilty of using performance-enhancing or non-approved substances. This includes Shane Warne (diuretics), Jobe Watson (peptide supplements), Jamie Kermond (cocaine) and Bronson Xerri (testosterone).

Sporting Tribunals

The National Sports Tribunal, which was established in 2020, provides independent dispute-resolution services to sporting bodies, athletes and support personnel. These tribunals can act as independent third parties to help resolve first-instance disputes or appeals. The types of disputes they can consider include anti-doping violations, disciplinary actions and bullying, harassment and discrimination cases.

Australian Human Rights Commission

The Australian Human Rights Commission promotes and raises awareness of human rights and advocates to governments and sporting bodies on behalf of various groups. This organisation also works hand-in-hand with peak sporting bodies to develop policies aimed at reducing racism and promoting the inclusion of gender diverse people in sport.

FIGURE 7.30 Lance Armstrong won seven Tour de France titles during his career and had them all stripped following an investigation in which he admitted to using EPO, human growth hormone and diuretics. Despite this, he never once failed a drug test in his career, highlighting the difficulty of catching athletes who dope.

Court of Arbitration for Sport

Developed in 1981, the purpose of the Court of Arbitration for Sports is to resolve disputes directly or indirectly related to sports. This is an international institution that allows athletes and organisations to seek advice and undergo appeals and mediation procedures.

An example of the Court of Arbitration for Sport in action was seen in the case of Australian Swimmer Shayna Jack. Shayna failed a drug test administered by the Australian Sports Anti-Doping Authority (now Sport Integrity Australia), which found the drug Ligandrol in her system. She was originally banned for four years. However, the Court of Arbitration for Sport ruled this ban was not appropriate. Shayna proved that she did not intentionally take the banned substance, and the amount of Ligandrol found in her body was deemed 'pharmacologically irrelevant'. This means it was unlikely to provide a performance-enhancing effect. The result was her ban was reduced from four years to two years.

7.6 ACTIVITIES

1 Observe

Observe a class member as they participate in a game or activity in class. Assess their level of fair play and good sporting conduct. Rate their level of performance from 1 to 5 for each of the following criteria.

a. Encouraged teammates (e.g. said things like 'well done' or 'good shot')
b. Displayed respect and courtesy towards opponents; did not sledge, put down or abuse opposition players
c. Involved all other players in the game by sharing the ball and making sure that no one 'hogged the ball'; did not attempt to dominate play
d. No evidence of cheating or attempting to take unfair advantage of situations
e. Displayed respect and courtesy towards umpires and officials; accepted decisions without complaint and did not abuse or criticise
f. Won or lost gracefully — shook opponents' hands after the game and congratulated opposition

Levels of performance

1. Student never demonstrated criterion.
2. Student demonstrated criterion in fewer than 50 per cent of the opportunities presented.
3. Student demonstrated criterion in more than 50 per cent, but fewer than 75 per cent, of the opportunities presented.
4. Student demonstrated criterion in more than 75 per cent, but fewer than 100 per cent, of the opportunities presented.
5. Student always demonstrated criterion.

2 It's your turn

Develop a code of behaviour that outlines how your class should behave in sporting competitions in class. Use ideas from all students. This may become the basis for a class code of behaviour.

3 Racism in sport

Use the weblink in your Online Resources to watch the Adam Goodes' documentary **'The Final Quarter'**.

weblink

a. Describe the situation Adam Goodes faced after calling out the racist remarks of a spectator.
b. Evaluate the impact this event may have on young First Nations Australian athletes.

4 A celebration of culture

a. Research one of the following examples of First Nations cultural celebrations in Australian sport.
- Indigenous Rounds
- NRL Indigenous All Stars fixtures
- The annual Indigenous Rugby League Knockout Carnival

b. Answer the following questions:
  i. How did this event start?
  ii. What impact has this event had on the First Nations Australians who participate?
  iii. What impact has this event had on the wider First Nations Australian population with regard to sports participation?

5 Doping in sport

Research one of the following athletes who were caught doping in sport and respond to the prompts that follow.
- Ben Johnson (Athletics)
- Lance Armstrong (Cycling)
- Marion Jones (Athletics)
- Shane Warne (Cricket)
- Bronson Xerri (Rugby League)
- Essendon Football Club (Australian Rules football)
- Shayna Jack (Swimming)

a. Identify what form of doping occurred in your chosen case.
b. Describe how the banned substance was going to help their performance in their sport.
c. Outline what penalties they received and who enforced these penalties.
d. Explain the impact of this ban on the athlete's mental health and reputation.

6 Polarised debate

Conduct a debate to explore the impact of performance-enhancing drugs in sport. Some questions for debate are:
- Should performance-enhancing drugs be permitted in sport to see how far human achievement can be pushed?
- Should there be a 'clean' Olympics and a 'dirty' Olympics?

To run a polarised debate:
a. Divide the class into two sides: one supporting the affirmative and one supporting the negative.
b. The debate begins with a comment from the affirmative. Then, each side take turns commenting.
c. If a student's comment reaffirms their side's position, the student remains on that side. However, if a student speaks against their side's position, they must 'cross the floor' and move to the other side.
d. The debate is over when there is no movement from either side or there are no further comments.
e. At the end of the debate, evaluate the arguments presented by the class.

7 Augmented reality

weblink

Download the **Health effects of doping** augmented reality app (available for iOS and Android) from your Online Resources. This app allows you to view the effects of various performance-enhancing drugs on the body.

7.6 Exercise

7.6 Exercise

Select your pathway

LEVEL 1	LEVEL 2	LEVEL 3
1, 2, 3, 5	4, 6, 8	7, 9, 10

These questions are even better in jacPLUS!

- Receive immediate feedback
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Check your understanding

1. Respecting the referee/umpire's call is an example of fair play. True or false?
2. Only players should follow sporting codes of conduct. True or false?
3. Providing inclusive opportunities for people in physical activity helps them to achieve equity. True or false?
4. MC This performance-enhancing drug helps slow the heart rate to give athletes a steady hand to perform fine motor skills.
   - A. Steroids
   - B. Beta blockers
   - C. Beta-2 agonists
   - D. Diuretics
5. MC Which organisation is responsible for drug testing athletes in Australia?
   - A. Australian Human Rights Commission
   - B. Sporting Tribunals
   - C. Court of Arbitration for Sport
   - D. Sport Integrity Australia

Apply your understanding

6. **Explain** the impact that poor sporting conduct by parents can have on their children. **Describe** how this might affect the children's continued participation in sport or physical activity.
7. **Propose** ways that organisations can provide equitable participation for people of all abilities, women OR the LGBTIQA+ population.
8. **Discuss** the importance of using drug testing to create a level playing field.
9. **Predict** the outcomes of legalising performance-enhancing drugs in all sports.
10. **Explain** how the experiences of First Nations Australian athletes can impact the participation levels of young First Nations Australians.

LESSON
7.7 Review

Hey students! Now that it's time to revise this topic, go online to:

Review your results

Watch teacher-led videos

Practise questions with immediate feedback

Find all this and MORE in jacPLUS

7.7.1 What have I learned?

- There is strong evidence to demonstrate that a range of physical, social and mental health and wellbeing benefits are gained from active participation in regular physical activity.
- Over the past two decades, participation in sport and physical activity has increased; however, over half the population is still not meeting the recommended guidelines for daily physical activity.
- When it comes to physical activity options, Australians prefer to choose non-sport-related physical activities, such as fitness/gym and walking, rather than traditional sports, such as Australian Rules, netball or cricket.
- Exercising in nature boosts individuals' mood and energy levels, and makes them more likely to repeat the physical activity.
- Health promotion campaigns based on physical activity, such as come and try days and novelty running events, have been shown to increase exercise participation levels within communities.
- Participation in sport and physical activity can take many forms. These include playing or performing the sport or activity, coaching, officiating, administrative roles and support roles (e.g. trainers and medical assistants).
- Being involved in a team provides opportunities to develop teamwork and leadership skills.
- There are a variety of leadership styles that captains and coaches can use to help a team achieve their common purpose or goal.
- Codes of conduct are useful tools for educating and encouraging athletes to play fairly.
- First Nations Australians sportspeople have faced and continue to face discrimination and harassment.
- Sporting codes that celebrate the achievements of First Nations Australian athletes through Indigenous Rounds and All Star events can improve the participation of young First Nations Australians.
- There are a range of performance-enhancing drugs. These are banned in sport due to the increased advantages gained by athletes and the adverse health effects that users suffer.

ESSENTIAL QUESTION REVIEWED

How can teamwork, leadership and fair play increase an individual's involvement in physical activity?

Evaluate your initial response to the essential question now that you have studied the topic.

on Resources

Interactivity Crossword (int-9002)

7.7.2 Key terms

appraisal support providing feedback to others to make sense of a particular situation
authoritarian style of coaching typically characterised by a strict and disciplined approach, thorough organisation and planning, attention to detail and total commitment to the role
casual style of coaching characterised by a relaxed and almost detached approach, with the coach assisting only when advice is sought by the athlete
command style of coaching that involves the coach dictating what will be done and how it will be done via direct instruction
democratic style of coaching typically characterised by consultation and shared decision-making by the coach with others
emotional support sympathetic understanding and behaviour towards another team member
guided discovery style of coaching in which the coach sets forward various options that the athlete has the freedom to explore and decide between
health promotion the process of enabling people to increase their control over, and improve, their own health
informational support the exchange among team members of necessary information
instrumental support the practical support that team members offer each other
LGBTIQA+ an acronym for lesbian, gay, bisexual, trans, intersex, queer and asexual. The 'plus' describes all the other genders and sexual orientations that do not fit into the initial letters.
official any person who controls the actual play of a sporting competition by applying the rules and laws of the sport to make judgements on performance, time scores and whether any rules have been broken
performance-enhancing drugs substances that are used to improve the sports performance of humans
physical activity guidelines the daily physical activity guidelines state that children and young people should do at least 60 minutes of moderate to vigorous exercise each day
problem-solving style of coaching in which the athlete is challenged to respond to and solve problems set by the coach
reciprocal style of coaching in which the athlete takes some responsibility for their own development, with the coach monitoring progress and development
scorers sporting officials responsible for maintaining an accurate record of the scores during a game or event
sporting conduct conforming to the rules of sport; an aspiration or ethos that the activity will be enjoyed for its own sake, with proper consideration for fairness and ethics, and respect for one's opponents
timekeepers sporting officials who make sure that competition times are kept to, and that periods of play follow the rules of the sport
umpires and referees sporting officials responsible for regulating the conduct and playing of sporting events

7.7 Exercise

7.7 Exercise

Select your pathway

LEVEL 1	LEVEL 2	LEVEL 3
1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12	11, 13, 14, 15, 17	16, 18, 19, 20

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- Receive immediate feedback
- Access sample responses
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Check your understanding

Identify whether the following statements are true or false.

Statement	True or false
1. Jogging is most likely to be classified as a non-competitive physical activity.	
2. The majority of the Australian population meet and exceed the minimum daily physical activity guidelines.	

Statement	True or false
3. A good team captain will argue with the referee in an attempt to overturn a decision for their team.	
4. The best leadership style for a coach or captain is a combination of different styles to suit the situation.	
5. Using fair tactics to expose weaknesses in an opposition team is an example of bad sporting conduct.	
6. Encouragement and self-talk can help build motivation and increase levels of persistence in a team.	
7. Sport Integrity Australia is responsible for enforcing the rules of anti-doping across the world.	
8. Steroid use can cause increased aggression, baldness in male athletes and increased hair growth in female athletes.	
9. The Australian Human Rights Commission adjudicates on matters relating to sport and physical activity.	
10. Celebrating the achievements of First Nations Australian athletes has no impact on the participation levels of young First Nations Australians.	

Apply your understanding

11. **Describe** some of the benefits to communities when people participate in physical activities.
12. **Identify** the physical, social and mental health benefits of participating in sport.
13. **Explain** how physical activity campaigns can increase the participation levels of individuals and communities.
14. **Determine** the two most important characteristics that a person in these roles should display.
    a. Team captain
    b. Junior coach
    c. Elite coach
    d. Parent spectator
15. **Create** your own definition of what it is to be a great team member.
16. **Analyse** the role of a code of conduct in promoting fair play.
17. **Describe** the various experiences of First Nations Australian athletes in sport and physical activity in Australia.
18. **Investigate** the experiences of First Nations Australians in sport by researching one of the following athletes:
    a. Cathy Freeman
    b. Adam Goodes
    c. Eddie Betts
    d. Kyah Simon
    e. Latrell Mitchell
19. **Explain** the reasons behind the ban on performance-enhancing drugs.
20. **Describe** how Sport Integrity Australia, Sporting Tribunals and the Australian Human Rights Commission promote fair play in sport.

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Online Resources

on Resources

Below is a full list of **rich resources** available online for this topic. These resources are designed to bring ideas to life, to promote deep and lasting learning and to support the different learning needs of each individual.

Topic PDF

- 7.1 Participation, collaboration, teamwork and fair play (tpdf-3595) ☐

Digital documents

- 7.2 Culturally significant physical activities (doc-39558) ☐
- 7.3 Sample media release (doc-39559) ☐
- Sample draft letter for organisations (doc-39560) ☐
- 7.5 Round-robin roles (doc-14838) ☐

Video eLessons

- 7.1 Participation, collaboration, teamwork and fair play (eles-6104) ☐

Interactivities

- 7.5 Recognising roles in sport (int-6343) ☐
- Coaching styles (int-6342) ☐
- 7.7 Crossword (int-9002) ☐

Solutions

- 7.7 Answers: topic 7 ☐

Weblink

- 7.3 Australian physical activity and exercise guidelines ☐
- 7.4 Teamwork ☐
- 7.5 Initiative and team-building games ☐
- 7.6 The Third Man ☐
- Waleed Aly on Adam Goodes ☐
- A good sport ☐
- Sport Integrity Australia ☐
- The Final Quarter ☐
- Health effects of doping app ☐

Teacher resources

There are many resources available exclusively for teachers online.

To access these online resources, log on to **www.jacplus.com.au**.

8 Movement concepts and strategies

LESSON SEQUENCE

8.1 Overview 329
8.2 Adapting and refining movement concepts and strategies 330
8.3 Building strategic awareness 337
8.4 Review 344

FIGURE 8.1 Having effective strategies and tactics means knowing the rules. Does this photo show a foul or a good tactic? When playing sport, how have strategies helped you?

LESSON
8.1 Overview

Hey students! Bring these pages to life online

Watch videos

Engage with interactivities

Answer questions and check results

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Movement concepts and strategies provide a framework for improving movement performance in individual and team sports. Being aware of the many different ways your body can move and interact with objects and people helps you choose and develop effective strategies for your movement. This topic will show you how to learn, use and develop basic skills, movements and strategies to help you respond to the tactical challenges you will face during complex physical activities.

ESSENTIAL QUESTION

How can a knowledge of movement concepts help you make better tactical decisions during a match?

STARTER QUESTIONS

1. How many different ways can you move your body?
2. What are the elements of movement?
3. What type of skills do you use in your favourite game or activity?
4. How do you adapt your skills to respond to challenges within games?
5. What strategies and tactics have you used in offensive or defensive game situations?

on Resources

Video eLesson Movement concepts and strategies (eles-6105)

LESSON

8.2 Adapting and refining movement concepts and strategies

LEARNING INTENTION

- Perform skills in a range of situations of varying complexity and modify games to foster the development of specialised movement skills.

ENGAGE

In sports and physical activities, individuals must learn basic movement concepts and skills. Movement concepts refer to how the skill is to be performed; for example, a ball might be struck *hard*, and a hurdle action might be *quick*.

The skilled diver shown in figure 8.2 will have developed some basic skills and movement concepts before completing her dive. As a class, list the basic skills required to complete a complex dive. Then, try to describe how the parts of the dive are performed.

FIGURE 8.2 A complex dive involves a combination of basic skills put together.

8.2.1 A framework for how to move your body effectively

The primary goal of Physical Education is to provide you with opportunities to develop skills and to build your confidence in how you can perform them. You need to understand **movement concepts** and the skills that allow you to complete the movement. This gives you a framework for how to effectively move your body and develop your motor skills. In this way, you can develop into a skilful adult who can enjoy a wide range of sports and physical activities.

movement concepts refers to how skills are to be performed (e.g. striking the ball *hard*); also known as elements of movement

8.2.2 Fundamental movement skills

In Physical Education, you are gaining skills and confidence to let you competently participate in and enjoy many physical activities. **Fundamental movement skills** form the foundation for many basic movement skills. Sometimes, you may know the rules of a game before having adequate motor skills for successful and positive participation. One way of learning is to focus on the development of these essential

fundamental movement skills the foundation movements of more specialised, complex skills in games, sports, dance, gymnastics and physical recreation activities

motor skills. This approach is called learning by **skill themes**. Skill themes are action words that are grouped into three main categories:

- locomotor — movement skills that allow you to move from one place to another
- non-locomotor (non-manipulative) — movement skills that involve moving on the spot without changing location
- manipulative — movement skills that require the ability to handle an object or piece of equipment with control.

skill themes action words that describe the motor skills needed to complete a movement; includes locomotor (e.g. walking, running), non-locomotor (e.g. turning, swinging) and manipulative (e.g. throwing, kicking) skills

Each category describes the type of movement that is used. Focusing on skill themes allows you to develop a group of skills that are used in different types of games. For example, improving your catching and throwing generally allows you to competently play netball, basketball, softball and other games. Once a skill theme is developed, it can be applied to fit the particular requirements of different games. Table 8.1 lists the various skill themes.

FIGURE 8.3 Table tennis requires manipulative movement skills.

TABLE 8.1 Examples of skill themes taught in Physical Education

Locomotor skills	Non-locomotor (non-manipulative) skills	Manipulative skills
Walking	Turning	Throwing
Running	Twisting	Catching and collecting
Hopping and jumping	Bending	Kicking
Skipping and leaping	Balancing and swaying	Punting
Galloping	Transferring weight	
Sliding and rolling	Swinging	
Chasing, fleeing and dodging	Stretching	
Floating		

on Resources

Interactivity Skill themes (int-6332)

8.2.3 Specialised movement skills

After you have developed the fundamental movement skills, you can then begin to further refine and combine them to form **specialised movement skills**. These are the skills required in organised games and activities. For example:

- fielding a ground ball in softball
- performing a grapevine step in dance
- kicking a drop punt in Australian Rules football
- taking a throw-in in soccer.

FIGURE 8.4 Dribbling in basketball is an example of a specialised movement skill.

If you analyse these specialised skills, you will be able to identify the fundamental skills they build on.

8.2.4 Movement concepts

specialised movement skills movement skills that are required in more organised games and activities

Once fundamental movement skills have been combined to develop specialised movement skills, you can focus on movement concepts to develop strategies to achieve successful outcomes in sport. The concept of dribbling a basketball at a slow or fast pace increases the complexity of the skill, and at different times in a game both may give an advantage. The movement concepts can also modify skills, such as dribbling a hockey ball in a straight line compared to dribbling a hockey ball in a zig-zag pattern. Movement concepts (or elements of movement) are grouped into four main categories:

- body awareness
- spatial awareness
- effort awareness
- relationship awareness with objects, people and spaces.

Table 8.2 gives some examples of the different movement concepts.

TABLE 8.2 Examples of movement concepts taught in Physical Education

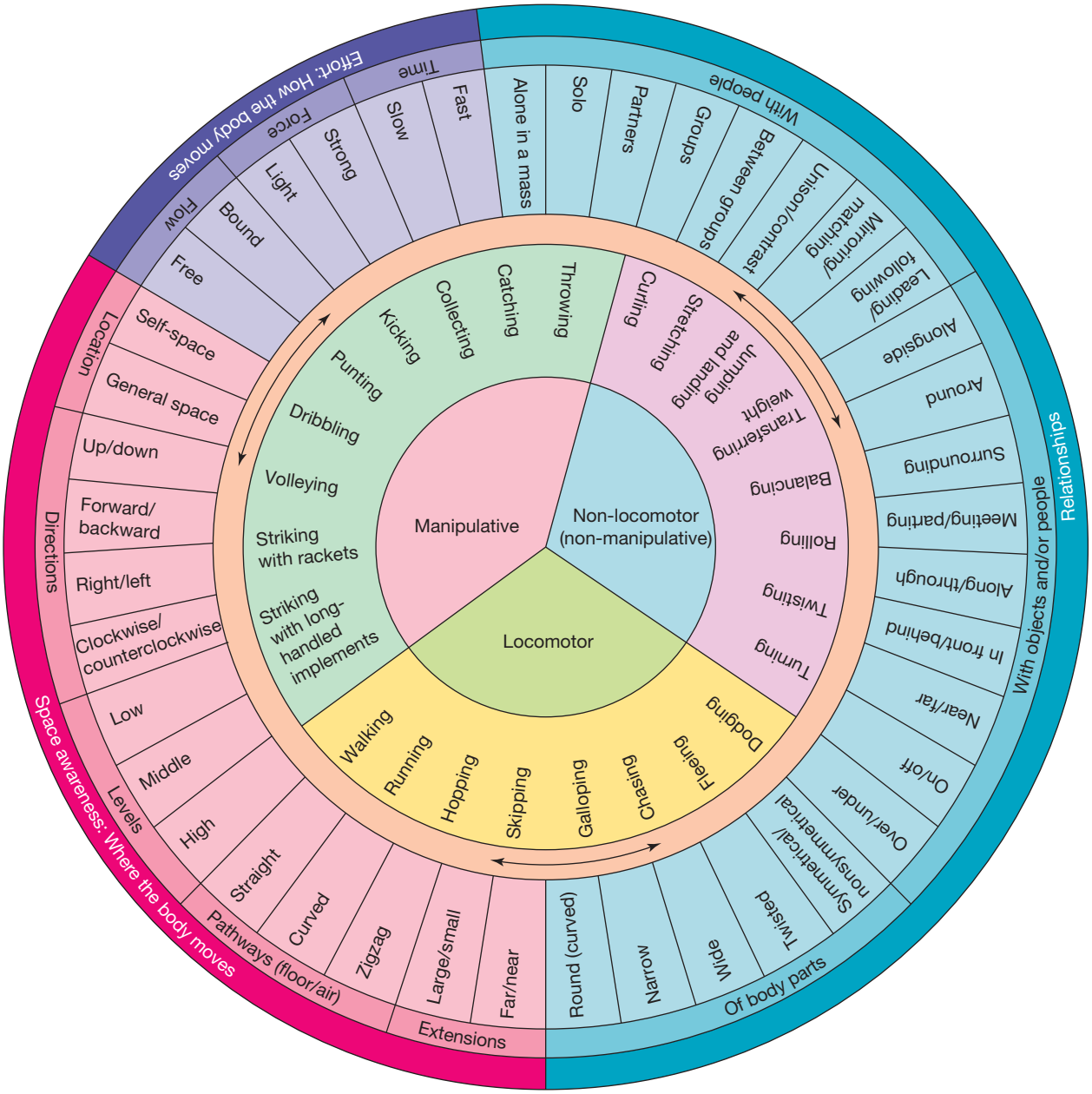
Movement concept	Example
Body awareness	• Body parts (e.g. arms, legs, elbows, knees, head) • Body shape (e.g. stretched, curled, wide, narrow, twisted, symmetrical, asymmetrical) • Body action (e.g. flexion, extension, rotation, swing, push, pull)
Spatial awareness	• Location (e.g. personal and general space) • Directions (e.g. forward, backward, sideways, up, down) • Levels (e.g. high, middle, low) • Pathways (e.g. curved, straight, zig-zag) • Planes (e.g. frontal, horizontal, sagittal)
Effort awareness	• Time (e.g. fast, slow) • Force (e.g. strong, light) • Flow (e.g. free, bound)
Relationship awareness with objects, people and spaces	• Person (e.g. alone, with partner, with group, meet, part, match, mirror, follow, lead) • Objects (e.g. near, far, in, out, over, under, around, through, on, off, above, below) • Space (e.g. moving in relation to music, moving in relation to the environment)

movement sequences a combination of fundamental movement skills and movement elements that enables movement to respond in a range of situations; a planned order of movements

Many sports require you to use a combination of motor skills and movement concepts, so Physical Education places emphasis on teaching skill themes and movement concepts. Motor skills and movement concepts combine to form **movement sequences**. Learning these helps you to develop effective skills to respond in a range of situations.

In preschool and primary school settings, Physical Education focuses on movement concepts before skill themes because students are still learning new words and ways of moving. The movement analysis framework wheel in figure 8.5 shows how the skill themes and movement concepts interact with each other. The two inner circles represent the skill themes and the three outer circles represent the movement concepts.

FIGURE 8.5 Movement analysis framework wheel



Transfer of movement concepts and strategies in modified games

Before you learn basic strategies and tactics, you need to spend time practising movement concepts and skills. For example, you might focus on dribbling in basketball with no defenders and in a straight line, then on angular pathways around defenders. Learning these movement concepts and basic skills will help you to adapt the skills in various activity situations. This will help you to transfer your knowledge (concepts, skills and tactics) to other games. For example, a basketballer could transfer their knowledge of dribbling and getting around opposition players to football. Scott Pendlebury, a current AFL player, was a talented young basketballer who represented Australia in junior basketball. He successfully used his skills from one game and applied them to another game situation. Table 8.3 shows how skills, movement concepts and strategies can be transferred.

TABLE 8.3 Transfer of skills, movement concepts and strategies

Game category	Skills, movement concepts and tactics	Potential for transfer
Dribbling with a hockey stick	• Dribbling on straight pathways without defenders • Dribbling on angular pathways around defenders	• Dribbling basketball • Cradling ball in lacrosse • Running with rugby ball
Kicking a football	• Kicking a football while stationary • Kicking a football while running and dodging the opposition	• Kicking a soccer ball • Dodging a player to make a pass in rugby • Kicking a football to a moving target

8.2.5 Modified games

During training sessions and Physical Education lessons, coaches and teachers can use the CHANGE IT principles to modify activities (see table 8.4). These modifications vary the level of complexity to make an activity easier for beginners or more difficult for intermediate or advanced athletes.

TABLE 8.4 The CHANGE IT principles, developed by the Australian Sports Commission (2007)

C	Coaching style Use questions to set challenges for the players (e.g. 'When is the best time to pass?'). Provide coaching advice without interrupting the game as required. Use players to demonstrate necessary skills. Use different methods of communication (visual, auditory, simple and complex language).
H	How you score/win Increase opportunities to score, such as by passing to a player in an end zone rather than shooting for goal, and varying the size of or distance to a target.
A	Area Change the shape and/or size of the playing area, including in terms of overall size, width or length.
N	Numbers Consider using different team sizes or varying the number of turns. For example, when introducing defence into a game, 3 v 1 or 4 v 2 games give attackers more options when dealing with an added defender. Increasing the number of turns helps players learn new skills.
G	Game rules Change the rules slightly. For example, introduce a no-tackling rule to give more time to dispose of the ball; allow two bounces before catching or stopping the ball; specify that three team members must touch the ball before a point can be scored; allow a player to roll rather than throw the ball; or allow players to walk rather than run.
E	Equipment Vary the size and type of equipment used. For example, change to a larger and/or softer ball if a player is having difficulty catching, or to a smaller ball if they are having problems throwing; introduce a batting tee (a stationary ball) if a player is having difficulty hitting a moving ball.
I	Inclusion Involve players in making the modifications. Ask individuals what would improve the game for them and/or how their involvement could be increased. Provide options to choose from to encourage ownership.
T	Time Reduce or extend the time to perform actions. For example, see how many passes players can complete in 5 or 30 seconds. Increase possession time to allow players more time to make a decision about what to do next.

DISCUSS

Think about a sport-related skill that you are good at.

a. How could this skill be transferred to another sport/context?
b. Attempt the skill in another sport/context. How well were you able to transfer your skill?
c. What are the similarities and differences between the sports/contexts and how did this affect your ability to perform the skill?
d. Outline what you could do to improve your skill in both sports/contexts.

on Resources

Interactivity Movement concepts (int-6333)

8.2 ACTIVITIES

1 Possession/10 passes

Rules:

Students are split into two opposing teams.

The attacking team must pass the ball between their teammates to make 10 successful passes. The defensive team must try to intercept the ball before the attacking team makes 10 passes.

If the ball is intercepted, the defensive and attacking teams swap roles.

Modifications:

Make the following modifications during the activity. Pause play at various stages to discuss the strategies used to achieve success.

a. Use different balls during the activity to allow students to practice using different specialised movement skills. For example:
   - Netball — chest pass, shoulder pass, lob pass, bounce pass
   - Australian Rules — handball or kick
   - Softball/baseball — underarm or overarm throw
b. Change the rules or field. For example:
   - Players cannot move with the ball.
   - Players can move with the ball.
   - Attacking team has more players than the defensive team.
   - Defensive team has more players than the attacking team.
   - Attacking and defensive team have the same number of players.
   - Size of the field is increased.
   - Size of the field is decreased.

Discuss:

- What strategies did your team use to achieve 10 passes?
- What strategies did you team use to defend?
- Which strategies would you keep, change or get rid of?
- Which modifications made the game easier or more difficult?

2 Dribblers and robbers

Players move around the court dribbling a basketball. Two players are the 'robbers' and they attempt to intercept a 'dribblers' ball. 'Dribblers' need to consider successful strategies to maintain possession of the ball in the face of defenders.

Modifications:

- If a dribbler loses possession of their ball, they swap roles with the robber.
- If a dribbler loses possession of their ball, they are eliminated (out).

- Increase the number of robbers.
- Have fewer balls and allow dribblers to pass the ball between each other.
- Decrease the size of the playing area.
- Swap to using soccer balls. Players have to dribble the ball with their feet.

Discuss:

- How were you able to manipulate force and direction to maintain control while dribbling?
- How did you use levels to maintain possession of the basketball?
- Which modification increased the complexity of the activity?
- Which modifications could you make to decrease the complexity of the activity for beginners?

3 Modified game

a. In small groups, design a modified game that could be used as a lead-up activity prior to playing a proper or complete version of the sport.
b. In your description of the modified game, include:
  i. the major objective of the game
  ii. its main rules
  iii. the key skills involved
  iv. any tactical or strategic principles that the game could incorporate.
c. Be prepared to run your group's activity for the class. Evaluate your activity.

8.2 Exercise

8.2 Exercise

Select your pathway

LEVEL 1	LEVEL 2	LEVEL 3
1, 2, 3, 4, 6	5, 7	8, 9, 10

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Check your understanding

1. Running is an example of a non-locomotor skill. True or false?
2. Spatial awareness involves your ability to move at different levels and in different directions. True or false?
3. Bowling a cricket ball is a specialised movement skill. True or false?
4. MC Which of the following modifications would increase the complexity of an activity?
   A. Removing defenders
   B. Increasing the size of the playing field
   C. Using a larger or softer ball
   D. Increasing the ratio of defenders to attackers
5. MC How can a basketball player use levels and directions to maintain control while dribbling?
   A. Dribble the ball at chest height, stand tall, face the defender.
   B. Dribble the ball at waist height, stand tall, face the defender.
   C. Dribble the ball at chest height, bend at the knees and hips, turn your body away from the defender.
   D. Dribble the ball at waist height, bend at the knees and hips, turn your body away from the defender.

Apply your understanding

6. **Identify** three specialised skills in a sport of your choice.
7. Select a sport. **Describe** three examples of how body awareness is used in that sport.
8. You are coaching a group of beginners to pass in netball. **Describe** how you could use the CHANGE IT principles to vary the complexity of the activity.
9. **Create** your own modified activity or game to develop specialised movement skills in a sport of your choice.
10. **Justify** the role of modified games for developing strategies to achieve successful outcomes.

LESSON
8.3 Building strategic awareness

LEARNING INTENTIONS

- Implement offensive and defensive strategies in a range of different sports and situations.
- Evaluate the effectiveness of the strategies used to solve problems; propose and implement alternative strategies to solve the same problem.

8.3.1 Game plans

In most sports and activities, individuals and teams rely on a style of play or team organisation called a game plan. The game plan is developed by the coach, sometimes together with the players. Game plans provide individual athletes and teams with structure and a style of play. The game plan is often designed to take advantage of the particular strengths of the individual or team. Game plans include:

- general principles of offence and defence
- team rules
- tactics and strategies
- set plays that have been developed and practised for some time.

Game plans tend to remain the same over a season, although there may be some refinement along the way.

ENGAGE

doc-14694 As a class, use the **Strategic sports** worksheet in your Online Resources to complete a practical activity about strategies and tactics in various sports.

FIGURE 8.6 Game plans and set plays developed for specific tactics and strategies at the elite levels of sports competition can also be seen in junior sports.

8.3.2 Tactics and strategies

For teams to be successful, they must develop a game plan and include tactics and strategies for offence and defence. Tactics and strategies should be developed by the coach and players, and practised by the team during training sessions.

Game plans tend to remain fairly constant over a season. Tactics and strategies, on the other hand, may change from week to week, and are determined by such things as opposition team structure (e.g. strengths, weaknesses and knowledge of the opposition's game plan), environmental conditions (e.g. weather) and playing environment (e.g. ground size and conditions). Tactics and strategies in most sports and competitive games can be categorised as either offensive or defensive.

game plans style of play or organisation adopted by teams and developed by or in conjunction with a coach

offensive tactics and strategies structured plans or moves that have the primary purpose of scoring or creating a scoring opportunity

8.3.3 Offensive tactics and strategies

Offensive tactics and strategies are structured plans or moves that have the primary purpose of scoring (e.g. a goal, point, run or try) or creating an opportunity to score. In ball games such as basketball or soccer, the team would generally be in possession of the ball when using offensive tactics. In most sports and games, offensive strategies and tactics are governed by principles such as:

- *maintaining possession*. Generally speaking, the more an individual or team has control of the ball, the greater the number of scoring opportunities.
- *availability and positioning*. In team ball games, players need to position themselves so that they can receive the ball in the best possible position. They also need to reduce the possibility of being intercepted by the opposition.
- *space and direction*. Players need to constantly create and use available space. This is explored further in the next section.

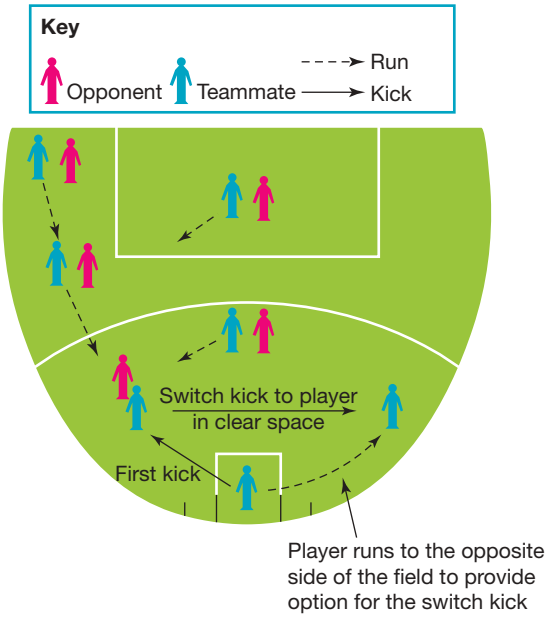
FIGURE 8.7 Maintaining possession of the ball is important in netball.

Space and direction

Space can be created by using fake moves and changes of direction to momentarily place opposition players at a positional disadvantage. A sudden change of direction often results in the ball being released to free space. Changing the direction of play can also affect the movements of the opposition team. For example, a kick to the opposite side of the field in football or soccer will often draw the opposition players to that side of the field. A quick pass in the other direction can catch the opposition out of position and create space for your team. Players can also 'lead' into areas not taken up by other players. Players who find themselves in 'space' then have sufficient time and opportunity to perform the correct skills and movements rather than having to worry about evading the opposition. In individual sports such as tennis and squash, players attempt to make their opponent move around the court as much as possible. This creates more free space to hit the ball to, which makes it more difficult for an opponent to return the ball. In striking sports such as baseball or softball, a batter will try to hit the ball to free space on the field.

FIGURE 8.8 Creating space: the tactics of attackers 1 and 2 have forced defenders 1 and 2 across the field, creating space. Attackers 3 and 4 can then run into the space created.

FIGURE 8.9 Directional change: a quick switch of play to the opposite side of the ground can catch a team out of position and thereby create space for the other team.



8.3.4 Defensive tactics and strategies

Defensive tactics and strategies refer to the structured plans or moves used by a team or individual to prevent the opposition from scoring. In a ball game such as football or netball, the team would usually not be in possession of the ball when defensive strategies are used. Most defensive tactics and strategies are designed to respond to the principles of offence discussed in the previous section. Defensive strategies focus on:

- taking the ball off the opposition
- reducing scoring opportunities
- reducing available space.

defensive tactics and strategies structured plans or moves used by a team or individual to prevent the opposition from scoring

For example, defensive organisational strategies such as **one-on-one defence** and **zone defence**, used in sports such as basketball, soccer, hockey, netball, European handball and Australian Rules football, are designed to reduce the space available to the opposition team, thereby reducing its scoring opportunities.

one-on-one defence involves each player on a team being responsible for marking an opposition player

zone defence involves players guarding or defending a particular space on the court or field, rather than individual opposition players

One-on-one defence

In this basic defensive arrangement, each player on a team is responsible for one opposition player. The player marks that opposition player at all times while they are on the field or court. One-on-one defence is widely used in sports such as Australian Rules football, basketball and netball.

Zone defence

Under this principle, players do not mark a specific opposition player, but they are responsible for guarding or defending a particular space on the court or field. The player defends against any opponent who enters their

particular area of responsibility. Zone defence is used in many sports, including basketball, European handball, soccer and, increasingly, Australian Rules football. Offensive teams often develop certain tactics and strategies to respond to defensive formations such as zone defences. For example, in basketball, the 1–3–1 offence is an attack pattern often used to penetrate a zone defence.

FIGURE 8.10 The basic zone defence in basketball: each player guards a designated zone against any opponent who moves into it.

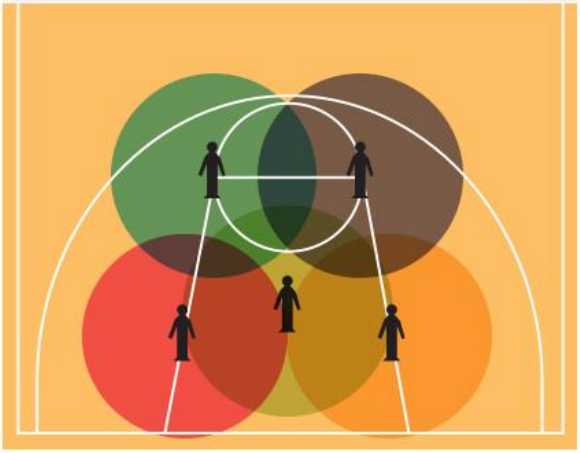
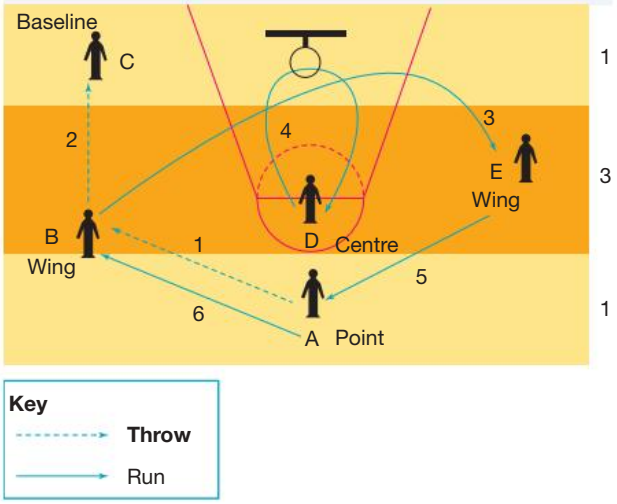


FIGURE 8.11 The 1–3–1 offence in basketball is an example of a tactic used to respond to a zone defence.



8.3.5 Evaluating strategies

Once you have a clearly defined strategy for offence and/or defence, it is important that you have a reliable way to measure its effectiveness. Players, coaches and even spectators can determine the effectiveness of a team's strategies by using:

- *statistics*. Gathering statistical data can give an objective picture of performance. Information such as successful passes, turn overs, tackles made or missed, time in possession or field position can be useful in invasion games, whereas number of first serves made is useful in net/court games like tennis.
- *match analysis*. Oobserving players' positions at key moments during games can determine the effectiveness of a strategy. This can be done while watching the game live or by using video replays. For example, if a defensive player misreads what the attacking team is doing, this could result in an overlap and large amounts of space for the opposition to move into.

It is important to note that even when players and teams implement successful strategies, they may not win the match. It is also possible for a well-designed strategy to be poorly executed, reducing its success.

8.3.6 Case study — badminton

Badminton is a fast-moving racquet sport that can be played by singles (two opposing players) or doubles (two opposing pairs). Players or pairs take up positions on opposite halves of a rectangular court that is divided by a net. Points are scored by striking a shuttlecock with a racquet so that it passes over the net and lands in the opponent's half of the court. Each opponent or pair may strike the shuttlecock only once before it passes over the net. To view a clip from a game of badminton, go to the **Badminton** weblink in your Online Resources.

weblink

Tactics and strategies in badminton

Badminton requires players to use a wide variety of strokes in the right situations; this includes clears, drop shots and smashes. However, just knowing how to smash powerfully will not necessarily bring you success. When players are equally matched for skill and fitness, tactics and strategies play a very important role in determining the eventual winner. These tactics and strategies are designed to make your opponent play a weak shot and put you in a position to make a 'kill' shot.

FIGURE 8.12 Thinking strategically is an important skill for success in badminton.

Singles

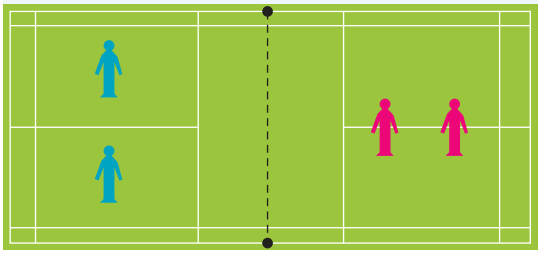
In singles, you are required to cover the entire court. Therefore, singles tactics are based on forcing your opponent to move around the court as much as possible. One simple strategy often used by beginners in singles is to serve long and high to the opponent's backcourt. This forces your opponent to move back to the baseline and open up their forecourt. Long clears to the rear of the court and drop shots to the forecourt can be used to move your opponent around the court to force errors or create open space to play the faster smash shot. When playing any shot in singles, it is important to try to return to a central base position in the midcourt. From here, all possible replies can be covered. When caught out of position, the shuttle should be cleared (hit) as high as possible to the backcourt to allow time to recover (return) to base.

Doubles

In doubles, both pairs should try to gain and maintain the attack by hitting downwards as much as possible. Where possible, you and your partner should adopt the ideal front and back attacking formation, with one player positioned in the backcourt and the other in a forecourt or net position as shown in figure 8.13. In this attacking formation, the backcourt player should keep hitting downwards in a straight direction so that their partner knows roughly where the shuttle will be played. The net player should be looking to intercept any replies that pass within reach. If you and your partner are forced onto the defensive, you should adopt a side-by-side position in the mid-court to cover the full width of the court against your opponents' smashes.

When using this defensive formation, the aim is to play shots that the opposition will not be able to attack. These are usually drives through the front player or net shots in front of them. When a shot like this is attempted, as soon as the shuttle reaches a position on your opponents' side of the net from which it cannot be attacked (i.e. at or below net height), the striker should immediately move in towards the net. This changes a defensive position into an attacking one. If these shots are not possible, the shuttle should be cleared as deep as possible to the rear of the court to allow time to cover the next shot from your opponents.

FIGURE 8.13 Front and back attacking formation (red) and defensive side-by-side formation (blue) used in doubles in badminton



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The next step is to give badminton a try. Use the worksheets **Badminton practical** and **Badminton assessment** in your Online Resources for more information before you play.

DISCUSS

After playing a team game using tactics from this lesson, respond to the following prompts:

a. Discuss your role in the team tactics.
b. Evaluate your role.
c. Evaluate the team's use of tactics and how well they 'stuck to the game plan'.
d. Explain what would happen if a team member did not know or did not fulfill their role in a zone defence.
e. Identify the benefits of team plays.
f. Identify some challenges of team plays.
g. Discuss how you can overcome the above challenges.

8.3 ACTIVITIES

1 Sporting strategy B-I-N-G-O

Create a bingo card of offensive and defensive strategies. Example strategies for soccer are provided below.

Offensive strategies	Defensive strategies
1. Move quickly to create an open space for shooting. 2. Spread out the attack to make guarding difficult for the defence. 3. Use your body to shield the ball from an opponent. 4. Keep moving, even when not in possession of the ball. 5. Keep possession and control of the ball with tight passing. 6. Move away from the teammate in possession of the ball so that defenders using 1-on-1 defence are also drawn away from the player with the ball. 7. Use depth in the attack to pass the ball forward towards the goal or backward towards teammates.	1. Guard players by taking a position between the opponent and goal; cover the area in front of the goal at all times and keep team players positioned between the goal and the ball. 2. Force the opponents to play the ball away from their own goal and towards the outside of the field. 3. Reduce the opposing team's shooting angle by moving towards the ball. 4. For the best defensive strategy, use 1-on-1 or zone defence, or a combination of both. 5. Move away from the opponent as the offence gets further from the goal, but move towards the opponent as the offence moves towards the goal.

Participate in a round-robin game with two teams playing and one team resting. The resting team needs to keep score by ticking off the playing teams' bingo cards. The winners are the team that gets the most items ticked off on their bingo card. Extra points are awarded for each additional player that demonstrates the strategy.

2 My own strategies

a. Choose any sport other than soccer. Using the offensive and defensive strategies in the previous bingo activity as an example, modify and/or create your own list of strategies for your chosen sport.
b. Combine the class's strategies for different sports together and use these to repeat the bingo activity above.

3 Movement strategies

a. Divide the class into three groups.
b. Two groups play a throwing and catching type game.
c. The third group evaluates the effectiveness of the movement concepts and strategies used. Use the following table to assess each player or download a template **Movement strategies assessment** from your Online Resources. Rotate groups.

doc-39561

	Usually	Sometimes	Rarely
Options for the player to pass the ball			
Player moves off the ball			
Player changes direction to evade defenders			
Player make leads to free space			
Player jumps for the ball			
Player uses suitable passes			

4 Alternative strategies

Participate in a pairs game of badminton with one team using the front-and-back attacking formation and the other team using the defensive side-by-side formation.

a. At the end of the first game discuss the pros and cons of each strategy.
b. At the beginning of the second game have the teams swap strategies.
c. At the end of the second game, allow players to evaluate the effectiveness of each strategy.
d. Allow players time to propose new strategies for attacking and defending in badminton and implement these strategies in the third game.

8.3 Exercise

8.3 Exercise

Select your pathway

LEVEL 1	LEVEL 2	LEVEL 3
1, 2, 3, 5	4, 6, 7, 8	9, 10

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Check your understanding

1. A strategy is only successful if you win the game. True or false?
2. Game plans should change each week. True or false?
3. Tactics and strategies are influenced by the opposition and environment. True or false?
4. MC Which of the following is NOT an offensive strategy?
   - A. Moving towards the opposition to reduce their shooting and passing angle
   - B. Maintaining movement when you are not in possession of the ball
   - C. Using shorter passes to maintain possession
   - D. Using the body to shield the ball from an opponent
5. MC What is the goal of a defensive strategy?
   - A. To win the game or match
   - B. To develop a style of play for your team
   - C. To assist in scoring or creating a scoring opportunity
   - D. To prevent the opposition from scoring or having scoring opportunities

Apply your understanding

6. **Explain** the three main principles on which most offensive strategies and tactics are based.
7. **Explain** the differences between the defensive strategies of one-on-one defence and zone defence.
8. **Identify** why teams usually develop game plans.
9. **Elaborate** on the advantages game plans provide. Are there any disadvantages?
10. **Propose** how teams can overcome the difficulties of using strategies, tactics or set plays in real game settings.

LESSON
8.4 Review

Hey students! Now that it's time to revise this topic, go online to:

Review your results

Watch teacher-led videos

Practise questions with immediate feedback

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8.4.1 What have I learned?

- Teaching movement concepts with motor skills support the transfer of knowledge for tactics and strategies.
- Coaches and athletes spend time analysing performances to change tactics and strategies.
- When individuals and teams oppose one another in competition, they often rely on strategies and tactics to give themselves an advantage over the opposition.
- Game plans provide individual athletes and teams with structure and a style of play.
- Although game plans tend to remain fairly constant over a season, tactics and strategies may change from week to week. This is determined by such things as opposition team structure, environmental conditions and playing environment.
- Tactics and strategies in most sports and competitive games are either offensive or defensive.
- Offensive strategies and tactics are governed by certain principles, including maintaining possession, the availability and positioning of players, and space and direction.
- Most defensive tactics and strategies are designed to respond to the principles of offence. Defensive strategies focus on dispossessing the opposition, reducing scoring opportunities and reducing available space.

ESSENTIAL QUESTION REVIEWED

How can a knowledge of movement concepts help you make better tactical decisions during a match?

Evaluate your initial response to the essential question now that you have studied the topic.

on Resources

Interactivity Crossword (int-9003)

8.4.2 Key terms

defensive tactics and strategies structured plans or moves used by a team or individual to prevent the opposition from scoring
fundamental movement skills the foundation movements of more specialised, complex skills in games, sports, dance, gymnastics and physical recreation activities
game plans style of play or organisation adopted by teams and developed by or in conjunction with a coach
movement concepts refers to how skills are to be performed (e.g. striking the ball *hard*); also known as elements of movement
movement sequences a combination of fundamental movement skills and movement elements that enables movement to respond in a range of situations; a planned order of movements
offensive tactics and strategies structured plans or moves that have the primary purpose of scoring or creating a scoring opportunity

one-on-one defence involves each player on a team being responsible for marking an opposition player
skill themes action words that describe the motor skills needed to complete a movement; includes locomotor (e.g. walking, running), non-locomotor (e.g. turning, swinging) and manipulative (e.g. throwing, kicking) skills
specialised movement skills movement skills that are required in more organised games and activities
zone defence involves players guarding or defending a particular space on the court or field, rather than individual opposition players

8.4 Exercise

8.4 Exercise

Select your pathway

LEVEL 1	LEVEL 2	LEVEL 3
1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 14	12, 13, 15, 16	11, 17, 18, 19, 20

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Check your understanding

Identify whether the following statements are true or false.

Statement	True or false
1. Movement concepts are action words.	
2. Skill themes are grouped into four main categories.	
3. The movement analysis framework wheel shows how the skill themes and movement concepts interact with each other.	
4. Tactics and strategies in most sports relate to defensive principles only.	
5. Generally speaking, the more an individual or team has control of the ball, the greater the number of scoring opportunities.	
6. In badminton doubles, players should use the side-by-side attacking formation.	
7. Strategies and tactics are determined by the opposition team as well as by the environmental and playing conditions.	
8. Teaching students to dribble a basketball on a straight or curved pathway is an example of spatial awareness.	
9. You can determine the effectiveness of a team's strategies by using statistics and match analysis.	
10. Game plans tend to remain fairly constant over a season.	

Apply your understanding

11. **Explain** how teaching movement concepts can help with learning strategies and tactics.
12. **Outline** the basic differences between game plans and tactics and strategies.
13. **Explain** the role of modified games in the development of tactics and strategies.
14. **Identify** the three principles that govern most offensive strategies and tactics.
15. **Identify** which three principles govern the development and implementation of most defensive strategies and tactics.
16. **Explain** the basic aim of the defensive side-by-side strategy used in badminton. How do teams use this strategy in a game?
17. You are coaching a junior basketball team. **Explain** how you could use the CHANGE IT principles to challenge the more advanced players on your team.
18. **Discuss** the advantages and disadvantages of a team adjusting their strategies and tactics during a match.
19. **Describe** the use of levels (high, middle, low) and how they can be used to improve sports performance.
20. **Justify** why fundamental movement skills, specialised movement skills and strategies are developed in that particular order.

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Online Resources

on Resources

Below is a full list of **rich resources** available online for this topic. These resources are designed to bring ideas to life, to promote deep and lasting learning and to support the different learning needs of each individual.

Topic PDF

- 8.1 Movement concepts and strategies (tpdf-3596) ☐

Digital documents

- 8.3 Strategic sports (doc-14694) ☐
- Badminton practical (doc-14696) ☐
- Badminton assessment (doc-14695) ☐
- Movement strategies assessment (doc-39561) ☐

Video eLessons

- 8.1 To come (eles-6105) ☐

Interactivities

- 8.2 Skill themes (int-6332) ☐
- Movement concepts (int-6333) ☐
- 8.4 Crossword (int-9003) ☐

Solutions

- 8.4 Answers: topic 8 ☐

Weblink

- 8.3 Badminton ☐

Teacher resources

There are many resources available exclusively for teachers online.

To access these online resources, log on to **www.jacplus.com.au**.

9 Physical activity plans for fitness, health and wellbeing

LESSON SEQUENCE

9.1 Overview 349
9.2 Health and fitness 350
9.3 Physical activity for health and wellbeing benefits 354
9.4 Assessing physical activity 358
9.5 Barriers to participation in physical activity 364
9.6 Physical activity for fitness and fitness profiles 368
9.7 Training principles 375
9.8 Training methods 380
9.9 Training programs 388
9.10 Review 390

FIGURE 9.1 There are many ways to be physically active and they all improve your health.

LESSON
9.1 Overview

Hey students! Bring these pages to life online

Watch videos

Engage with interactivities

Answer questions and check results

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9.1.1 The benefits of good health

Being fit and healthy has many benefits, including less sickness, more energy and a happier state of mind. Good health and wellbeing means an improved quality of life across all areas of health, including physical fitness. There are many ways to assess our levels of physical activity to determine whether we meet the national guidelines. Overcoming barriers to physical activity can be challenging, but with knowledge and support, we can develop simple training programs to enhance all areas of health, wellbeing and **fitness**.

fitness physical capacity to do various physical activities, measured by testing a range of components

ESSENTIAL QUESTION

- Why is it important for all individuals to be involved in regular physical activity?
- How can this contribute to health and wellbeing at different stages of life?

STARTER QUESTIONS

1. What types of physical activities do you engage in regularly?
2. What barriers do you have to being active?
3. Do you know how to test your own and others' fitness levels?
4. What types of training activities could you do to improve fitness?

on Resources

Video eLesson Physical activity plans for fitness, health and wellbeing (eles-6106)

LESSON
9.2 Health and fitness

LEARNING INTENTION

- Describe what is meant by health and wellbeing and compare this to fitness.

ENGAGE

In small groups, brainstorm words associated with physical health, mental health, social health, spiritual health and fitness.

weblink Use the **Creating word art** weblink in your Online Resources to create a word cloud that defines the terms 'health' and 'fitness'.

Share your group's definitions and word cloud with the class.

FIGURE 9.2 Eating healthy foods, developing a positive self-image, showing self-respect and maintaining a healthy body are some of the aspects of optimal health, wellbeing and fitness.

9.2.1 What is health, wellbeing and fitness?

Health, wellbeing and fitness are the most valuable assets an individual can possess, and they have a large influence over the quality of your life.

Health and wellbeing is much more than just a physical state. For an individual, good health and wellbeing means a good quality of life. Health is also dynamic. It is constantly changing and it is subjective (i.e. it varies from one person to another).

FIGURE 9.3 What is fitness?

The Australian Better Health Commission (BHC) defines health from both an individual and community perspective:

> To the individual, good health means improved quality of life, less sickness and disability, a happier personal, family and social existence, and the opportunity to make choices in work and recreation. To the community, good health means a higher standard of living, greater participation in making and implementing community health policies, and reducing health care costs.

There are five dimensions of health and wellbeing: physical, mental, emotional, social and spiritual. These all contribute to overall health and wellbeing.

physical health physiological functioning of the body

mental health relates to emotions, thoughts and behaviours. It involves the functioning of the mind and ability to cope with daily stresses and decision-making.

resilience the ability to recover quickly from difficulties; to be able to 'bounce back' from challenges

social health ability to develop and maintain positive relationships with others, including family, friends, peers and colleagues

Physical health and wellbeing

Physical health and wellbeing is perhaps the area of health you are most familiar with. It refers to the physiological functioning of the body and the ability to complete daily tasks. It is the aspect of health and wellbeing that is most closely linked to fitness. To ensure the efficient functioning of your body, you need to:

- eat regularly and follow a diet based on sound dietary guidelines
- regularly participate in exercise and physical activity
- decrease sedentary behaviours
- ensure quality sleep
- practise good dental and body hygiene.

FIGURE 9.4 Many people find that creative activities, such as listening to music and writing, are helpful outlets for their emotions.

Mental health and wellbeing

Mental health and wellbeing refers to the functioning of a person's mind, and the ability to cope with the pressures and stress of daily living. It also refers to the ability to think and process information to make reasonable decisions and resolve problems. Your self-esteem and confidence are closely related to your state of mental health. Mental health and wellbeing is characterised and supported by:

- a positive self-image
- effective decision-making skills
- the ability to manage daily stress and anxiety
- optimism and positive self-talk.

Emotional health and wellbeing

Emotional health and wellbeing refers to your ability to manage and express your emotions appropriately. This does not mean that you need to be positive all of the time. There are times when it is appropriate to be sad and upset. However, being sad and upset for a long period may point to poor emotional health and wellbeing. Emotional health and wellbeing is associated with:

- expressing and receiving feelings appropriately
- managing emotions appropriately
- having **resilience**.

FIGURE 9.5 Friendship is important for wellbeing.

Social health and wellbeing

Social health refers to the ability to develop and maintain positive relationships with others, including family, friends, peers and colleagues. Your level of social health can be optimised by:

- developing the personal skills of effective communication, decision-making and conflict resolution
- developing relationships with a variety of people

- behaving in a socially acceptable manner
- demonstrating respect and empathy for others.

Spiritual health and wellbeing

Spiritual health and wellbeing encompasses our beliefs, values, morals and ambitions. It provides us with a sense of purpose and belonging. It is characterised by:

- feeling connected to something bigger than ourselves
- having a reason and a purpose in different situations
- being confident in what we value, to help us make everyday decisions.

spiritual health encompasses our beliefs, values, morals and ambitions

Inter-relationships between health and wellbeing

No one dimension of health and wellbeing works on its own. They can all positively or negatively affect each other. For example, getting enough exercise, recreation and rest is not only important for maintaining the effective functioning of your body and optimal physical health and wellbeing, it is also important for good mental health. This is because physical activity can increase your confidence and it can also be completed with others, with benefits for positive relationships and improved social health and wellbeing.

9.2.2 What is fitness?

Physical fitness is your ability to complete your daily activities without becoming exhausted. It also means having enough energy left to be able to deal with emergencies. Having adequate rest and relaxation is related to a good physical fitness level.

Some aspects of fitness directly apply to everyday health and wellbeing, and some are more sports-specific and aim to increase sports performance. Developing a high enough level of physical fitness will improve the way your body and mind function, enhance your quality of life and could make you live longer. The different aspects of fitness will be discussed in lesson 9.3.

9.2 ACTIVITY

While 'being fit' doesn't define your health, health and wellbeing are related to your fitness levels.

Fitness or lack of fitness can impact all dimensions of health and wellbeing and your health and wellbeing can impact your levels of fitness.

a. In pairs or small groups, discuss how increasing your fitness may positively impact your health and wellbeing. Then, discuss how greater health and wellbeing can lead to increased fitness.

b. Debate against another small group, 'Does fitness lead to greater health and wellbeing or does greater health and wellbeing lead to greater fitness?'

FIGURE 9.6 Being fit helps all aspects of your health and wellbeing.

9.2 Exercise

9.2 Exercise

Select your pathway

LEVEL 1	LEVEL 2	LEVEL 3
1, 2, 4, 5	3, 6, 7, 9	8, 10

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Check your understanding

1. MC Being confident and able to handle everyday stresses is an example of:
   - A. physical health and wellbeing.
   - B. social health and wellbeing.
   - C. mental health and wellbeing.
   - D. emotional health and wellbeing.
2. MC Being able to complete daily activities comfortably and having body systems that function effectively is an example of:
   - A. physical health and wellbeing.
   - B. social health and wellbeing.
   - C. mental health and wellbeing.
   - D. emotional health and wellbeing.
3. MC Being resilient and managing and expressing your feelings appropriately is an example of:
   - A. physical health and wellbeing.
   - B. social health and wellbeing.
   - C. mental health and wellbeing.
   - D. emotional health and wellbeing.
4. Having good physical health and wellbeing is the same as being fit. True or false?
5. Being regularly active can improve all dimensions of health and wellbeing. True or false?

Apply your understanding

6. In your own words, **describe** the different dimensions of health and wellbeing.
7. For each dimension of health and wellbeing **give** an example of what good health looks like.
8. **Describe** how your physical health and wellbeing could impact the other dimensions of health and wellbeing: mental, emotional, spiritual and social.
9. **Explain** the difference between health and fitness.
10. **Propose** how the dimensions of health can positively affect physical health and wellbeing.

LESSON
9.3 Physical activity for health and wellbeing benefits

LEARNING INTENTION

- Outline the Australian physical activity and exercise guidelines and describe the health and wellbeing benefits of meeting these.

9.3.1 Balance is key

To maintain good health and wellbeing, we must have a balanced and nutritious diet, satisfying social relationships, good sleep, adequate rest and a regular exercise regime. Physical activity is an important part of maintaining good overall health and wellbeing. High levels of sedentary behaviour can be dangerous to your health. It is linked to developing chronic disease and obesity.

In 2018, the World Health Organization gave Australian children a D-minus for their overall physical activity levels. This was based on data showing the activity levels of adolescents aged 11 to 17 years. The data showed that Australian adolescents are not getting enough physical activity. In fact, only 18 per cent of young people (11–17 years) were meeting the physical activity guidelines of 60 minutes of moderate-to-vigorous physical activity each day.

In 2021–22, the *Australian Health Survey: Physical Activity* found that:

- less than 10 per cent of young people (15–17 years) met the physical activity guidelines (see 9.3.2)
- over a quarter (26.8 per cent) did at least 60 minutes of exercise per day but not always to the intensity required (moderate to vigorous).

ENGAGE

FIGURE 9.7 Body shape may not indicate a person's level of fitness.

With a partner, compare the benefits of being fit and active with being unfit.

Consider the impact that being fit or unfit may have now and in the future.

9.3.2 Australia's physical activity and exercise guidelines

Australia's physical activity and exercise guidelines, updated in 2021, make the following recommendations:

- Physical activity should be done on a daily basis and this activity can be done over a 24-hour period.
- Daily physical activity should include some strength-based activity.
- People should break up sedentary behaviour with movement.
- Young people require a certain amount of uninterrupted sleep for optimal health and wellbeing benefits.

For details of the physical activity guidelines for different ages, see table 9.1.

TABLE 9.1 Physical activity guidelines

Guideline	5–17 years	Adult (18+)
Physical activity	• At least 1 hour, moderate to vigorous, mainly aerobic activities per day • Vigorous activities at least 3 times a week • Light activities several hours a day	• Be active most days (preferably all) • Moderate activity: 2.5–5 hours a week OR • Vigorous activity: 1.25–2.5 hours a week OR • a combination of both
Strength	At least 3 days a week	At least 2 days a week
Sedentary time	Minimise, break up long periods of sitting	Minimise, break up long periods of sitting
Sedentary recreational screen time	Per day, no more than 2 hours	na
Sleep (uninterrupted)	5–13 year olds: 9–11 hours 14–17 year olds: 8–10 hours	na

Source: https://www.health.gov.au/health-topics/physical-activity-and-exercise/physical-activity-and-exercise-guidelines-for-all-australians

FIGURE 9.8 It is recommended that young people do strength-based activities, such as using weights, three times a week.

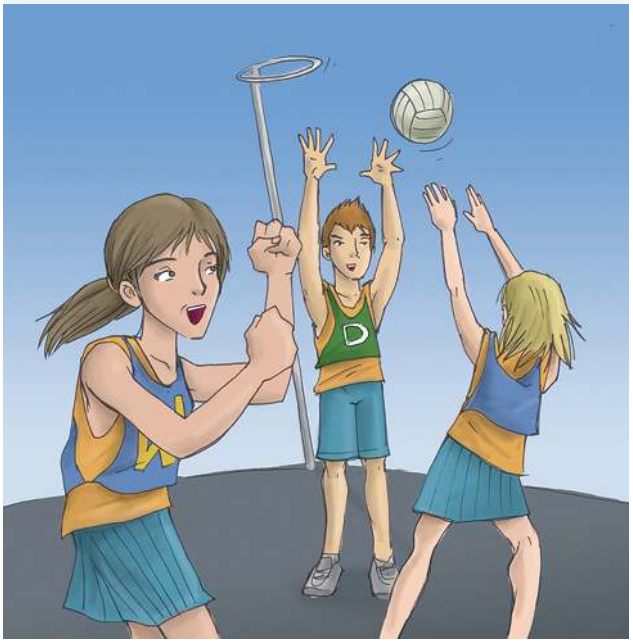
FIGURE 9.9 Walking to and from school is a light activity that can help break up the day.

9.3.3 Benefits of physical activity and fitness

As outlined in the Australian physical activity and exercise guidelines, there are many benefits to increased physical activity and fitness for young people. These benefits cover all of the dimensions of health and wellbeing and can have long-lasting effects.

- Benefits for spiritual, social and emotional health and wellbeing
  - a chance to have fun with friends and family
  - reduced antisocial behaviour
  - stronger cooperation and teamwork skills
- Benefits for mental health and wellbeing
  - better self-esteem and confidence
  - improved self-concept and body image
  - lower anxiety and stress
  - better concentration
- Benefits for physical health and wellbeing
  - healthy growth and development
  - strong muscles and bones
  - improved fitness, including coordination and movement skills
  - improved posture and body conditioning
  - lower risk of disease, including cardiovascular disease, type 2 diabetes and other lifestyle diseases
  - lower risk of unhealthy weight gain.

FIGURE 9.10 Try to include some vigorous activity every day.



DID YOU KNOW?

The physical tiredness you feel after exercising isn't the same as everyday fatigue. Once your body adjusts to exercise, you'll have more energy than ever.

FIGURE 9.11 How can you do more for your fitness and wellbeing?

9.3 ACTIVITY

1 Evaluation

a. Evaluate your current physical activity levels against the guidelines. Do you meet them? Why or why not? Compare this with a peer.

b. Evaluate your current sedentary behaviour against the guidelines. Do you meet them? Why or why not? Compare this with a peer.
c. Evaluate your current sleep habits against the guidelines. Do you meet them? Why or why not? Compare this with a peer.

2 Case study

Jen, a 17-year-old, completes the following activities over a two-week period while away on holidays. She loves being outdoors and trying different things, especially when on holiday. She is very lucky that where she is staying has a variety of activities on offer.

She completes the following activities during her holiday.

	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Week 1	90 min bush walk to the local lookout	2 hr abseiling activity	30 min in the pool 30 min bushwalking	2 hr rope climbing course	60 min in the pool	3 hr kayak tour	60 min in the pool
Week 2	1 hr rope climbing and 1 hr abseiling	2 hr bushwalk to another local lookout	90 min horse ride 30 min in the pool	60 min in the pool	10 000 steps achieved walking the local streets	60 min in the pool	1 hr rope climbing and 1 hr abseiling

a. Identify and justify which of the activities above are muscle strengthening.
b. Using your understanding of the relevant guidelines, evaluate Jen's physical activity while on holidays.

9.3 Exercise

9.3 Exercise

Select your pathway

LEVEL 1	LEVEL 2	LEVEL 3
1, 2, 3, 5	4, 6, 8, 9	7, 10

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Check your understanding

1. MC How much physical activity should young people do in a 24-hour period?
   A. 2 × 30 minute efforts
   B. 1 × 1 hour effort
   C. An accumulation of at least 2 hours
   D. An accumulation of at least 1 hour
2. MC For young people, it is recommended that they engage in strength-based activities at least:
   A. once a day.
   B. every third day.
   C. 3 times a day.
   D. 3 times a week.

3. MC It is recommended that young people have no more than how many hours of screen time for recreational purposes per day?
   - A. No more than 1
   - B. No more than 2
   - C. No more than 3
   - D. It does not matter as long as the time is broken up with movement
4. It is recommended that 5–13-year-olds get more hours of uninterrupted sleep than 14–17-year-olds. True or false?
5. The recommended hours of uninterrupted sleep for 14–17-year-olds is:
   - A. 8–10 hours.
   - B. 9–11 hours.
   - C. 10–12 hours.
   - D. 12+ hours.

Apply your understanding

6. **Outline** the physical activity and exercise guidelines for young people.
7. **Compare** the physical activity and exercise guidelines for young people to those for adults.
8. **Outline** three ways your school could increase the levels of physical activity of students during recess and lunchtime.
9. **Outline** three ways your school could help students decrease their levels of sedentary behaviour.
10. **Discuss** a benefit of physical activity for each dimension of health and wellbeing.

LESSON
9.4 Assessing physical activity

LEARNING INTENTION

- Evaluate the different methods of assessing physical activity.

9.4.1 Taking control of health and wellbeing

It is important to assess the amount and type of physical activity you are doing. This gives you greater control over the choices you make about your physical health and wellbeing. Several methods are used to assess physical activity, depending on age group and population.

As suggested by the Australian physical activity and exercise guidelines, when assessing physical activity levels, consider the frequency, intensity, duration (time) and type. This helps you understand whether you are meeting the recommendations. These principles are discussed in more detail in lesson 9.7.

While frequency (how often you are active), duration (how long you are active for) and the type of activity (strength or aerobic based) can only be measured in a small number of ways, intensity (how hard we are working) can be measured in a variety of ways, using either subjective or objective methods.

While subjective methods can be easier and more practical to use, they lack accuracy. Objective methods are generally more accurate; however, they are not as practical or easy to access and use.

ENGAGE

FIGURE 9.12 There are many ways to assess our physical activity levels, including using smart watches and apps.

In small groups or pairs, list the different ways you can measure physical activity.

9.4.2 Subjective methods of assessing physical activity intensity

Subjective methods of assessing physical activity often depend on our own perceptions. They are predominantly used for measurement in populations, rather than for individuals.

subjective methods rely on own perceptions

Although subjective methods are quite accessible, they have some disadvantages. First, barriers of language and memory can affect how accurate any assessment using subjective methods is. Second, they can be affected by 'social desirability bias', which is when participants change their responses from what actually happened to what they think they should say.

Nevertheless, subjective methods are still useful tools. They are often easier to access and use because they don't need specialised equipment. Three useful methods are rate of perceived exertion (RPE), self-report and recall.

Rate of perceived exertion (Borg rating scale)

One way to calculate the intensity of a workout is by using the RPE. This scale is based on how your body feels to you during exercise, including in terms of fatigue, breathing rate, heart rate and how much you sweat.

Since how you feel during a certain kind of exercise may be completely different from how another person feels, your rates of perceived exertion for the same kind of exercise will likely be different.

When using this scale, 'moderate intensity' exercise corresponds to between 11 and 13 on the scale, whereas 'vigorous intensity' exercise would be anything above 14, where an individual perceives the activity as hard.

You might begin training at an intensity of 11–13, but as your fitness improves, you could train at 14–16 by incorporating more vigorous exercise into your training regime.

FIGURE 9.13 Rate of perceived exertion

RPE scale	
6	Very very light
7	
8	
9	Very very light
10	
11	Fairly light
12	
13	Somewhat hard
14	Hard
15	
16	
17	Very hard
18	
19	Very very hard
20	

Self-report

Self-report includes a variety of assessment methods, such as physical activity diaries, questionnaires (conducted by either an interviewer or the individual) and reports provided by others (e.g. parents reporting on the activity levels of their children).

Diaries or logs, written up soon after physical activities are completed, provide a detailed record of an individual's physical activities in a given day.

Recall

The recall method usually consists of short, simple questionnaires of approximately 5–15 items that take up to 15 minutes to complete. They investigate physical activity patterns in the recent past (e.g. the last week or month). The main aims of this method are to:

- provide basic data that can be used to assess physical activity patterns in large populations
- give public health agencies an overview of physical activity patterns across large groups within the community.

FIGURE 9.14 Everyday activities can have moderate intensity levels and improve fitness.

9.4.3 Objective methods of assessing physical activity

Objective methods of assessing physical activity often rely on data or observations. These are predominantly used for measurement in individuals.

Direct observation

An experienced observer collects data that measures the individual's type of activity, intensity levels, time of activity and the environmental conditions. This method collects similar information to a diary. This makes it comprehensive, but it requires an observer, which can limit its accessibility.

Ability-to-talk test (respiratory rate)

The ability-to-talk test is a very easy method for indicating intensity. This method assesses whether a person has enough breath during an activity to speak comfortably. The higher your respiratory rate, the harder it can be to talk. It is very difficult to talk when you are working at maximum intensity. This method can be used to identify low intensity, **moderate intensity** and **vigorous intensity** levels.

objective methods rely on data or observations

moderate intensity sub-maximum exercise that increases heart rate and breathing rate somewhat above resting levels

vigorous intensity high-intensity activity, such as running and playing sport, which raises heart rate and breathing rate significantly

TABLE 9.2 The ability-to-talk test can help you assess the intensity of your exercise.

Exercise intensity	What it looks like	
Low–moderate intensity	You can hold a conversation with ease, maybe even sing.	

Moderate intensity	You can talk with possible pauses between sentences, but you cannot sing.	
Vigorous intensity	You cannot say more than one or two words without pausing to take a breath.	

DID YOU KNOW?

A normal breathing rate for an adult at rest is 8–16 breaths per minute. For an infant, the normal rate is up to 44 breaths per minute.

Heart rate telemetry

A person can wear a device to measure their heart rate. This can be a smartwatch, a device on a strap around the chest or similar. Heart rate telemetry is a valid method for assessing physical activity, as a person's heart rate directly reflects their physiological response to physical intensity.

Target heart rate

When we are at rest, our muscles require less oxygen because they are not working very hard. This means our heart rate is relatively slow (around 60–100 beats per minute). When we move (work), our heart rate increases. There is a limit to how fast our heart can beat during physical activity. This is called the **maximum heart rate (MHR)**.

maximum heart rate (MHR) approximated by subtracting your age from 220. For example, a 15-year-old would have an MHR of 220 – 15 = 205.

Heart rate is best measured using heart rate telemetry (as above) or it can be calculated by measuring your pulse. The best pulse to use is your carotid pulse (at the side of your neck) using your fingers, not your thumb. Count the number of beats you feel for 20 seconds and multiply this number by three to get an indication of your heart rate in beats per minute. This method can be used to determine whether a person's heart rate is within the target zone during physical activity.

- *Moderate intensity level*. A person's target heart rate should be 50–70 per cent of their MHR.
- *Vigorous intensity level*. A person's target heart rate should be 70–85 per cent of their MHR.

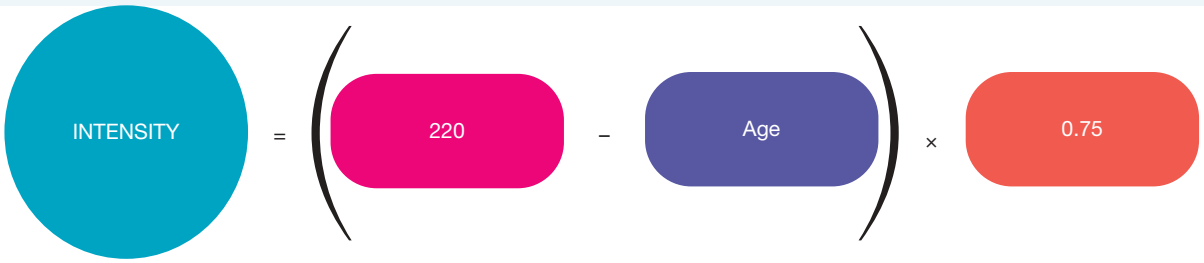
To improve our aerobic fitness, the pace at which we exercise must be intense enough to make the heart work at between 70 and 85 per cent of its maximum rate. This is the aerobic target heart rate zone, or **aerobic training zone**. When we begin an exercise program, we should aim for a target heart rate of around 70 per cent of our MHR. As our fitness improves, we should lift our target heart rate to 75 per cent MHR, and higher again with continued improvement. A progressive lowering of our resting heart rate indicates an improving level of fitness.

aerobic training zone a level of intensity that causes the heart rate to be high enough to cause training gains, usually between 70 and 85 per cent of its maximum rate.

How, then, do we estimate our target heart rate? The easiest method is to subtract your age from 220 and multiply by the percentage MHR you are aiming for — in this case, 70 per cent MHR. For a 15-year-old, for example, this would be (220 – 15) × 0.70 = 144 beats per minute (to the nearest whole number). The 15-year-old

should then aim to keep their heart rate within this zone for a sustained period. When they are comfortable with this level of intensity, the target heart rate could be lifted to 75 per cent MHR, or 154 beats per minute.

FIGURE 9.15 Calculating target heart rate for 75 per cent of maximum heart rate (MHR)



Pedometry

The person wears a **pedometer**, either as a separate device or using their smart watch or phone, to count their steps. Pedometers measure the number of steps taken and estimate the distance walked if stride length is known. Pedometry can also be used to estimate the energy spent on physical activity energy. It does this by using the energy costs associated with walking.

pedometer device that measures the number of steps taken during the day and estimates the distance covered in kilometres

DID YOU KNOW?

Washing the car, vacuuming the house and walking the dog are all activities with a moderate intensity level.

9.4 ACTIVITIES

1 Measuring breathing rate

Working with a partner, measure and record your breathing rate per minute (count for 30 seconds and then double it) and heart rate per minute (count for 30 seconds and then double it) after each of the following activities:

a. sitting still for one minute
b. walking for one minute
c. skipping for one minute non-stop
d. bent knee sit-ups for one minute.

Consider the following:

i. By how much did your breathing rate increase after skipping?
ii. What percentage of maximum heart rate (MHR) did you achieve after each activity? (MHR = 220 – your age)
iii. Rate each activity as low intensity, moderate intensity or vigorous intensity.
iv. Draw a graph showing the relationship between heart rate and the intensity of activity.

2 Daily steps

a. Using a class set of pedometers or your digital devices (phone or smart watch), determine the number of steps the class takes in a day.
b. As a class, record the results in a table.
c. Discuss the advantages and disadvantages of using pedometers as a tool to assess physical activity.

3 Comparing activity levels

doc-14719

a. Interview a working adult about their activity time. Use the **Self-report** worksheet in your Online Resources. Compare their activity time to your own.
b. Interview a grandparent and complete the same report for them. Compare it to both your own and the working adult's activity time.
c. How does activity time change as people grow older?

4 Subjective ranking

Categorise the people listed below as:

- unfit
- moderately active
- active
- very active.

You will need to think about what being active means and estimate their likely physical activity levels based on their daily activities and commitments. Use the Australian physical activity and exercise guidelines to help you in your evaluation.

a. *Ahmed, a business executive, who plays competitive squash twice weekly*
b. *Martha, aged 64, who swims daily for one hour and cycles every morning*
c. *Su-Li, a secretary, who attends three aerobics classes each week*
d. *Cadel Evans, a world-class distance cyclist*
e. *Costa, a postie, who works on a bicycle*
f. *Wei, a Year 12 student, who plays social sport at lunchtimes and golf once a week*
g. *Robert, aged 15, who plays for both his school and local football teams*
h. *Mrs Suzie Watson, a PE teacher at a secondary college*
i. *Steve Smith, world-class cricketer*
j. *Myrna, a busy mother of four, who does not schedule exercise time*
k. *Cameron Smith, NRL footballer*
l. *Sandra, competitive bodybuilder*
m. *Roger Federer, world-class tennis player*
n. *Arthur Smith, champion arm-wrestler and darts player*

5 Different activities

a. Participate in physical activity that is not recognised as 'sport', such as a dance class, yoga, bushwalking, rope climbing, geocaching around the school or disc golf.
b. Using one objective and one subjective measure, record the intensity of these activities.

9.4 Exercise

9.4 Exercise

Select your pathway

LEVEL 1	LEVEL 2	LEVEL 3
1, 2, 3, 5	4, 6, 7	8, 9

These questions are even better in jacPLUS!

- Receive immediate feedback
- Access sample responses
- Track results and progress

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Check your understanding

1. MC To estimate maximum heart rate, you subtract your age from:
   A. 220.
   B. 200.
   C. 195.
   D. 175.

2. As exercise intensity increases, heart rate will also increase. True or false?
3. As exercise intensity decreases, breathing rate will increase. True or false?
4. Perceived exertion is an objective measure of physical activity intensity. True or false?
5. MC Which of the following is a subjective measure of physical activity intensity?
   - A. Recall
   - B. Heart rate telemetry
   - C. Breathing rate
   - D. Pedometry

Apply your understanding

6. **Outline** three different ways in which you could assess the intensity of physical activity.
7. **Compare** the advantages and disadvantages of using heart rate telemetry and the talk test for measuring intensity levels of physical activity.
8. Self-report is one way to assess your physical activity level. However, this method is not suitable for younger children and older adults. **Evaluate** why this is. **Propose** which methods might be more suitable.
9. **Identify** and **justify** the most appropriate measure of intensity of physical activity for:
   - a. a Year 10 PE class of 20 students
   - b. a state-level athlete.

LESSON
9.5 Barriers to participation in physical activity

LEARNING INTENTION

- Describe common barriers to engaging in physical activity and suggest ways to overcome them.

ENGAGE

FIGURE 9.16 Changing your thinking to see movement as an opportunity, not an inconvenience, requires support and a long-term vision.

Have you noticed that some people find it easy to start and maintain regular physical activity, while others find this much more difficult?

In a small group, brainstorm a list of barriers to physical activity that an individual may face.

9.5.1 Changing behaviour can improve levels of activity

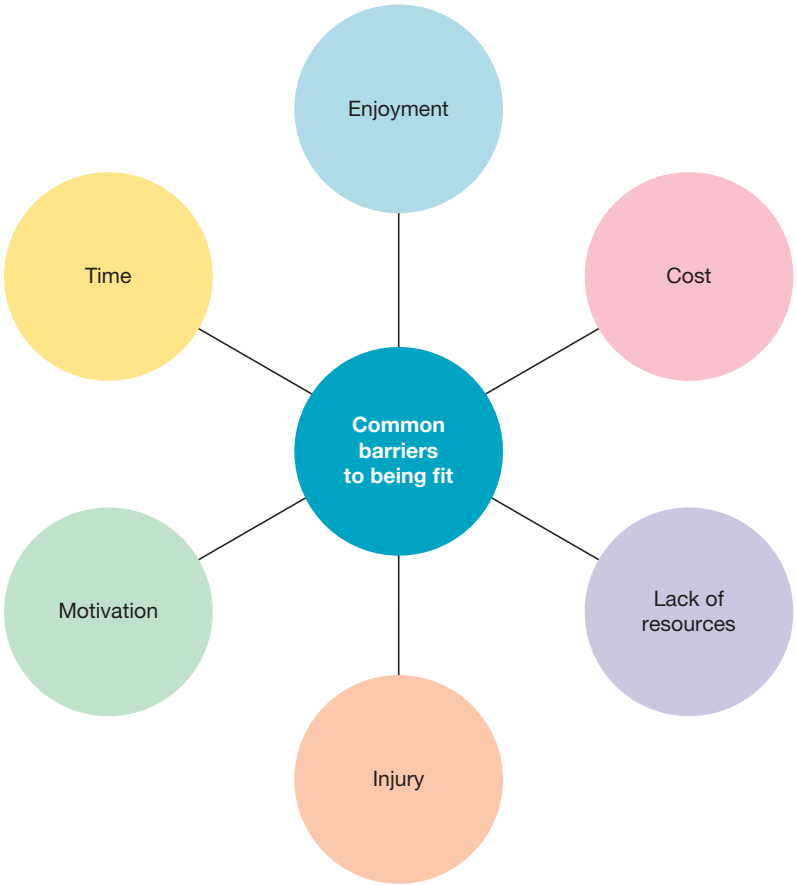
It is important to understand the barriers that can stop us from meeting the physical activity guidelines. There are many reasons why people fail to participate in physical activity at the recommended level. However, there is evidence that behavioural change may lead to increased activity levels.

FIGURE 9.17 Too much work can be a barrier to physical activity.

Physical activity takes many forms. It can be as simple as walking or as sophisticated as downhill skiing. Failure to engage in physical activity at the recommended levels could be due to:

- insufficient knowledge and skills on how to be active and the benefits of being physically active
- income, or the cost of the activity
- geographic location
- climate
- lack of enjoyment of the activity
- lack of time
- injury
- lack of encouragement and support
- low self-efficacy
- poor coaching or equipment.

FIGURE 9.18 Common barriers to being fit



9.5.2 Setting SMART goals

Setting short- and long-term goals can be an effective way to overcome some common barriers. When setting goals, it is suggested that you follow the SMART rule. This rule states that each goal should be:

- **S**pecific
- **M**easurable
- **A**chievable
- **R**ealistic
- **T**imely.

Often, people set goals that are too vague, such as 'I want to be more active' or 'I want to be a better tennis player'. Vague goals are not motivating and you have no way to track your progress, so there is a good chance you will not achieve your goal.

In contrast, a **SMART goal** is broken down into small achievable parts that you can measure against specific times and dates. For example, instead of hoping to 'swim faster', you might set the goal of 'I want to swim 1 kilometre in 25 minutes by 30 June'. This is more motivating because you can easily track your progress and work out exactly what you need to do to achieve success.

SMART goal goals that are specific, measurable, achievable, realistic and timely

TABLE 9.2 Example of SMART goal setting

	Example
Specific	I will swim 1 kilometre in 25 minutes by 30 June.
Measurable	I can measure all aspects of this goal, including the distance, the time taken to swim the distance and how many days are left until the deadline.
Achievable	The local pool is 50 metres and I can already swim 10 laps without stopping, so my goal of swimming 20 laps in 25 minutes is something I can achieve.
Realistic	I can already swim 500 metres without stopping at the moment so 1 kilometre is a realistic goal.
Timely	I will achieve my goal by 30 June, which gives me time to practise and improve.

9.5.3 Self-efficacy

self-efficacy a person's belief in their ability to be successful across a range of challenging situations

Self-efficacy helps to explain why some people can commit to regular physical exercise and why some people struggle with this.

Self-efficacy in terms of physical activity can be described as a person's belief in their ability to be active across a range of challenging situations. It involves our behavioural skills as well as our psychological belief/confidence in our ability to be active. People with low self-efficacy lack confidence in their ability to be physically active when faced with challenges (e.g. when it is raining or they are feeling unwell). These feelings may be due to:

- previous failure to do regular physical activity
- a perceived lack of ability to perform the physical activity
- observation of and comparison with other people
- lack of social and verbal encouragement relating to task performance
- lack of excitement or motivation; for example, due to a perceived lack of ability
- lack of skills required to perform the activity.

Overcoming low self-efficacy

Strategies for overcoming low self-efficacy include:

- Select activities that you feel confident doing so that you will be more prepared to face challenges.
- Develop strategies/solutions to help overcome situational barriers. For example, what will you do if you become unwell or if you have no-one to exercise with?

- Work with a trainer/coach to develop skills and receive encouragement.
- Inform friends and family of your physical activity plans and ask for their encouragement.
- Forget about the past. Take steps forward!

9.5 ACTIVITIES

1 Barriers to participation survey

a. In groups, develop a survey sheet to determine the barriers to participation for students at your school.
b. Survey two different year levels.
c. Graph and discuss the results.

2 Move about

According to head researcher Professor Kerry Mummery from Rockhampton's Central Queensland University, adults need to find new ways of dealing with obesity, which is one of society's biggest problems. Professor Mummery's tips for getting more exercise at work include the following:

- *Plan your day to incorporate more physical activity, no matter how small. Walk to the train station or bus stop instead of driving. Try walking to the next train station.*
- *Make a habit of moving from your desk at intervals during the day. Walk over to the photocopier or printer instead of asking someone else to do it. Get your own coffee or water bottle.*
- *When communicating with colleagues in the same building, get up and walk over to their desks instead of sending an email or calling them.*
- *Take the stairs rather than the lift.*
- *Walk outside to have your lunch, rather than eating at your desk or even in the lunchroom.*

Professor Mummery's five tips are for adults at work. Suggest how you could modify each tip to make it relevant to you in your day-to-day life and the lives of secondary school students.

9.5 Exercise

9.5 Exercise

Select your pathway

LEVEL 1	LEVEL 2	LEVEL 3
1, 2, 4, 5	3, 6, 9	7, 8, 10

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- Receive immediate feedback
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Check your understanding

1. Barriers to physical activity are more likely to be overcome with clear plans and strategies. True or false?
2. Barriers to physical activity can change throughout one's lifetime. True or false?
3. MC What does the 'T' in SMART goal setting stand for?
   - A. Type
   - B. Timely
   - C. Thoughtful
   - D. Theory based
4. MC Having a way to evaluate your progress and achievement of a goal makes the goal:
   - A. specific.
   - B. measurable.
   - C. achievable.
   - D. realistic.
5. Setting SMART goals is more likely to result in success compared to other types of goals. True or false?

Apply your understanding

6. **Explain** how each of the following might affect participation in physical activity or the choice of activities.
   a. Income
   b. Geographic location
   c. Low self-efficacy
7. **Propose** a way for secondary school students to overcome the barrier of 'lack of time' and get more physical activity.
8. Many people would argue that 'cost' is not a good reason for not being active enough. **Determine** to what extent you agree with this statement.
9. **Outline** how the barriers to physical activity change throughout the lifespan by considering a primary school student, secondary school student, adult and a retired person.
10. Research shows that participation in organised sport decreases significantly in the later years of secondary school. **Explain** why this is and suggest two ways to overcome this issue.

LESSON
9.6 Physical activity for fitness and fitness profiles

LEARNING INTENTION

- Identify, describe and measure the different components of fitness.

ENGAGE

Consider surfer Steph Gilmore, runner Peter Bol and skateboarder Keegan Palmer (see figure 9.19).

- What fitness components would they need to excel in to be successful in their sports?
- What are the similarities and differences in the fitness required in their sports?

FIGURE 9.19 Different sports require different types of fitness.

9.6.1 Physical activity and fitness

As previously discussed, physical activity for health, wellbeing and fitness are very different. Once we have overcome any barriers and have increased our regular physical activity levels, we will begin to see a variety of health and wellbeing benefits. We can then start to focus on increasing our fitness. However, to gain a thorough fitness profile, we need to measure fitness components across a number of areas.

Physical fitness includes the following components:

- aerobic power
- muscular endurance
- muscular strength
- flexibility

- body composition
- muscular power
- speed (anaerobic power)
- agility
- reaction time
- balance
- coordination.

These components affect performance in any sport or recreational activity. To analyse the kind of fitness required for basketball, gymnastics, snooker or any other physical activity, you need to recognise the fitness components most relevant to the activity. The fitness required by an elite gymnast, for example, is different from the fitness needed to play professional basketball. Once you know the specific fitness demands of a particular activity, you can prepare physically for the activity. Use the **Components of fitness** interactivity in your Online Resources to explore the fitness components of different sports.

on Resources

Interactivity Components of fitness (int-6411)

9.6.2 Fitness components

Components related to body functioning

Some of the fitness components target essential body functions that have a direct impact on physical health and wellbeing. Improved aerobic power (also known as aerobic fitness or aerobic capacity), muscular strength, flexibility, muscular endurance and body composition all positively affect our physical health and wellbeing.

FIGURE 9.20 Developing aerobic power is an important part of fitness.

Regular exercise strengthens bones and muscles, which give shape to the body. Physical activity promotes healthy bone growth, which is important to support our weight. Healthy bones are also necessary for basic motor skills, such as carrying objects. Exercise strengthens the heart, making it a more effective pump for supplying the body with oxygen and nutrients. The heart muscle needs to remain strong so that it can pump blood every day for our entire lives. Exercise increases the heart's ability to contract forcefully, allowing it to pump more blood into the circulatory system with each beat. Physical activity also improves breathing and the ability of the lungs to take in oxygen. The harder we work, the more oxygen we need to deliver via the blood to the working muscles. This is why we breathe more rapidly during exercise sessions.

Aerobic power

Aerobic power is the maximum rate of energy produced by the aerobic energy system. In other words, it is the body's ability to continue exercising over an extended period at a low to medium intensity. This requires the heart and lungs to be functioning efficiently. Aerobic power can be increased through participation in activities such as jogging, cycling and swimming. Sportspeople who require a high level of aerobic power include midfielders in hockey, soccer and football. Likewise, distance athletes such as road cyclists, triathletes and rowers require a high level of aerobic power.

aerobic power the body's ability to continue exercising over long periods using the large muscles of the body. It is also known as aerobic fitness or aerobic stamina/endurance

FIGURE 9.21 Distance athletes require a high level of aerobic power.

FIGURE 9.22 Muscular endurance is important for long-duration physical activities.

Muscular endurance

Muscular endurance (sometimes referred to as local muscular endurance, or LME) is the ability of a muscle or muscle group to sustain or repeat a force over a long period of time (e.g. running a marathon). LME for a specific movement may be improved by increasing the time the force is sustained (e.g. by gradually increasing how far you run in a single session). LME is required in many sports, but it is crucial in team games and long-duration events, such as triathlons.

muscular endurance ability of a muscle or muscle group to sustain or repeat a force over a long period

muscular strength exertion of a single maximum force by a muscle or muscle group

Muscular strength

Muscular strength is the ability of the muscles to apply a single maximum force to overcome resistance. The resistance may be:

- a body part (e.g. the core when doing situps)
- the weight of the whole body (e.g. when doing pull-ups)
- an object external to the body (e.g. a barbell).

A muscle's strength is measured by how much weight it can lift or how much resistance it can overcome. Strength is important in many sporting and recreational activities, including competitive weightlifting, which is a contest of pure strength. Core strength also supports good posture.

Flexibility

Flexibility is the range of movement of a joint. It varies from joint to joint within the body. Flexibility is greatest at birth and decreases over the lifespan. Being active reduces how quickly flexibility is lost.

All athletes should aim to have good flexibility. It reduces the amount of muscle stiffness and soreness, and reduces the chance of injury. Gymnasts and dancers often have very high levels of flexibility.

flexibility the range of motion of specific joints and the muscles that act on them; may be static or dynamic

body composition describing body shape or type

Body composition

Body composition refers to the ratio of fat to non-fat components in the body. Body fat includes essential fat in and around organs, such as the heart, and the fat stored in fat cells around the body. The non-fat components make up your lean body weight and include muscle, bones and organs.

FIGURE 9.23 Muscular strength

Fitness components related to sports performance

Some fitness components are more directly related to sports performance. Improvement in these areas means that athletes can perform movements more safely and with greater skill in a range of sporting and recreational activities. People with adequate development of these fitness components perform better, both in individual sports such as tennis, and team sports such as netball, because their movements are skilful, practised and controlled.

Muscular power

Muscular power is the combination of strength and speed. A powerful movement is achieved as quickly as possible while providing as much strength as possible. Jumping and throwing activities rely on muscular power.

muscular power a combination of speed and strength. When strength is exerted quickly, it is called power.

speed can refer to whole-body speed, where the aim is to move from point A to point B as quickly as possible, or part-body speed, where one or more parts of the body move as quickly as possible to complete a movement

agility the ability to start, stop and change direction rapidly at maximum speed, without losing balance

Speed

Speed can refer to whole-body speed, where the aim is to move from point A to point B as quickly as possible (e.g. in a 100-metre sprint), or part-body speed, where one or more parts of the body move as quickly as possible to complete a movement (e.g. in a discus throw).

Agility

Agility is the ability to start, stop and change body positions quickly without losing balance. Trampolinists and dancers require a high level of agility. Games that involve dodging opponents, such as netball, basketball and hockey, also require agility.

Reaction time

Reaction time is the time that it takes for an athlete to respond to the signal that movement is required. Examples include a sprinter's reaction to the sound of the starting gun, or the time it takes for a soccer goalkeeper to move to save a goal.

Balance

Balance is the ability to remain stable, whether this is static (still) or dynamic (moving). Skiers, horse-riders, gymnasts and surfers need good balance.

Coordination

Coordination is the ability to link a series of movements into a flowing sequence with appropriate timing and accuracy. All sports require coordination skills. Hand–eye coordination is important in racquet sports; football players need to coordinate the placement of the ball onto the kicking foot; and basketballers need to coordinate the timing of the release of the ball while making a jump shot.

reaction time time taken to respond to, or initiate movement after, a given signal or cue; for example, a starter's gun

balance the ability to remain stable, whether static (still) or dynamic (moving)

coordination motor skills component of fitness involving control of movement, such as hand–eye coordination

HEALTH FACT

Due to different hormone levels, females tend to have greater elasticity in their tendons, muscles and ligaments and less muscle around their joints compared to males. This makes females generally more flexible than males.

9.6.3 Fitness profile

To determine your physical fitness, you will need to create a fitness profile. This involves measuring some of your fitness components. This is done in a laboratory exercise in which you do fitness tests. There are a variety of tests for each fitness component. These tests measure your ability in the components of fitness (e.g. aerobic power can be measured by a 20-metre shuttle run test or a 1.6-kilometre run/walk).

Table 9.3 provides a list of tests that can be used for each fitness component. Your teacher will give you guidance on which fitness tests are relevant. See Activity 2 for more information.

Measuring fitness components — fitness tests

TABLE 9.3 Fitness tests

Fitness component	Tests
Aerobic power	• 20-metre shuttle run test (Beep test) • Yo-yo test • 1.6-kilometre run/walk
Local muscular endurance (LME)	• 60-second push-up test • Push-ups on chair • Curl-ups
Muscular strength	• Standing long jump • Grip strength dynamometer • Basketball throw

Flexibility	• Sit and reach
Body composition	• Skinfold test* • BMI (body mass index)
Muscular power	• Vertical jump
Speed (anaerobic power)	• 50-metre sprint
Agility	• Illinois agility run
Reaction time	• Latham reaction time test
Balance	• The stork stand
Coordination	• Alternate ball toss • Hand wall toss

Note: *The skinfold test should be conducted by a health professional to give an accurate and informative reading.

9.6 ACTIVITIES

1 Motivating goals

A fitness program will be more successful if you have goals and motivation. Brainstorm reasons why people would want to be more powerful or flexible, or have more strength, muscular endurance and aerobic power.

2 Fitness profile

a. How fit do you think you are? Predict your level of aerobic power, muscular strength and power, local muscular endurance (LME), flexibility and performance-related fitness.

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b. Use the **Fitness profile** worksheet in your Online Resources to do a number of fitness tests and create your fitness profile.

Instructions

i. Laboratory exercise measurements must be carried out accurately. Listen carefully to all instructions.
ii. Work in a pair or group of three people, depending on the exercise.
iii. Watch the exercise method closely and collect all the equipment you will need.
iv. The 'subject' is the person physically completing the exercise. The subject should concentrate on the physical task.
v. The other group member(s) should conduct the test using the correct protocol and record the results immediately.

Plenty of encouragement will help the subject do their best. Remember, the purpose of completing these measurements is to create a 'picture' of your fitness level. Laboratory exercises are not a chance for competition between classmates.

c. How accurate were your predictions? Use your fitness profile to set some realistic fitness goals.

on Resources

Video eLessons Lab tests for aerobic power (eles-0757)
Lab tests for muscular strength and power (eles-0758)
Lab tests for LME (eles-0759)
Lab tests for flexibility (eles-0760)
Lab tests for performance-related fitness (eles-0761)

9.6 Exercise

9.6 Exercise

Select your pathway

LEVEL 1	LEVEL 2	LEVEL 3
1, 2, 3, 4, 5, 6	7, 9	8, 10

These questions are even better in jacPLUS!

- Receive immediate feedback
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Check your understanding

1. MC Muscular strength is:
   - A. the ability to apply maximum force quickly.
   - B. the ability to apply maximum force against resistance.
   - C. the ability to move from A to B as quickly as possible.
   - D. the maximum amount of energy that can be produced using the aerobic energy system.
2. MC Muscular power is:
   - A. the ability to apply maximum force quickly.
   - B. the ability to apply maximum force against resistance.
   - C. the ability to move from A to B as quickly as possible.
   - D. the maximum amount of energy that can be produced using the aerobic energy system.
3. Flexibility is the range of movement around a joint. True or false?
4. MC Agility is:
   - A. strength and speed.
   - B. speed when changing direction.
   - C. the ability to move from A to B as quickly as possible.
   - D. the ability to remain stable.
5. MC Aerobic power is:
   - A. the ability to apply maximum force quickly.
   - B. the ability to apply maximum force against resistance.
   - C. the ability to move from A to B as quickly as possible.
   - D. the maximum amount of energy that can be produced using the aerobic energy system.

Apply your understanding

6. **Define** aerobic power, muscular strength, flexibility and local muscular endurance. **Name** a sporting event that relies heavily on each fitness component.
7. **Describe** the difference between muscular strength and power.
8. **Identify** and **justify** three fitness components that are important for a sport of your choice.
9. Aerobic power is the most important fitness component. **Justify** if you agree with this statement.
10. All athletes should maintain a good level of flexibility. **Identify** three reasons why flexibility is important for athletes.

LESSON
9.7 Training principles

LEARNING INTENTION

- Describe and apply the training principles.

9.7.1 Principles of training for sporting events and activities

The training principles are important for getting the most out of training.

These principles are as follows:

- frequency — how often you train
- intensity — how hard you train
- time (duration) — how long you train for
- type — the type of training you do
- specificity — the training activities that best suit your sport
- progression — how you can increase the difficulty of your training to get the best results.

If these principles are not applied correctly, you are less likely to achieve your training goals.

ENGAGE

In small groups, discuss the following questions:

- How would you train a rower for maximum results in aerobic power?
- How do you apply progression when training for aerobic power?
- A gymnast requires sustained muscular endurance. How would their training activities differ from those of the athletes discussed above?

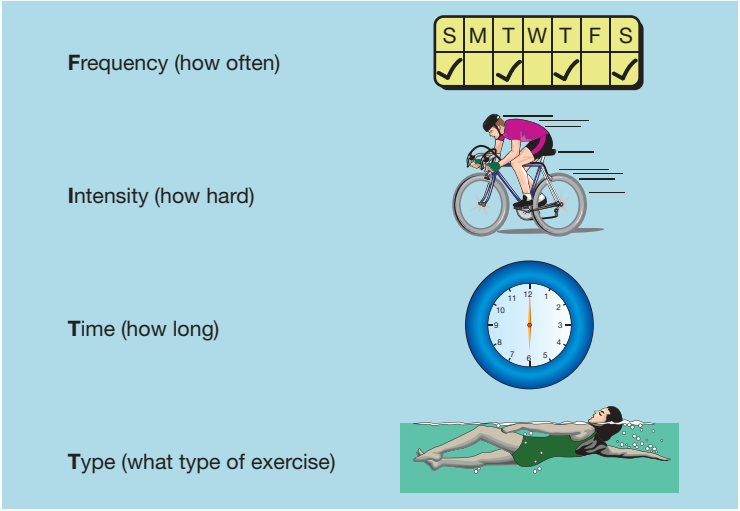
FIGURE 9.24 Craig Alexander needs high levels of aerobic power to complete iron man triathlons.

9.7.2 The FITT principle — frequency, intensity, time and type

The first four training principles can be grouped together into the FITT principle (see figure 9.25).

Whatever the sport, the FITT principle can be used to design an effective training plan, with specific targets set for each of its four elements.

FIGURE 9.25 The FITT principle



Frequency

Frequency relates to how often you engage in the program, or how many sessions per week you complete. The normal training frequency for improving aerobic power is three to four times a week. The normal frequency for improving anaerobic fitness, including strength and power, is three sessions a week, with rest days between sessions for recovery. To maintain aerobic power and anaerobic fitness, two sessions a week is generally enough.

frequency how often physical activity is undertaken

intensity measurements of intensity include what speed or heart rate (measured as a percentage of maximum heart rate) is achieved during activity

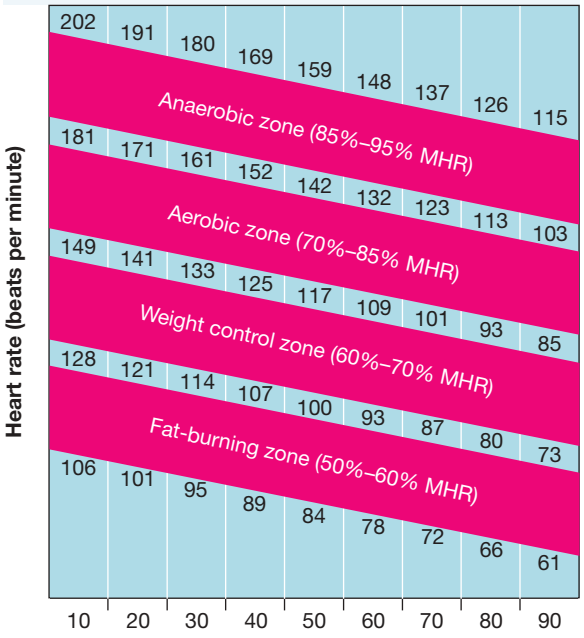
Intensity

Intensity is the exertion level at which the training is performed. In other words, it is how hard you are pushing yourself. As discussed in section 9.4.3, intensity is measured as a percentage of your maximum heart rate (MHR).

To create a fitness plan, there are three main body energy systems to keep in mind. Each system requires you to work at a different intensity level to target that system. For sessions that use weights (resistance), a percentage of 1RM (maximum weight that can be lifted for one repetition) is used. For example, to develop strength, a high weight (above 85% 1RM) is used, whereas to develop endurance, a lower weight is used (65% 1RM).

- Aerobic energy system (long-duration energy system) — 70–85 per cent MHR
- Anaerobic glycolysis system (moderate-duration energy system) — 85–95 per cent MHR
- ATP–CP (short-duration energy system) — 95–100 per cent MHR.

FIGURE 9.26 The various generic training zones according to age and heart rate



Time (duration)

Time is the length (in time) of each training session. Each session should require at least 20 minutes of work, with the heart rate at the correct level for the system being targeted. There is no set time for anaerobic sessions. However, it is important that the time applied to recovery between sets is enough to allow for maximum efforts during work phase (e.g. three-minute break).

Type

Type refers to what kind of exercise you should do to help improve your performance. To improve endurance, for example, you need to include aerobic exercises such as running in your program. To improve muscular strength, you need to include weight-training exercises.

type a key principle of training; refers to the kind of exercise performed

specificity training principle that ensures that activities performed within a training program are directly related to the sport or activity being trained. This includes energy systems, components of fitness, muscle groups and movement patterns.

9.7.3 Specificity

When selecting activities for a training program specific to your sport (known as **specificity**), there are two things to consider for the best results.

First, the energy demand of the main training activities must be specific to the energy demand of the sport. For example, if you were training for netball, which consists mainly of short, full sprints to the ball or away from your opponent, the training program should emphasise anaerobic (or sprint) activities. In this way, the energy demand of the training program matches the energy demand of a netball game.

Second, you need to identify the muscle groups used in the skills required in your sport and keep your training specific to these muscles. If the sport you are training for requires continuous contractions of the leg muscles, then this is the movement you should train.

FIGURE 9.27 Long jump requires a single explosive contraction of the leg muscles.

Sportsperson	Skill required	Training activities
Marathon runner	Continuous running	Aerobic training, leg strengthening
Long jumper	Single, explosive contraction of the leg muscles	Anaerobic training, weight training, jumping practice
Swimmer, breaststroke	Continuous swimming, powerful arm movements	Aerobic training, arm strengthening, weight training

DID YOU KNOW?

The minimum duration for aerobic improvement is six weeks, although it is more likely to be twelve weeks. For anaerobic improvement, including strength and power, six to eight weeks of training produces noticeable improvement.

9.7.4 Progression or progressive overload

The principle of **progression or progressive overload** is that your level of fitness can improve only if you exercise at an intensity greater than you can comfortably manage. To increase a muscle's strength, endurance and size, the muscle must be worked at an 'overload level'. To achieve this, you need to lift a greater weight than normally encountered, or complete more **repetitions** than usual.

progression or progressive overload training principle that requires the workload to be progressively increased at regular intervals; for example, by increasing the weight lifted, the number of repetitions, the distance run or the time over which the activity is performed

repetition also known as a rep; a single effort or performance of an exercise

When starting a training program for strength, the muscles being trained will quickly gain strength and be able to overcome the resistance of the starting weight more easily. Applying the progressive overload principle, the weight lifted by the muscles must continually increase as muscle strength increases.

To increase the ability of a muscle to contract continuously, the number of repetitions should be gradually increased as the exercise becomes comfortable or easy. This trains muscular endurance.

For the best progression, you should change only one aspect of training (weight or repetitions) at a time. The overload should be small, and weight or repetitions should only be increased when previous efforts become comfortable.

FIGURE 9.28 Former NRL player Nathan Merritt, training at the AIS. The weight lifted by the muscle must continually increase.

9.7 ACTIVITIES

1 Training for field games

a. As a class, play a game of hockey, netball and soccer.
b. Identify and justify the muscle groups and fitness components required in each sport.
c. Identify whether the most important fitness components are the same for each position on a team. If so, how? If not, why not?
For example, compare a goalkeeper and a midfielder in hockey and soccer and a goal shooter, centre and goal defence in netball.

2 Target heart rate

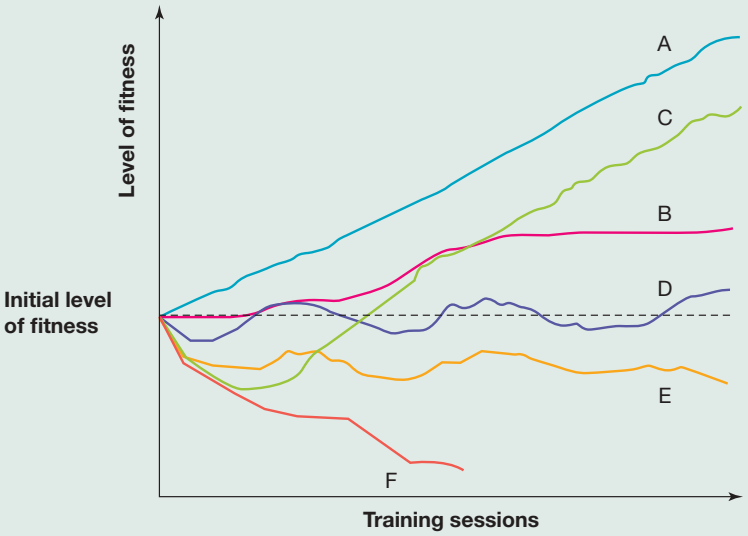
weblink

a. Use the **Target heart rate calculator** weblink in your Online Resources to calculate the target heart rate needed to develop your:
   i. aerobic energy system
   ii. anaerobic glycolysis system
   iii. ATP–CP energy system.
b. Next, wear a heart rate monitor or record your pulse. Conduct various activities that keep your heart rate in the required zone, including a continuous exercise and a team sport.
c. Discuss the following questions:
   i. How can maintaining these different target heart rates affect your health, wellbeing and fitness?
   ii. Did your heart rate differ between the continuous exercise and the team sport? Why do you think they were different?

3 Exercise heart rate

a. Jog, swim or skip for five minutes.
b. Measure your heart rate at the end of the second, fourth and fifth minutes. To do this efficiently, measure your heart rate for 20 seconds and then multiply by three. Alternatively, use a heart rate monitor for a more accurate reading.
c. Is your heart rate below, at or above the target heart rate? If it is below, you can work a little harder. However, do not raise your heart above 180 beats per minute for a long period.
d. Why are some people more easily able to reach this target heart rate?

4 Graph analysis



Examine the graph provided. It shows the fitness level of six athletes over a number of training sessions.
a. Describe the progress of each athlete during their training program.
b. Identify and justify which athletes are most likely to have correctly applied the fitness training principles.

9.7 Exercise

9.7 Exercise

Select your pathway

LEVEL 1	LEVEL 2	LEVEL 3
1, 2, 3, 4	6, 7, 8, 9	5, 10

These questions are even better in jacPLUS!

- Receive immediate feedback
- Access sample responses
- Track results and progress

Find all this and MORE in jacPLUS

Check your understanding

1. MC The training principle 'time' refers to:
   - A. how often one trains.
   - B. how hard one trains.
   - C. how long one trains.
   - D. what one trains (e.g. energy systems and muscle groups).
2. MC The training principle 'frequency' refers to:
   - A. how often one trains.
   - B. how hard one trains.
   - C. how long one trains.
   - D. what one trains (e.g. energy systems and muscle groups).
3. MC The training principle 'intensity' refers to:
   - A. how often one trains.
   - B. how hard one trains.
   - C. how long one trains.
   - D. what one trains (e.g. energy systems and muscle groups).
4. Improvement can only occur if you work outside your current physical capacity. True or false?
5. Specificity is the most important training principle for maximum benefits. True or false?

Apply your understanding

6. **State** and **explain** the five training principles.
7. List and **explain** three ways of putting the principle of progression into action when training for aerobic power.
8. **Outline** how the training principles could be applied to improve the aerobic power of a cyclist.
9. **Outline** how the training principles could be applied to improve upper body strength.
10. **Outline** how the training principles could be applied for improving aerobic and muscular power.

LESSON
9.8 Training methods

LEARNING INTENTION

- Describe and apply the different training methods.

9.8.1 Choosing appropriate training methods

Deciding on the training methods to include in your training program is the next step in increasing your fitness. It is important to understand each method when designing an appropriate and successful training program.

Training methods describe the different types of training that can be done to improve fitness. These methods include:

- resistance or weight training
- plyometric training
- circuit training
- interval training
- continuous training
- flexibility training.

ENGAGE

For training programs to be successful, they must be properly planned and correctly apply the training principles and methods so that the athlete achieves the best possible results.

Identify which fitness components are targeted by the training methods listed in 9.8.1.

FIGURE 9.29 Different methods of training are used to develop different fitness components.

9.8.2 The training methods

Resistance (weight) training

Resistance training (or weight training) aims to build strength, power or local muscular endurance (LME) by exercising muscles against resistance. The muscles contract to lift a dumbbell, barbell, the weight of the body or a body part.

Table 9.4 is a guide for weight training. In particular, note how the **repetition maximum (RM)**, repetitions and **sets** differ for the development of muscular strength, power and endurance.

resistance training a type of training that causes muscles to work against resistance from a body part or weight

repetition maximum (RM) the heaviest load that can be successfully completed in a given number of efforts or exercises

sets the number of repetitions in a sequence of exercises

TABLE 9.4 Weight-training guidelines for muscular strength, power and endurance

Variable	Muscular strength	Muscular power	Muscular endurance
Load	85–100% RM	30–70% RM	50–60% RM
Exercises	3–5	2–4	4–6
Repetitions	1–4	4–12	15–100
Sets	3–10	3–6	2–4
Rest and recovery	3–6 minutes	2–6 minutes	2 minutes
Speed of exercise	Slow to medium	Fast	Medium
Frequency	2–3 times a week	2–3 times a week	2–3 times a week

Plyometrics

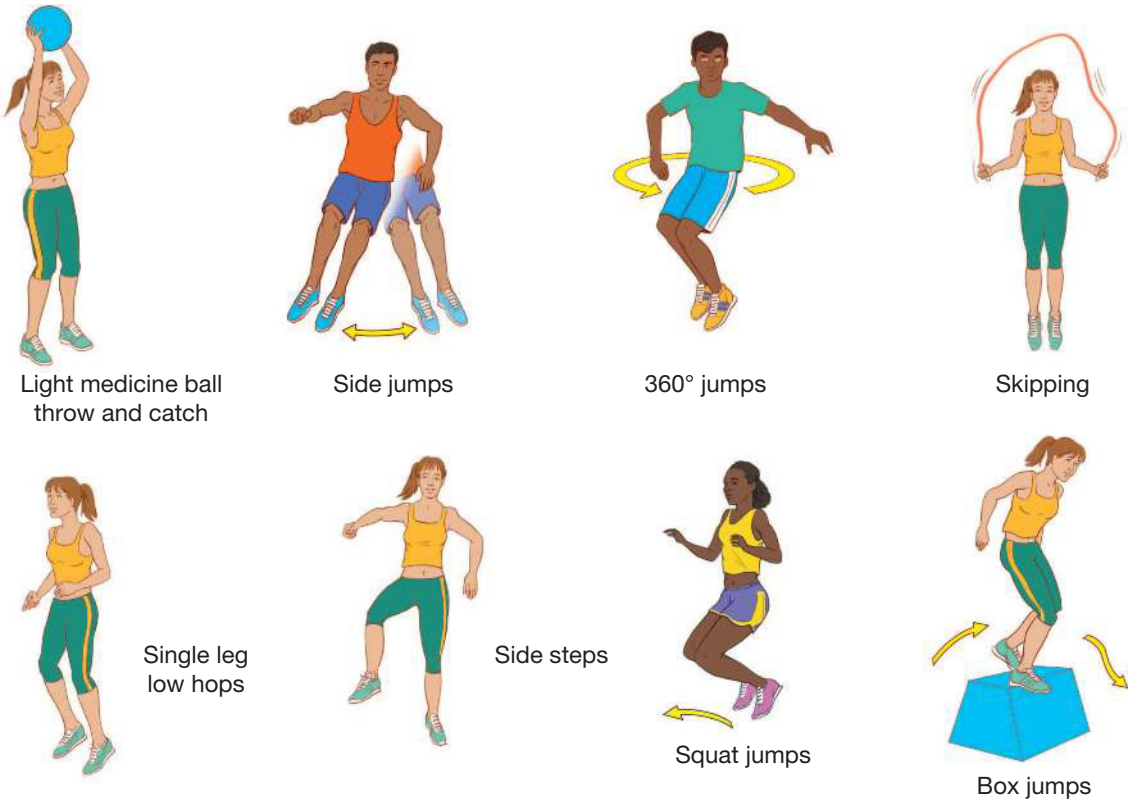
Plyometrics can also be used to develop power, especially in the legs. Activities such as bounding, hopping and depth jumping can be used. Plyometric training should be carried out only under supervision, as the strength and technique required to perform the activities can cause injury if not performed correctly.

weblink

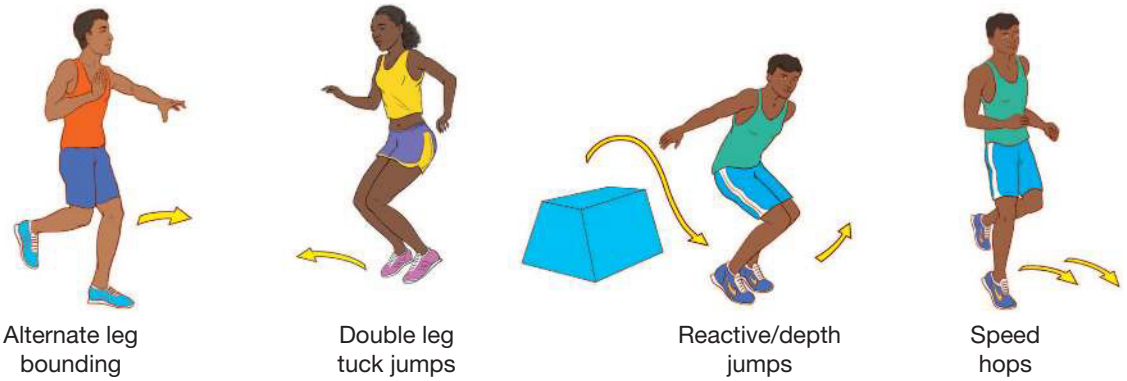
plyometrics used to train for power through activities such as bounding and depth jumping

Figure 9.30 Plyometric exercises

(a) Low-impact plyometric drills



(b) High-impact plyometric drills

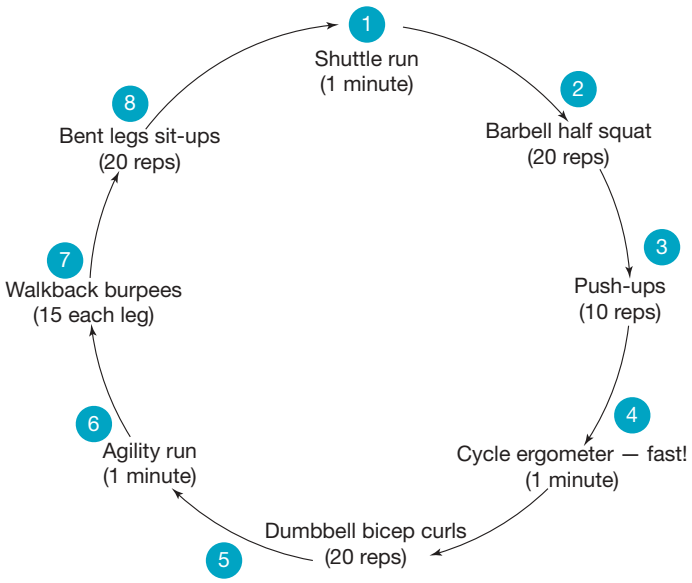


Circuit training

Circuit training can be used to develop many components of fitness. Circuits can be designed to include various activities and pieces of equipment specific to a particular sport or activity. See figure 9.30 for an example.

circuit training fitness training method involving a series of activity stations in sequence; designed to improve specific components of fitness

FIGURE 9.31 An example of an endurance circuit for general fitness and muscle toning. Work through the circuit from 1 to 8, then repeat.



Interval training

Interval training can be used to improve aerobic or anaerobic fitness. It involves periods of work broken up with periods of rest. To replenish the ATP–CP system (the short-duration energy system) and improve speed, you can use short periods of work with longer rest periods. This is called short interval training. For example:

interval training periods of work broken up with periods of rest; can be used to train the ATP–CP system or the anaerobic glycolysis system, depending on the intensity of the work period and the length of the rest period

- 60-metre sprint in approximately eight seconds
- 60-second rest and recovery period
- repeat eight times.

Note that this rest period would not allow full recovery of the ATP–CP system, but partial recovery is all that is needed to complete the eight repetitions. Table 9.5 can be used to help plan shorter interval training sessions.

TABLE 9.5 Planning for shorter interval training sessions

Duration of work period	Up to 10 seconds
Intensity of work	90–100% MHR
Duration of recovery period	1–2 minutes
Work/rest ratio	1:5 to 1:12
Repetitions	5–15 per set
Energy system used	ATP–CP system

To train the anaerobic glycolysis system and improve endurance, longer intervals can be used. For example:

- jog for 20 minutes
- rest for three minutes
- repeat five times.

Table 9.6 may help plan for longer interval sessions.

TABLE 9.6 Planning for longer interval training sessions

Duration of work period	0.5–5 minutes
Intensity of work	80–85% MHR
Duration of recovery period	0.5–5 minutes
Work/rest ratio	1:1 to 1:2
Repetitions	5–20 per set
Energy system used	• Anaerobic glycolysis system • Aerobic energy system

Continuous (aerobic) training

Aerobic training can be improved by carrying out continuous training. The main types of continuous training are:

- running and jogging
- cycling and swimming.

aerobic training exercise that lasts longer than five minutes without any rest

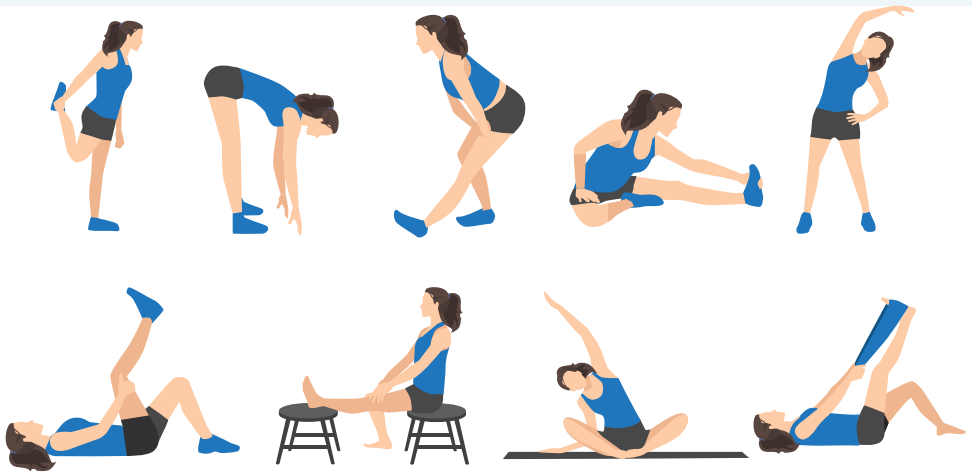
Continuous training should be carried out for a minimum of 20–30 minutes at an intensity of 70–85 per cent MHR, with a minimum of four training sessions per week.

Flexibility training

Flexibility training is an essential component in all active sports. It aims to improve the range of motion at the desired joints, which is important for maximum performance. There are four recognised methods of stretching:

- static stretching (passive) — holding a stretch
- dynamic stretching (active) — stretching while moving
- proprioceptive neuromuscular facilitation (PNF) stretching — stretching your leg up and have a partner (or band) gently push it towards you
- ballistic stretching — involves repeated movements such as swinging and bouncing to gain extra stretch. *(Note: it should be practised only by elite athletes, and with care.)*

FIGURE 9.32 Stretching helps to improve flexibility.



9.8.3 Structuring a training session

The most important part of the training program is the actual training sessions. All training sessions should include the following components:

- warm-up
- conditioning
- cool-down and stretching.

Warm-up

Before beginning any training session, a warm-up must be completed, including flexibility exercises. Warm-ups should be dynamic and include a series of movement drills or activities that build from low to moderate intensity. All body parts and joints that will be involved in the training, game or performance should be included in the warm-up. That is, the warm-up should be specific to the physical activity that will follow.

Some examples of specific warm-up activities for certain types of athletes include:

- AFL footballers need an emphasis on activities that take the groin and hamstring muscles through their full range of movement because of the fast, forceful kicking actions and sidestepping movements in a match.
- Gymnasts need activities that take the lower back through its full range of movement because many of their skills hyper-extend the spine.

Conditioning

The training session must focus on developing or maintaining the specific fitness components required for the athlete's sport or activity.

Cool-down

If you stop intense physical work too suddenly, you can become dizzy or faint. For this reason, every training session should have a cool-down period. This involves gradually decreasing the intensity of the physical activity. The session can then end with some static stretching.

Stretching

Static stretching during the cool-down helps increase flexibility and may reduce muscle stiffness and soreness. Stretching should involve all major parts of the body and specifically address key areas for your sport/activity as well as for you as an individual.

Static stretching stretches the muscle to a comfortable limit and holds it there for a minimum of 15–20 seconds. At least three repetitions of each static stretch should be done. There should be no bouncing in this method. Bouncing can take the extended joint beyond its safe limit and cause muscle soreness or tearing.

DID YOU KNOW?

There are three types of weight training:

- *isotonic weight training* — uses free weights such as barbells and dumbbells
- *isometric weight training* — involves holding the muscle in one position while it contracts against the resistance
- *isokinetic weight training* — done using machines such as Cybex or Hydra-Gym, which adjust the load as the body part moves through the range of motion.

on Resources

Interactivities Warm-up and cool-down (int-5497)
Which muscle? (int-5498)

9.8.4 Myths associated with fitness and training

Many myths surround fitness and training. The new research appearing regularly about fitness and training means that it is important to debunk the myths and use the correct information available to you.

- *No pain, no gain*. Research shows that there is no need for training to be painful. In fact, the statement should read 'if pain, no gain'. If pain is present during training, it is time to slow down. In some cases, if pain persists, seek medical advice.
- *Exercise increases appetite*. The reverse is often true. After exercising, especially in warm conditions, you often want to drink water rather than eat. Therefore, exercise reduces the desire for food.
- *I can 'spot-reduce' if I exercise one area*. Often, people believe that they can take off weight in a particular area. For example, they might think that doing sit-ups will remove weight around the stomach area. Weight loss is achieved only through a balanced diet and exercise program. Spot reduction isn't real.
- *Women who train with weights become muscle bound*. Training with weights may increase strength. However, females are unlikely to 'bulk up' as much as males. This is because they lack testosterone, which is important for muscle growth.
- *Exercise is costly, time consuming, hard and only for people who are already fit*. Exercise can cost nothing (e.g. walking). No special shoes or clothing are required. Using your own body weight instead of weights also reduces the cost of exercising. People who aren't fit need to exercise, as the health, wellbeing and fitness benefits can help with their everyday lives. By varying the kind of exercise you undertake and fitting it in with your daily routine and interests, you are less likely to find the activity unpleasant.
- *It worked for them; it'll work for me*. We need to individualise programs because everyone has different needs and goals. Health screening and fitness testing must be used to assess the individual's strengths and weaknesses.
- *Weight can be lost without effort*. Many businesses have tried to convince people that their machines will reduce weight without effort. Unfortunately, there is no magic way of reducing your weight. You have to reduce the amount of kilojoules you consume by eating a healthy diet, and increase the amount of energy you use by exercising. This exercise must be above resting levels for the body to burn more energy than it takes in.
- *By not drinking, I can lose weight*. Replacing the fluid you lose during and after exercise is extremely important. If the fluid balance isn't maintained, you can become dehydrated. Even moderate fluid loss, probably unnoticed by many athletes, affects performance levels, especially in hot conditions. During intense exercise in warm environments, an athlete can lose one or two litres of fluid per hour. You can work out how much fluid you need to drink after exercise by weighing yourself before exercise and then immediately after exercise. The amount of weight you have lost during exercise is fluid that needs to be replaced. For example, if you lose two kilograms in weight during exercise, you need to drink two litres of fluid to maintain your fluid balance. Drinking small amounts during exercise is also important. It is recommended that you drink regularly rather than when you become thirsty. You will probably find 150–200 millilitres to be a comfortable amount. Water is a suitable drink for sessions of less than an hour. For longer sessions or events, sports drinks and cordials may also be used.

9.8 ACTIVITIES

1 Resistance training

doc-14725

a. Design and try a resistance training program for yourself. It should include the relevant training principles.
b. Use the **Workout card** worksheet in your Online Resources to monitor your progress.
c. Justify your choice of activities by identifying the fitness components you are trying to improve.

2 My circuit

a. Design a practical circuit training program for a sport or activity of your choice.
b. Trial your circuit.
c. At the end of the session, record your performance on the circuit and how you felt when you finished. Use the **My circuit** worksheet in your Online Resources to help you.

doc-14724

d. Justify your choice of physical activities.

3 Sprint training program

a. The following sprint training program has been designed for a cricket batter who needs to run between the wickets. Fill in the blanks with the appropriate values.

Work time	Intensity	Reps	Sets	Rest period	Work-to-rest ratio	Frequency per week
5 seconds	95% MHR		3		1:5	3

b. Explain how changing some of the values in the table would change the energy system being trained.

4 My family circuit

a. Create a fitness circuit for your family. Use equipment found at your house, such as chairs, steps, garden beds and cans.
b. Record a clip of your family completing the circuit.
c. Show and discuss the family circuit clip with your class.
d. Justify your choice of physical activities by identifying the components of fitness you are trying to improve.

9.8 Exercise

9.8 Exercise

Select your pathway

LEVEL 1	LEVEL 2	LEVEL 3
1, 3, 4, 7	2, 5, 6, 8	9, 10

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Check your understanding

1. MC To improve muscular strength, the best training method would be:
   A. continuous.
   B. plyometrics.
   C. flexibility.
   D. resistance.
2. MC To improve muscular power, the best training method would be:
   A. continuous.
   B. plyometrics.
   C. flexibility.
   D. resistance.

3. MC To improve aerobic power, the best training method would be:
   A. continuous.
   B. plyometrics.
   C. flexibility.
   D. resistance.
4. MC To improve speed, the best training method would be:
   A. interval.
   B. plyometrics.
   C. flexibility.
   D. resistance.
5. MC To improve muscular endurance, the best training method would be:
   A. circuit.
   B. plyometrics.
   C. flexibility.
   D. continuous.

Apply your understanding

6. For each of the following training methods, **describe** how the principle of progressive overload could be applied.
   a. Circuit training program
   b. Interval training program
   c. Continuous training program
7. **Explain** three ways in which endurance training differs from strength training.
8. **Identify** examples of the training methods used in both endurance training and strength training.
9. **Discuss** why plyometric training should be carried out only under supervision.
10. To train aerobic power, continuous, interval and circuit training can be used. **Compare** these methods.

LESSON
9.9 Training programs

LEARNING INTENTION

- Evaluate fitness and plan appropriate physical activity plans.

9.9.1 Scenario

You are a personal trainer and have been approached by a number of different clients. These individuals want programs developed for their specific requirements. You need to encourage the individuals to follow the training programs you will create to make the greatest improvement.

9.9.2 Your task

Develop a training program for each individual. You may wish to use online resources and digital tools or devices (e.g. health apps, a smart watch). The training programs must follow the training principles of frequency, intensity, time (duration), type, specificity and progressive overload. It is important that you develop a specific training program for each individual for maximum benefit.

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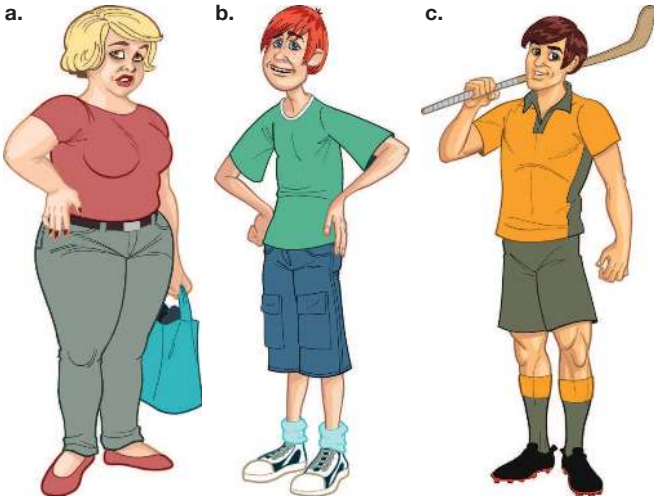
doc-37994

- Individual A wants a program developed to improve her aerobic power.
- Individual B wants a program developed to improve his upper body strength.
- Individual C wants a program developed to improve his speed on the hockey field. Use the **Training plans** templates in your Online Resources to help you.

FIGURE 9.33 Individuals A, B and C



doc-37995 Complete your self-assessment using the **Assessment rubric** document or access exercise set 9.9 to complete it online.

on Resources

Video eLessons
- Abdominal exercises (eles-0779)
- Biceps brachii exercises (eles-0771)
- Calf exercises (eles-0783)
- Deltoid exercises (eles-0773)
- Gluteus maximus exercises (eles-0780)
- Hamstring exercises (eles-0782)
- Inner and outer thigh exercises (eles-0778)
- Latissimus dorsi exercises (eles-0775)
- Lower back and waist exercises (eles-0777)
- Pectoralis major exercises (eles-0774)
- Quadriceps exercises (eles-0781)
- Rhomboid exercises (eles-0776)
- Trapezius exercises (eles-0772)
- Triceps brachii exercises (eles-0770)

LESSON
9.10 Review

Hey students! Now that it's time to revise this topic, go online to:

Review your results

Watch teacher-led videos

Practise questions with immediate feedback

Find all this and MORE in jacPLUS

9.10.1 What have I learned?

- Health, wellbeing and fitness are your most valuable personal assets. They have a large influence on your quality of life.
- Being physically active has a positive impact on all dimensions of health and wellbeing.
- Physical fitness is the ability to complete your daily activities without becoming exhausted and still having enough energy left to cope with emergencies.
- Australia's physical activity and exercise guidelines recognise the importance of physical activity for good health. Guidelines differ for children, adults and older adults.
- Physical fitness includes the fitness components of aerobic power, muscular strength and power, muscular endurance, flexibility and body composition, speed, agility, balance, coordination and reaction time.
- Improving your physical fitness levels has many benefits. For example, it reduces your risk of developing cardiovascular disease, and promotes a positive self-concept and self-esteem.
- There are a wide range of fitness tests available. These can be used to assess each of the components of fitness, help you determine your current level of fitness or fitness profile, and help you select the correct training principles and methods.
- Physical fitness can be improved by using an appropriate training program.
- The principles of frequency, intensity, time, type, specificity and progression are used when designing a training program.
- Training sessions must include appropriate warm-up and cool-down routines, as well as the correct exercise techniques.
- There are many myths related to fitness and training, including ideas about appetite, diet, changes to body shape and size, and the cost of exercise.

ESSENTIAL QUESTION REVIEWED

- Why is it important for all individuals to be involved in regular physical activity?
- How can this contribute to health and wellbeing at different stages of life?

Evaluate your initial response to the essential question, now that you have studied the topic.

on Resources

Interactivity Crossword (int-9004)

9.10.2 Key terms

aerobic power the body's ability to continue exercising over long periods using the large muscles of the body. It is also known as aerobic fitness or aerobic stamina/endurance
aerobic training exercise that lasts longer than five minutes without any rest
aerobic training zone a level of intensity that causes the heart rate to be high enough to cause training gains, usually between 70 and 85 per cent of its maximum rate.
agility the ability to start, stop and change direction rapidly at maximum speed, without losing balance
balance the ability to remain stable, whether static (still) or dynamic (moving)
body composition describing body shape or type
circuit training fitness training method involving a series of activity stations in sequence; designed to improve specific components of fitness
coordination motor skills component of fitness involving control of movement, such as hand–eye coordination
fitness physical capacity to do various physical activities, measured by testing a range of components
flexibility the range of motion of specific joints and the muscles that act on them; may be static or dynamic
frequency how often physical activity is undertaken
intensity measurements of intensity include what speed or heart rate (measured as a percentage of maximum heart rate) is achieved during activity
interval training periods of work broken up with periods of rest; can be used to train the ATP–CP system or the anaerobic glycolysis system, depending on the intensity of the work period and the length of the rest period
maximum heart rate (MHR) approximated by subtracting your age from 220. For example, a 15-year-old would have an MHR of 220 – 15 = 205.
mental health relates to emotions, thoughts and behaviours. It involves the functioning of the mind and ability to cope with daily stresses and decision-making.
moderate intensity sub-maximum exercise that increases heart rate and breathing rate somewhat above resting levels
muscular endurance ability of a muscle or muscle group to sustain or repeat a force over a long period
muscular power a combination of speed and strength. When strength is exerted quickly, it is called power.
muscular strength exertion of a single maximum force by a muscle or muscle group
objective methods rely on data or observations
pedometer device that measures the number of steps taken during the day and estimates the distance covered in kilometres
physical health physiological functioning of the body
plyometrics used to train for power through activities such as bounding and depth jumping
progression or progressive overload training principle that requires the workload to be progressively increased at regular intervals; for example, by increasing the weight lifted, the number of repetitions, the distance run or the time over which the activity is performed
reaction time time taken to respond to, or initiate movement after, a given signal or cue; for example, a starter's gun
repetition also known as a rep; a single effort or performance of an exercise
repetition maximum (RM) the heaviest load that can be successfully completed in a given number of efforts or exercises
resilience the ability to recover quickly from difficulties; to be able to 'bounce back' from challenges
resistance training a type of training that causes muscles to work against resistance from a body part or weight
self-efficacy a person's belief in their ability to be successful across a range of challenging situations
sets the number of repetitions in a sequence of exercises
SMART goal goals that are specific, measurable, achievable, realistic and timely
social health ability to develop and maintain positive relationships with others, including family, friends, peers and colleagues
specificity training principle that ensures that activities performed within a training program are directly related to the sport or activity being trained. This includes energy systems, components of fitness, muscle groups and movement patterns.
speed can refer to whole-body speed, where the aim is to move from point A to point B as quickly as possible, or part-body speed, where one or more parts of the body move as quickly as possible to complete a movement
spiritual health encompasses our beliefs, values, morals and ambitions
subjective methods rely on own perceptions

target heart rate percentage of maximum heart rate an athlete must work at to improve fitness. This is 50–70 per cent of maximum heart rate for moderate intensity activity and 70–85 per cent for vigorous intensity activity.
type a key principle of training; refers to the kind of exercise performed
vigorous intensity high-intensity activity, such as running and playing sport, which raises heart rate and breathing rate significantly

9.10 Exercise

9.10 Exercise

Select your pathway

LEVEL 1	LEVEL 2	LEVEL 3
1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12	13, 14, 15, 16	17, 18, 19, 20

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Check your understanding

Identify whether the following statements are true or false.

Statement	True or False
1. Health is dynamic in nature.	
2. The *Australian Health Survey: Physical Activity, 2021–22* found that young people aged 15–17 years spent an average of five hours per day engaged in physical activity.	
3. Self-report is an objective measure for assessing physical activity.	
4. Maximum heart rate changes with age.	
5. The ability to change direction with speed and balance is called agility.	
6. The 20-metre shuttle run fitness test is suitable for measuring an individual's aerobic power.	
7. The training principle of 'frequency' refers to how long you do physical activity for.	
8. Plyometrics can be used to develop flexibility.	
9. Doing sit-ups will remove weight around the stomach area.	
10. An athlete should complete three to six sets during a training session for muscular power.	

Apply your understanding

11. **Explain** why your health and fitness are valuable.
12. List and **explain** the benefits of a regular physical activity program.
13. **Outline** the subjective and objective methods that can be used to assess physical activity.
14. **State** suitable fitness tests for each fitness component.
15. To gain the greatest benefits from a fitness training program, we must correctly apply the key principles of training. **Explain** what this means.
16. **Identify** how you would design a weight-training program that focuses on muscular endurance.
17. **Outline** how SMART goals can be used to increase the physical activity of a peer.
18. **Evaluate** a peer's physical activity and fitness levels. **Suggest** some SMART goals to help them to improve.
19. If someone tested below average on the vertical jump test, **outline** a training session that could help them to improve.
20. Using a sport of your choice, **identify** and **justify** which fitness components, fitness tests and training methods should be used when training for that sport. Design a sample training session using the specific training method.

Online Resources

on Resources

Below is a full list of **rich resources** available online for this topic. These resources are designed to bring ideas to life, to promote deep and lasting learning and to support the different learning needs of each individual.

Topic PDF

- 9.1 Physical activity plans for fitness, health and wellbeing (tpdf-3597) ☐

Digital documents

- 9.4 Self-report (doc-14719) ☐
- 9.6 Fitness profile (doc-14721) ☐
- 9.8 Workout card (doc-14725) ☐
- My circuit (doc-14724) ☐
- 9.9 Training plans A (doc-37991) ☐
- Training plans B (doc-37992) ☐
- Training plans C (doc-37993) ☐
- Training plans D (doc-37994) ☐
- Assessment rubric (doc-37995) ☐

Video eLessons

- 9.1 To come (eles-6106) ☐
- 9.6 Lab tests for aerobic power (eles-0757) ☐
- Lab tests for muscular strength and power (eles-0758) ☐
- Lab tests for LME (eles-0759) ☐
- Lab tests for flexibility (eles-0760) ☐
- Lab tests for performance-related fitness (eles-0761) ☐
- 9.9 Abdominal exercises (eles-0779) ☐
- Biceps brachii exercises (eles-0771) ☐
- Calf exercises (eles-0783) ☐
- Deltoid exercises (eles-0773) ☐
- Gluteus maximus exercises (eles-0780) ☐
- Hamstring exercises (eles-0782) ☐
- Inner and outer thigh exercises (eles-0778) ☐
- Latissimus dorsi exercises (eles-0775) ☐
- Lower back and waist exercises (eles-0777) ☐
- Pectoralis major exercises (eles-0774) ☐
- Quadriceps exercises (eles-0781) ☐
- Rhomboid exercises (eles-0776) ☐
- Trapezius exercises (eles-0772) ☐
- Triceps brachii exercises (eles-0770) ☐

Interactivities

- 9.6 Components of fitness (int-6411) ☐
- 9.8 Warm-up and cool-down (int-5497) ☐
- Which muscle? (int-5498) ☐
- 9.10 Crossword (int-9004) ☐

Solutions

- 9.10 Answers: topic 9 ☐

Weblinks

- 9.2 Creating word art ☐
- 9.7 Target heart rate calculator ☐
- 9.8 Developing power with plyometrics ☐

Teacher resources

There are many resources available exclusively for teachers online.

To access these online resources, log on to **www.jacplus.com.au**.

10 Understanding how the body moves

LESSON SEQUENCE

online only

10.1 Overview
10.2 Systems of the body
10.3 The skeletal system
10.4 The muscular system
10.5 The cardiovascular system
10.6 The respiratory system
10.7 Review

FIGURE 10.1 Playing sport, having fun with friends and other everyday activities rely on your bones, muscles, joints, heart and lungs all working together.

LESSON
10.1 Overview

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Engage with interactivities

Answer questions and check results

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10.1.1 The components of your body

Every time you run along the beach with your friends, or score against your opponents during a game of football, you're using your bones, muscles, joints, heart and lungs. Without these components of the body, you would be unable to sit, stand, walk or do any of the activities you do every day.

ESSENTIAL QUESTION

How do the body systems work together to produce movement?

STARTER QUESTIONS

1. What is our body made of?
2. What major structures in the body work together to produce movement?
3. How do we get oxygen to our muscles to create movement?
4. Why can some people move more efficiently and faster than others?
5. How can we make ourselves run faster or jump higher?

Note to teachers and students: The material presented in this topic, while not directly linked to the Australian curriculum content descriptors or elaborations for Health and Physical Education, is considered very important by the authors of this text. Knowledge of the body systems is vital to enable students to make the link between physical fitness and:

- components of fitness
- energy systems
- training for fitness.

This information then helps form a foundation of energy system knowledge for senior studies in Physical Education.

on Resources

Video eLesson Understanding the systems of the body (eles-6107)

LESSON
10.2 Systems of the body

LEARNING INTENTION

- Describe the major systems of the body.

10.2.1 The anatomy of the human body

Some body systems play a larger role in the production of human movement than others. However, all systems work together to allow us to enjoy physical activity. This topic focuses on developing knowledge and understanding about how our body moves. This includes what is happening on the inside to create and sustain movement for everyday life as well as for sporting and recreational activities.

ENGAGE

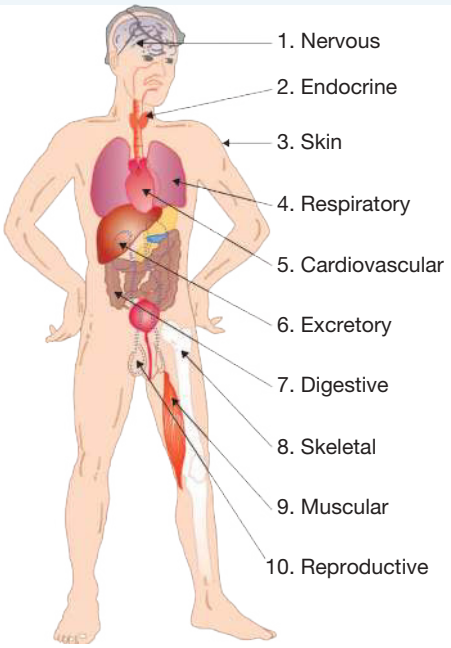
To understand how the body moves, it is important to gain an in-depth knowledge of the anatomy of the human body and how it works. How many body systems do you know?

The human body has 10 distinct systems:

- *Nervous system*. Controls all other systems, sends messages to muscles
- *Endocrine system*. Energy release for work and growth, adrenalin production
- *Skin*. Protection from disease, transfer of body heat
- *Respiratory system*. Oxygen intake and carbon dioxide removal
- *Cardiovascular system*. Transport of materials to and from all body cells
- *Excretory system*. Excretion of waste products
- *Digestive system*. Provides nutrients for energy production
- *Skeletal system*. Enables movement, provides shape, protects vital organs
- *Muscular system*. Creates movement by pulling on bones, aids in digestion and breathing
- *Reproductive system*. Reproduction, propagation of the species.

int-6337

FIGURE 10.2 The systems of the body do not work independently; they function as a whole. Physical, mental and emotional health depend on all systems of the body being in balance.



10.2.2 Physical activity and body systems

Four body systems are seen as having the greatest responsibility for physical activity:

- the skeletal system
- the muscular system
- the cardiovascular system
- the respiratory system.

These systems are covered in detail over the next four lessons.

These body systems work together to create movement. They gather and transport oxygen and other nutrients to sustain movement, and assist in the removal of waste products from the body. For example:

- bones form the framework of our body and provide the levers for movement
- muscles pull on the levers across joints
- joints allow the framework to bend, allowing movement
- the heart and blood vessels bring nutrients to the muscles so that they have energy for movement
- respiration provides oxygen for energy production
- skin helps to cool the body during exercise.

In each lesson, you will learn about the system's anatomy, function and special features, and the effects of exercise on the system.

DISCUSS

In 2021, 624 organ donors helped to save 1377 Australians.

a. What factors would influence someone's decision to be an organ donor?
b. What are some reasons why people may be hesitant to donate their organs?
c. Are some organs easier to donate than others? Why?
d. Currently, the law is that you must indicate your wish to be a donor for your organs to be donated. Some people argue that it should be law for everyone to donate organs, unless they indicate otherwise. Which law is in the best interests of the Australian community? Why?

10.2 ACTIVITY

System report

weblink

a. Individually, or with a partner, choose one of the human body's 10 distinct systems from the list in the Engage section.
b. Use the **KidsHealth** weblink in your Online Resources to investigate the role that particular system plays within the body (select Body Basics Library). Then present your research to the rest of the class.
c. You can complete the **Ten systems of the human body** interactivity, available in your Online Resources, before you start to help your research.

Include the following in your report:

i. Identify where the body system is located within the human body. Draw/insert a labelled diagram.
ii. State what other systems of the human body it connects to.
iii. Outline the function of the system.
iv. Describe the common illnesses or diseases of that system. Identify how they are treated and the estimated recovery time.
v. Identify if the human body can function without part or the whole of this system.

10.2 Exercise

10.2 Exercise

Select your pathway

LEVEL 1	LEVEL 2	LEVEL 3
1, 2, 3, 4	5	6

These questions are even better in jacPLUS!

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Check your understanding

1. MC The skin is:
   - A. a body system with a main role in controlling other systems.
   - B. a body system with a main role in protecting against disease.
   - C. not a body system, but it does help protect against disease.
   - D. not a body system, but it does help control other systems.
2. The main role of the respiratory system is oxygen intake and carbon dioxide removal. True or false?
3. Fill in the blanks to describe the role of the muscular system in movement.
   The muscular system creates _____ by pulling on _____ and aids in digestion and _____.
4. Body systems all work independently to create movement. True or false?

Apply your understanding

5. **Identify** two of the body's systems that work together to create movement.
6. **Describe** how two or more of the human body's systems work together to create movement. Give two different examples.

LESSON
10.3 The skeletal system

LEARNING INTENTION

- Describe the functions of the skeletal system and identify the role of bones and joints.

10.3.1 A framework for the body

The skeletal system provides a framework for the body, allows movement and protects vital organs.

ENGAGE

Have you ever broken a bone in your body or know someone who has? Do you know the name of the bone that was broken?

What would your body look like without your internal skeleton holding you up? What other functions are there for our bones besides giving us shape?

doc-14701 Use the **Name that bone** worksheet in your Online Resources to explore the common and anatomical names of the bones in our bodies. In pairs, use sticky labels to identify as many bones on your partner's body as you can.

FIGURE 10.3 The importance of bones becomes clear when we break one.

10.3.2 Functions of the skeletal system

The skeletal system has five main functions.

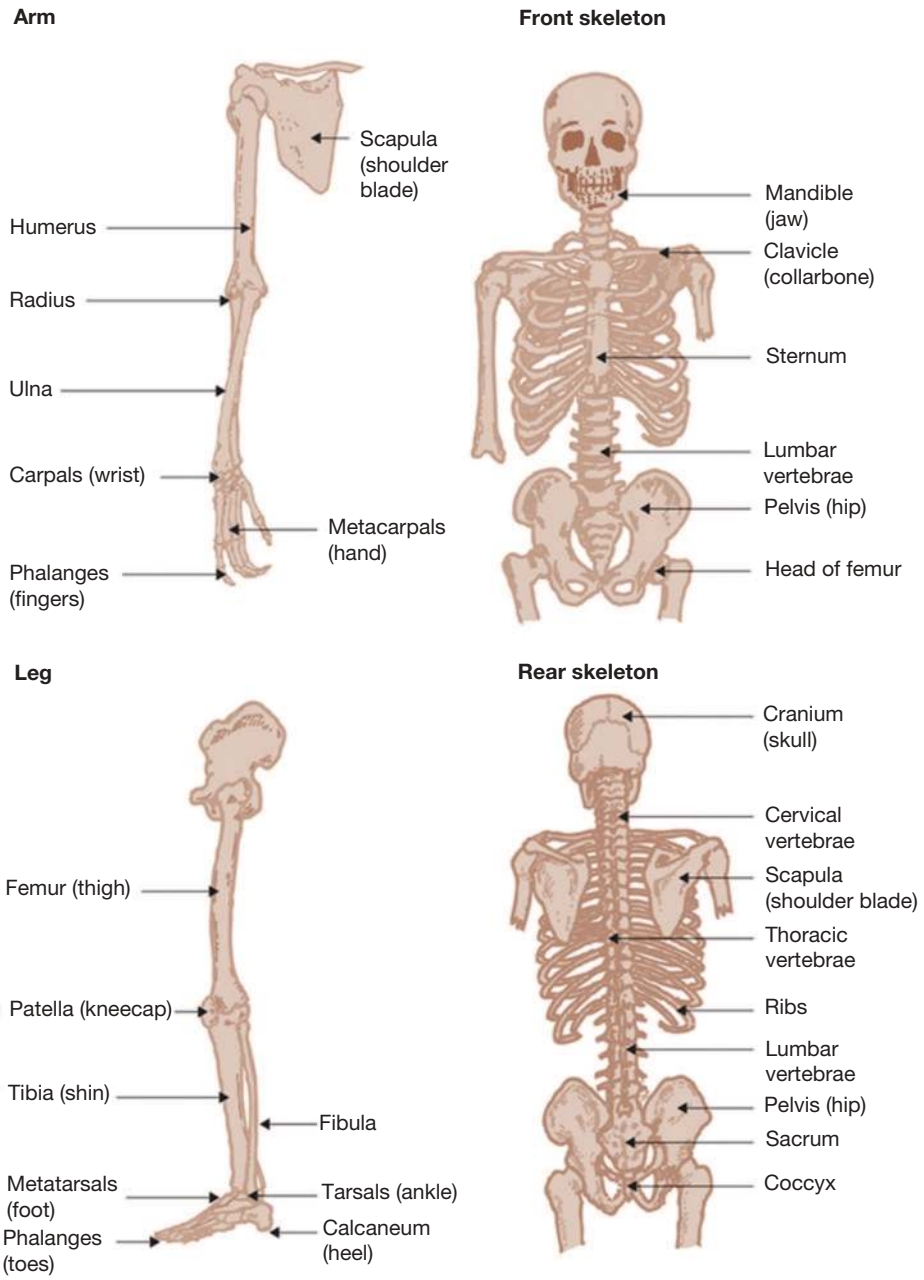
- It gives the framework to which the soft tissues attach, and gives the body its shape.
- It helps with movement. The bones are the levers upon which our muscles pull.
- It protects vital organs; for example, the skull protects the brain, and the ribs protect the heart and lungs.
- It is the site of blood cell formation. The long bones contain bone marrow, which produces all of our red blood cells and some white blood cells.
- It stores mineral salts, especially **calcium**. Degradation of bones and joints can lead to diseases and abnormalities such as **osteoarthritis** and **osteoporosis**.

calcium mineral nutrient required for bone growth and prevention of osteoporosis

osteoarthritis joint cartilage degenerates and causes pain

osteoporosis calcium deposits in the bone diminish, causing a decrease in bone density, increased risk of fracture and curvature of the spine

FIGURE 10.4 The bones of the skeletal system



10.3.3 Bone: What is it?

Bone is approximately 50 per cent water and 50 per cent solid matter (consisting mostly of calcium and phosphate). Bones are living structures, capable of growth, adaptation and repair. Our bones grow in length until the age of 13–15 years for girls and 16–18 years for boys. Some bones have a hollow centre containing bone marrow, which produces blood cells.

DID YOU KNOW?

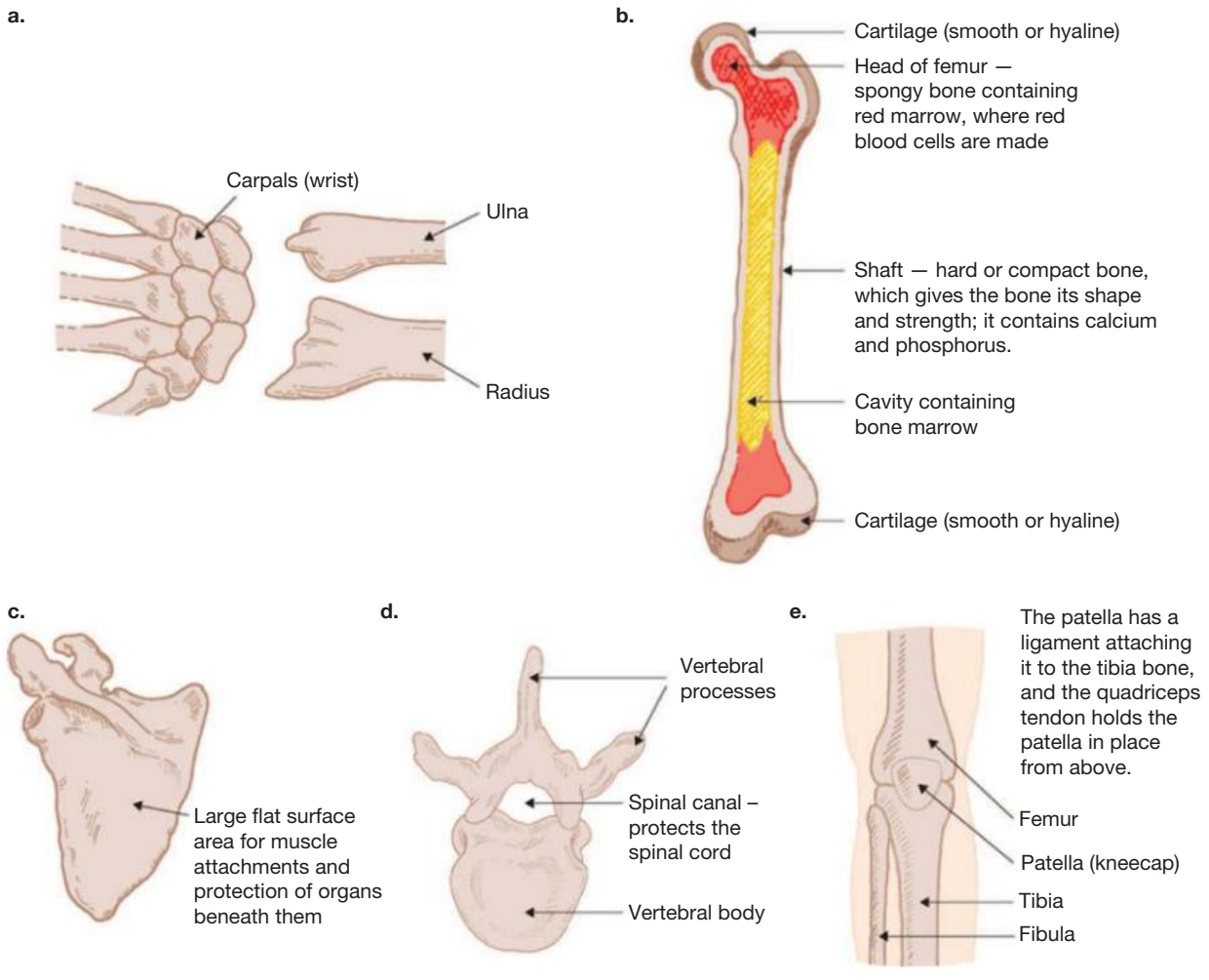
The largest bone is the pelvis, or hip bone. The longest bone is the femur; it makes up almost one quarter of the body's total height. The smallest bone is the stirrup, which is found deep in the ear. It is roughly the size of a grain of rice.

Types of bone

There are five types of bone, distinguished by their shape:

- *Short bones*, shown in figure 10.5a. They are roughly cubical; that is, they have the same width and length (e.g. the carpal bones of the wrist and the tarsal bones of the foot).
- *Long bones*, shown in figure 10.5b. They are longer than they are wide and have a hollow shaft containing marrow (e.g. the femur, phalanges and humerus).
- *Flat bones*, shown in figure 10.5c. They provide flat areas for attachment of muscles and usually enclose cavities to protect organs (e.g. the scapula, ribs, sternum and skull).
- *Irregular bones*, shown in figure 10.5d, have no regular shape characteristics (e.g. the vertebrae and bones of the face).
- *Sesamoid bones*, shown in figure 10.5e. They are small bones developed in tendons around some joints (e.g. the patella at the knee joint).

FIGURE 10.5 a. Short bones — the carpal bones in the wrist **b.** A long bone — the femur **c.** A flat bone — the scapula **d.** An irregular bone — a vertebra **e.** A sesamoid bone — the patella



on Resources

Interactivity Types of bones (int-6728)

10.3.4 The vertebral column

Some special features of the spine (or vertebral column) are listed below.

- Each vertebra has a hollow centre through which the spinal cord travels. In this way, the cord is protected.
- As the vertebrae descend from the cervical to the lumbar region, they increase in size. This helps them to support the weight of the upper body.
- Movement between two vertebrae is very limited. But the range of movement of the vertebral column as a whole unit is great, allowing bending, twisting and rotation. Use the **Vertebral column** worksheet in your Online Resources to label the sections of the vertebral column.

doc-14723

10.3.5 Joints

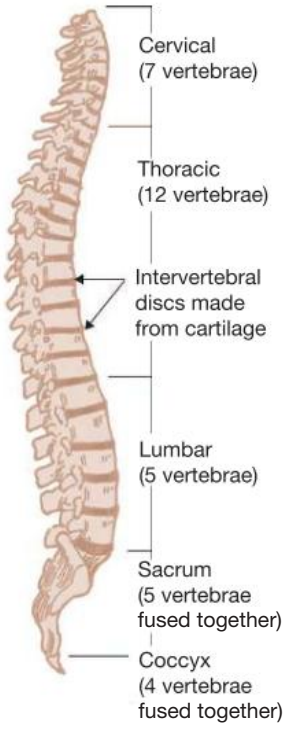
Joints occur when two or more bones meet or join together. There are three types of joints:

- *Immoveable fibrous joints*. Bones are fixed or fused together and no movement is possible; for example, the skull, pelvis, sacrum and sternum.
- *Slightly moveable (cartilaginous) joints*. Bones are joined by cartilage and only a small amount of movement is possible; for example, where the ribs join the sternum, the vertebrae of the spine (figure 10.6).
- *Freely moveable (synovial) joints*. Allow free movement in at least one direction. They have cartilage, ligaments and a lubricating fluid (called **synovial fluid**), and are the joints that allow us to move and exercise (see figure 10.7). Most of our joints are **synovial joints**; for example, the knee, elbow, ankle, hip, shoulder, fingers, wrist and toes.

synovial fluid lubricating substance found in synovial joints

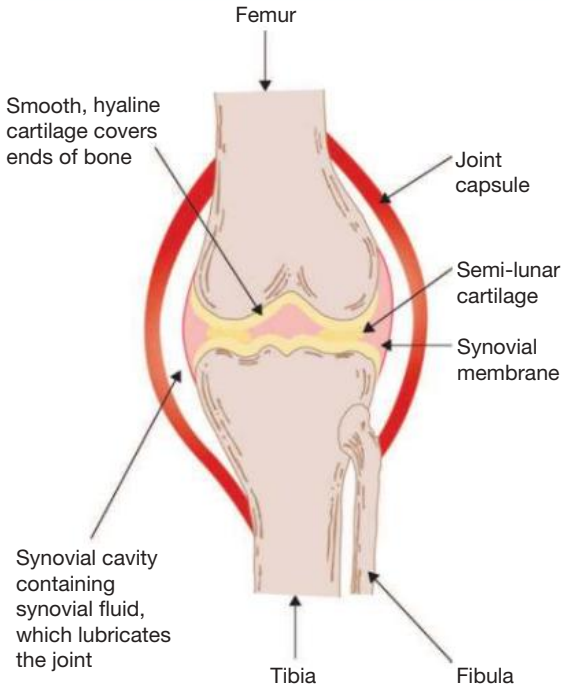
synovial joints freely movable joints that have cartilage, ligaments and synovial fluid; for example, the knee or elbow

FIGURE 10.6 Side-on view of the vertebral column. Notice how the vertebrae increase in size as they descend from the cervical spinal region to the lumbar.



Total of 34 vertebrae

FIGURE 10.7 The knee joint is a freely movable (synovial) joint. The synovial fluid and cartilage provide lubrication and ease of movement.



DID YOU KNOW?

A baby has over 300 bones, but an adult has roughly 206 bones. This is because some of our bones, such as those of the skull and pelvis, fuse together to form one bone as we grow.

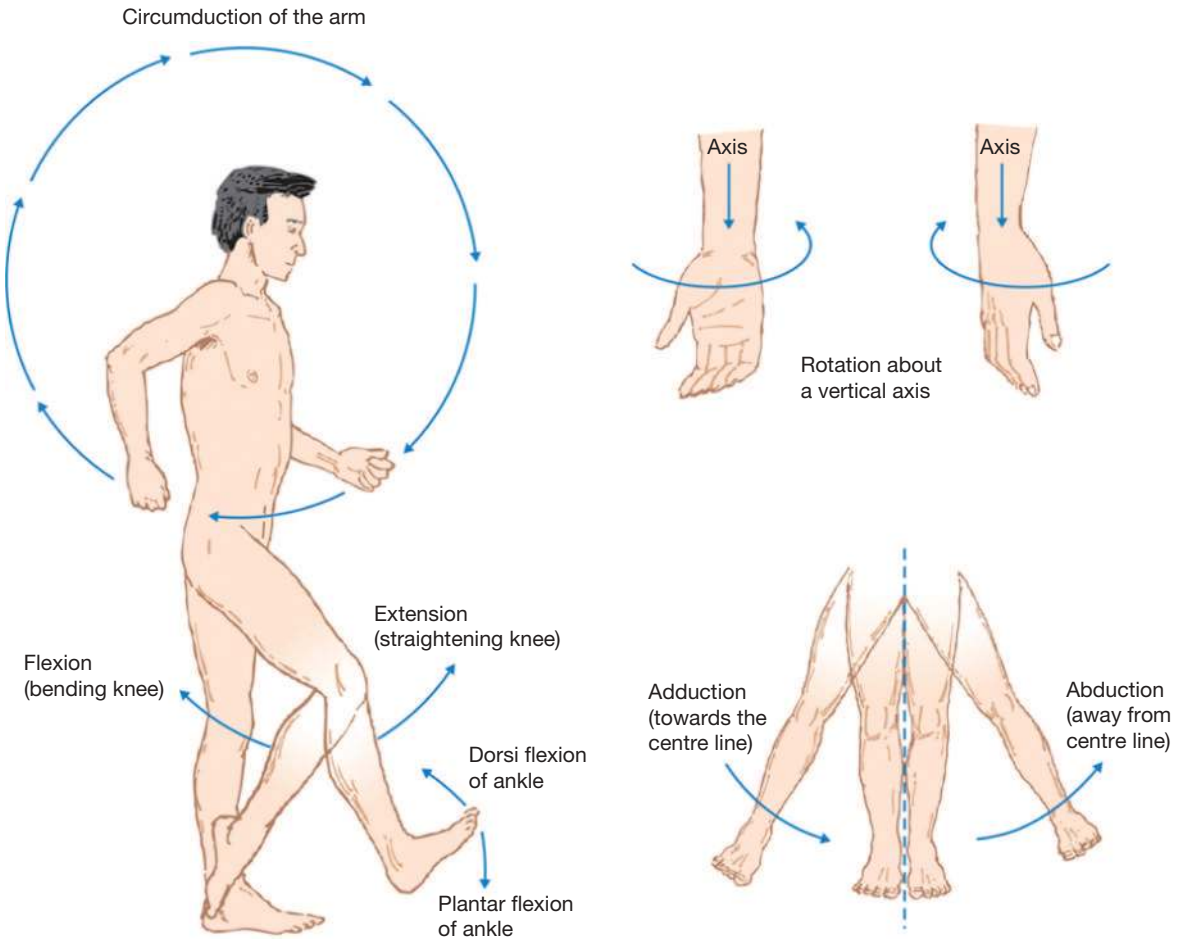
There are several types of synovial joints. Each is capable of a different range of movement. Table 10.1 and figure 10.8 illustrate the movements possible at each of th synovial joint types.

flexion the movement that decreases the angle of a joint; for example, bending the elbow

TABLE 10.1 Synovial joint classification

Type	Example	Anatomical movements possible
Hinge	Elbow, knee	**Flexion** and extension only
Ball and socket	Hip, shoulder	Flexion, extension, adduction, abduction, rotation, circumduction
Saddle	Thumb	Flexion, extension, adduction, abduction, some circumduction
Pivot	First two cervical vertebrae (i.e. atlas, axis)	Allow rotation only
Gliding	Carpals, tarsals	Flat surfaces of bones allow some gliding movement
Condyloid	Wrist where carpals meet ulna and radius	Flexion, extension, sideways movement

FIGURE 10.8 Movements at synovial joints



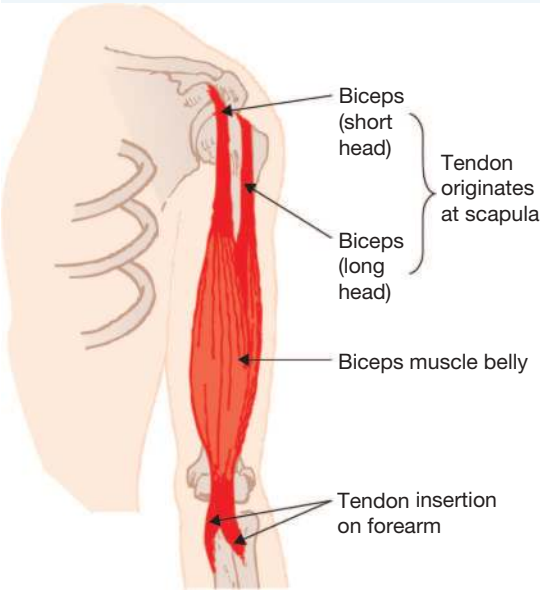
Connective tissue

Connective tissues play a large part in stabilising the joints of the body. In addition, they may help create movement at the joint and act as a lubricant and shock absorber between bones. The three main types of connective tissue are **cartilage**, **tendons** and **ligaments**.

Cartilage is a smooth, slightly elastic tissue. It is found in various forms in the body. The ends of the bones in synovial joints are coated with smooth, shiny cartilage called hyaline cartilage. Some synovial joints also have cartilage between the bones (e.g. the knee). The vertebrae of the spine are separated by discs of cartilage, and the ribs attach to the sternum by way of cartilage. The cartilage in the knee and between the vertebrae provides shock absorption during movement. The hard part of the ear and the tip of the nose are also cartilage.

Tendons, which attach muscles to bones, are inelastic and very strong. They allow movement to take place, as they help muscles pull across the joints on the bones (figure 10.9).

FIGURE 10.9 Tendons of the bicep



Ligaments cross over joints, joining bone to bone. They are slightly elastic, allowing some small movement of the bones at the joint. Their main function is to provide stability of the joint, preventing dislocation. Unfortunately, ligaments cannot repair themselves if damaged or torn, and often surgery is necessary to repair them. The most common ligaments to be damaged are those found in the knee joint (figure 10.10).

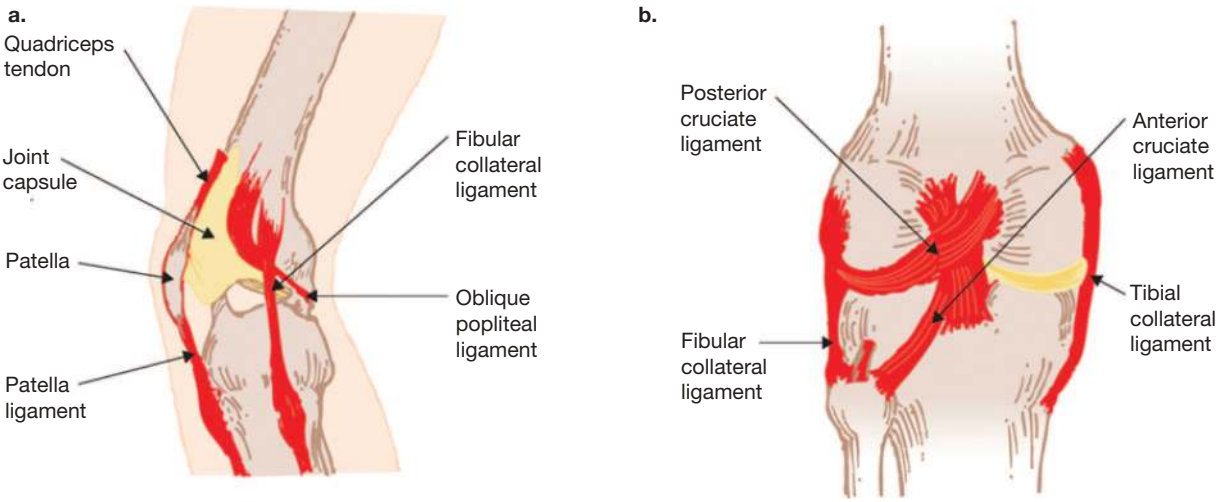
To learn more about bones, follow the weblinks in your Online Resources.

cartilage tissue that protects bones at the joints from rubbing against one another

tendons attach muscles to bones

ligaments straps of slightly elastic tissue that cross over joints, attaching bone to bone and providing stability

FIGURE 10.10 Ligaments provide stability to the knee joint. **a.** side view; **b.** rear view



10.3 ACTIVITIES

1 Skeleton labelling

Use **The skeletal system** interactivity in your Online Resources to complete the activity on labelling the skeleton.

2 Investigating movements

In pairs, perform the following movements or actions. For each, identify and record in the following table:

a. the primary joint used
b. what type of joint it is
c. the anatomical movements performed.

doc-14707
doc-14732

Use the **Joint actions** and **Joint movement** worksheets in your Online Resources to help you. The first row of the table has been completed for you.

Movement	Joint	Type of joint	Anatomical movement(s)
Pull-up	Elbow	Hinge	Flexion, extension
Push-up			
Bowling a cricket ball (arm action)			
Deep knee-bend			
Legs in star jump			
Turning head from side to side			

3 Skeletal system games

weblink

Revise your knowledge of the skeletal system. Use the weblinks **Skeletal system games** and **Whack a bone** in your Online Resources.

on Resources

Interactivity The skeletal system (int-5491)

10.3 Exercise

10.3Exercise

Select your pathway

LEVEL 1	LEVEL 2	LEVEL 3
1, 2, 3, 4, 5, 8	6, 7	9, 10

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Check your understanding

1. MC What are the two main functions of flat bones?
   - A. They contain bone marrow, where red blood cells are made.
   - B. They protect internal organs.
   - C. They provide an area for muscle attachment.
   - D. They connect bones such as the patella and tibia.
2. Choose the appropriate characteristic from the following list for each of the connective tissue types below.
   inelastic and very strong; slightly elastic and allow for some movement; smooth and slightly elastic
   Cartilage is _____
   Tendons are _____
   Ligaments are _____
3. MC Identify the different types of bones. Select all options that apply.
   - A. Flat
   - B. Regular
   - C. Long
   - D. Sesamoid
4. Bone is approximately 50 per cent water and 50 per cent solid matter. True or false?
5. An example of a long bone is the scapula. True or false?

Apply your understanding

6. **Describe** the characteristics of short bones and give an example.
7. **Describe** the characteristics of irregular bones and give an example.
8. **Identify** the different types of joints.
9. **Explain** a special feature of the vertebral column.
10. **Compare** the different roles of joint types in our body.

LESSON
10.4 The muscular system

LEARNING INTENTION

- Describe the functions and structure of the muscular system and identify the different types of muscles.

10.4.1 Functions of muscles

We have over 600 muscles in our body, each with a special job to do.

ENGAGE

In this lesson we will investigate different types of muscles. We will focus specifically on skeletal muscles, which are used to create movement by pulling on the bones they attach to. We will also look at why some people are better suited to long-distance events and others to power, speed and strength activities.

In small groups, list as many muscles in the human body as you can. Demonstrate a stretch for each of the identified muscles.

FIGURE 10.11 Some people's bodies are best suited to power and strength activities.

DISCUSS

Why are some people better suited to power and strength activities?

10.4.2 Functions of the muscular system

The muscular system has three main functions:

- *To create movement*. This happens when skeletal muscles pull on bones. Movement is also created through the development of muscular strength, flexibility, endurance, speed and power.
- *To maintain good posture.* Muscle tone allows us to keep an erect posture by keeping our shoulders back, our head up and our back straight.
- *To maintain bodily functions*. For example, the heart muscle pumps blood, the muscles of the stomach wall and intestines digest food, and the diaphragm and chest muscles initiate breathing.

The nervous system controls the action of all the muscles, while the cardiovascular system supplies the muscles with all the necessary nutrients.

10.4.3 Types of muscle

There are three different types of muscle in our bodies: skeletal, smooth and cardiac.

Skeletal muscle is often called striated muscle, because of its striped appearance when viewed under a microscope. These muscles are responsible for all our voluntary movements, and are the muscles we can exercise and train to improve flexibility, strength and endurance. Skeletal muscles are also responsible for the development and maintenance of good posture. They are called skeletal muscles because they pull on the bones of the skeleton to create movement.

Smooth muscle is found in the digestive system, the walls of other vital organs such as the bladder, in blood vessels and in the diaphragm. We have no control over these muscles, and for this reason, they are called involuntary muscles.

Cardiac muscle is the muscle of the heart. It has a striped appearance similar to skeletal muscle, but its action is involuntary, like that of smooth muscle.

skeletal muscle all the muscles that pull on bones to create movement

smooth muscle involuntary muscle that contracts and relaxes without conscious thought

cardiac muscle muscle of the heart

reciprocal inhibition pair of muscles working together; the antagonist muscle relaxes and the agonist muscle contracts to create movement

agonist prime mover; the muscle that creates movement

antagonist muscle that relaxes to allow movement to take place

10.4.4 Skeletal muscles

All the muscles shown in figure 10.12 are used to create movement by pulling on the bones they attach to. Muscles can only pull, they can never push, and they always work in pairs. For example, the biceps and triceps always work together, as do the hamstrings and quadriceps. When one of the muscles contracts to create movement, the other muscle in the pair relaxes to allow easier movement. This is called **reciprocal inhibition**. The muscle doing the work is called the **agonist**. The muscle relaxing is called the **antagonist**. A skilful performer has highly trained muscles that have reciprocal inhibition working at its peak for smooth-flowing muscle contraction.

FIGURE 10.12 Skeletal muscles, from the front and the back of the body

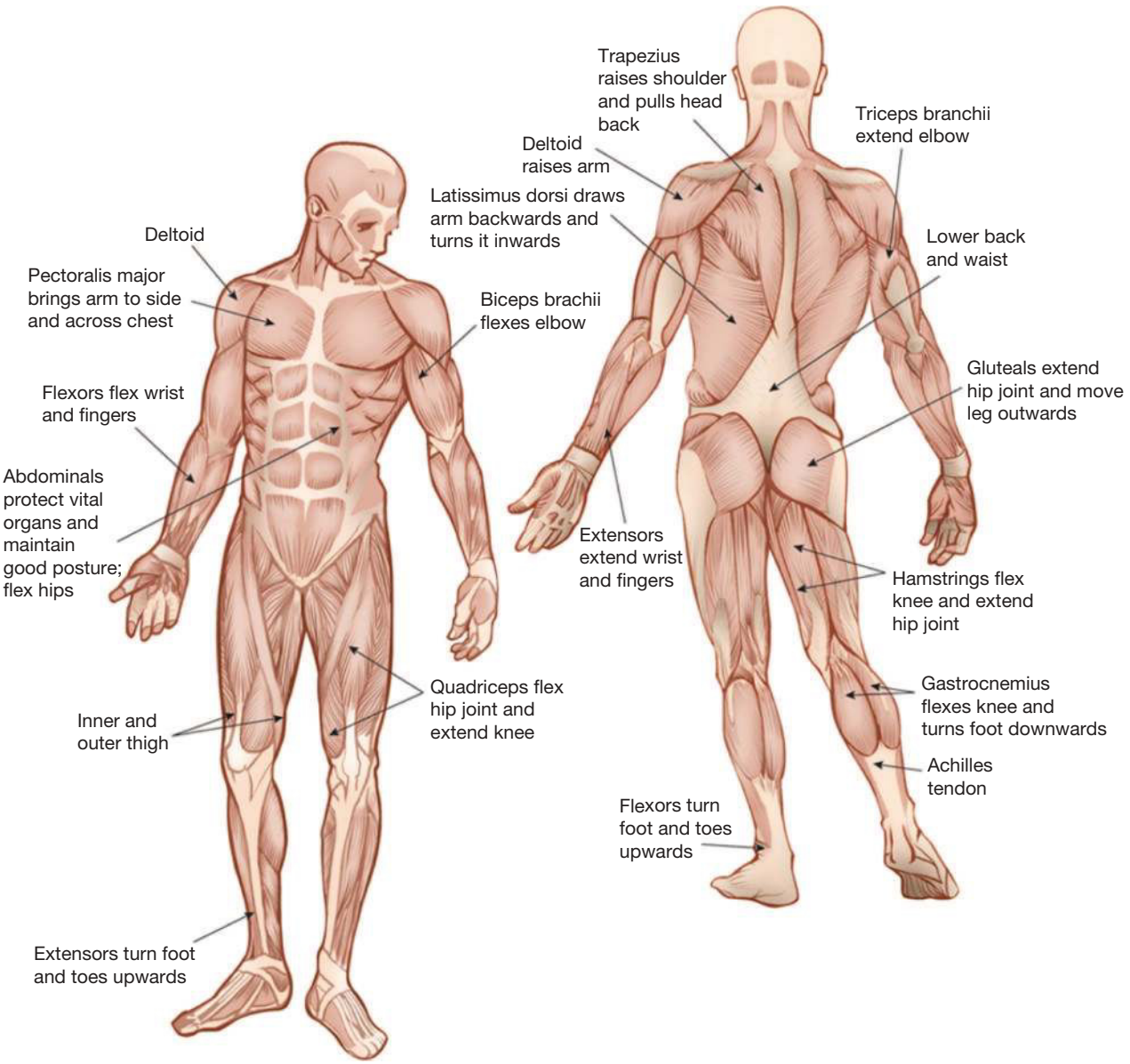
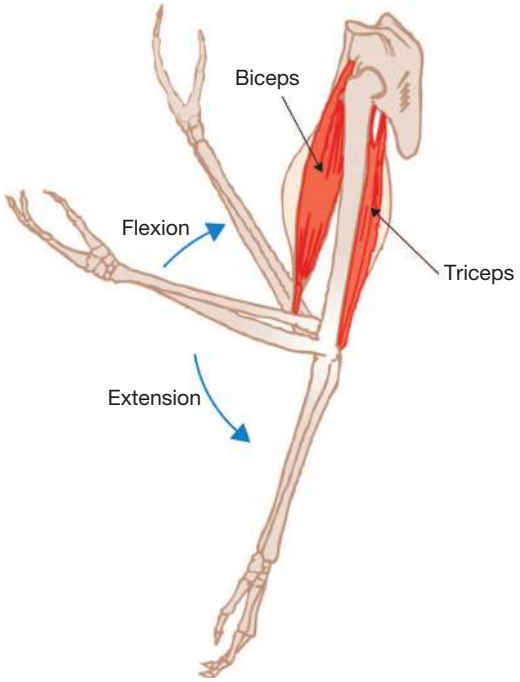


Figure 10.13 shows how muscles work in pairs. The biceps muscle has two sets of tendons. One set attaches to the shoulder, while the other attaches to the forearm. As the biceps shortens or contracts, flexion occurs. When the triceps at the back of the humerus contracts, it extends the elbow joint (extension).

FIGURE 10.13 The biceps muscle at work. The two ends of the muscle are attached to different bones by tendons. When the muscle contracts, one of the bones must move.



DID YOU KNOW?

There are about 650 muscles in the human body and about 60 muscles in the face alone. Smiling is easier than frowning. It takes 20 muscles to smile and over 40 to frown.

10.4.5 Structure of skeletal muscles

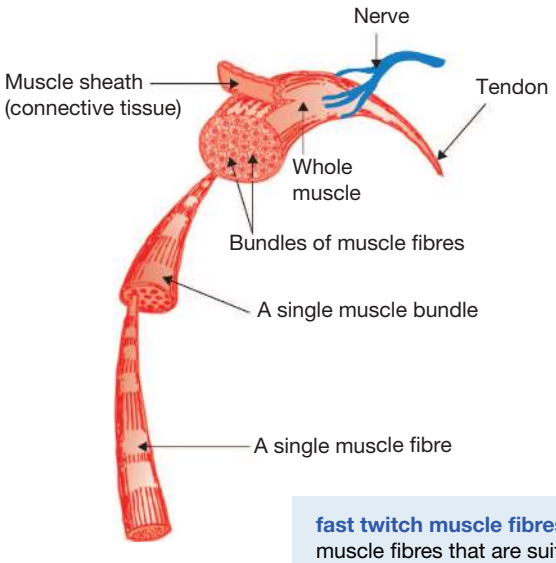
A muscle is made up of hundreds of single muscle fibres, bound together to form muscle bundles, which are, in turn, bound together to form the whole muscle. A muscle fibre is one single muscle cell and can range in length from 1 mm to 40 mm.

Types of muscle fibre

There are two types of muscle fibre: fast (white) and slow (red).

Fast twitch muscle fibres (white) are used for power, speed and strength activities such as sprinting, jumping and throwing. These muscle fibres contract rapidly with a lot of speed and force.

FIGURE 10.14 A skeletal muscle in detail



fast twitch muscle fibres white muscle fibres that are suited to performing anaerobic activity

Slow twitch muscle fibres (red) are used for longer-duration activities of lower effort or force, such as swimming, running or cycling continuously for five minutes or more. Slow twitch muscle fibres contract more slowly, but can continue to contract for long periods of time. The muscles that control our posture are generally made up of a larger percentage of slow twitch muscle fibres.

slow twitch muscle fibres red muscle fibres that are suited to performing aerobic activity

Some people are born with a higher percentage of slow twitch rather than fast twitch muscle fibres. These people are potentially better suited to longer-distance or -duration events, such as cross-country running and distance swimming. Top class sprinters may have up to 70 per cent fast twitch muscle fibres, while top class marathon runners may have up to 80 per cent slow twitch muscle fibres.

FIGURE 10.15 Professional basketball player Patty Mills, who currently plays for the Brooklyn Nets in the NBA, would possess a large percentage of fast twitch muscle fibres. (Note that Patty is playing for the San Antonio Spurs in this picture, in a game against the Nets [2014].)

FIGURE 10.16 Jessica Stenson, 2022 Commonwealth Games marathon gold medal winner, would possess a large percentage of slow twitch muscle fibres.

Most people have an even distribution of muscle-fibre types. However, through training specific fibres, we can increase their capabilities.

10.4.6 Types of muscle contraction

There are two types of muscle contraction:

- ***Isotonic***. Contractions in which the length of the muscle changes while applying a force.
- ***Isometric***. Contractions in which the muscle applies a force, but does not change its length.

isotonic when a muscle produces force while changing length, either lengthening or shortening

isometric when a muscle produces force without changing length

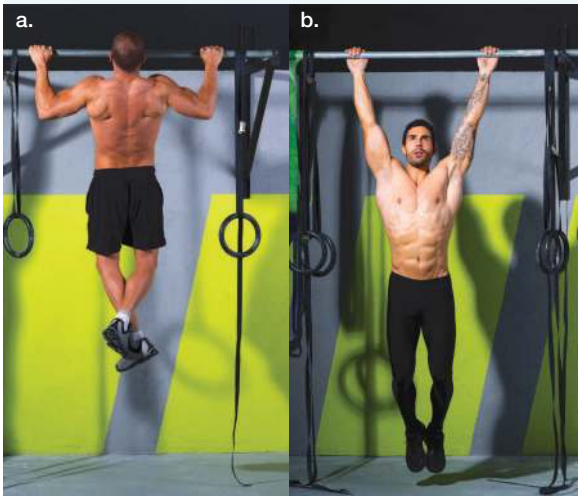
Isotonic contraction

When looking at muscles at work, we tend to think they can apply a force only if they are shortening. This type of muscle action is called an isotonic concentric contraction; for example, the biceps shortening as the body pulls itself up while performing a chin-up, as shown in figure 10.17a.

Muscles can also apply a force when they are returning to their normal shape or resting length. We tend to think of this as the muscle lengthening. This type of muscle action is called an isotonic eccentric contraction; for example, the biceps lengthen with control as the body lowers itself from performing a chin-up, as shown in figure 10.17b.

If the body did not use muscle force in a controlled lengthening of the biceps, it would fall with gravity and damage the shoulder joint, and the person would probably involuntarily release their grip and fall to the floor.

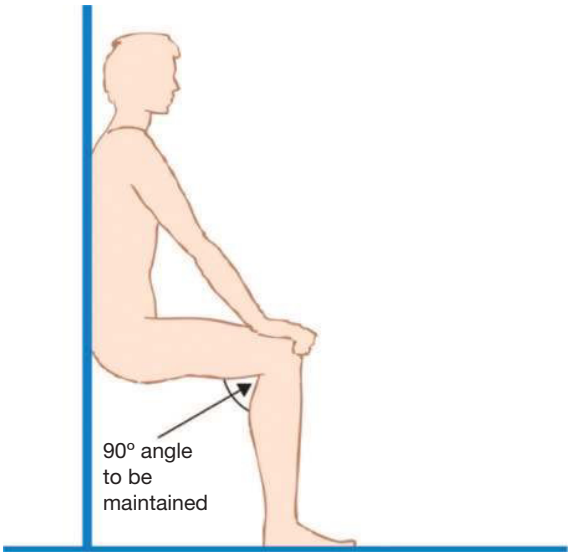
FIGURE 10.17 a. As the person pulls up to perform a chin-up, the biceps shorten while producing force. This is a concentric contraction. **b.** As the person slowly straightens the arms to lower the body back down to the starting position, the biceps lengthen under tension. This is an eccentric contraction.



Isometric contraction

In isometric contraction, the muscle applies a force without changing length; for example, when performing a half squat with the back resting against a wall (figure 10.18), the quadriceps muscle group is working very hard to prevent the body from falling or sliding to the floor.

FIGURE 10.18 In this wall-sit, the length of the muscle does not change, but the muscle works hard to prevent the body sliding down to the floor.



DID YOU KNOW?

The longest muscle in the body is the sartorius, from the outside of the hip, down and across to the inside of the knee. The biggest muscle in the body is the gluteus maximus, in the buttock.

Exercise and skeletal muscles

All skeletal muscles can have their strength, endurance and flexibility improved by exercising them on a regular basis.

One of the most noticeable effects of exercising skeletal muscles is an increase in their size, as shown in figure 10.19. The term used to describe a muscle increasing in size is **hypertrophy**.

FIGURE 10.19 Note the size, shape and definition of the muscles on each of these body builders. The muscles are noticeable because of the hypertrophy caused by training with weights over a long period of time. A low percentage of body fat also accentuates muscle definition.

When a muscle hypertrophies, each single muscle fibre increases in thickness, along with an increased blood supply and store of food for energy.

If a muscle is not exercised regularly, it will become smaller in size. For example, if we break an arm or a leg, the muscles will be smaller when the plaster is taken off, and therefore the arm or leg will look thinner. When a muscle gets smaller, it is called **atrophy**.

Improved muscle function helps to develop and maintain good posture and self-confidence. Everyone can improve muscle function, posture, physique and self-confidence through regular exercise and training. Examples of training methods are provided in topic 9.

hypertrophy when the circumference of a muscle becomes larger as a result of exercise

atrophy when the circumference of a muscle becomes smaller due to lack of use

10.4 ACTIVITIES

1 Label

int-6340

Use the **Muscular systems** interactivity in your Online Resources to label a diagram of the muscles.

2 Muscle contractions

doc-14708

Perform the following exercises in pairs and then complete the tables using the **Muscle contractions** worksheet in your Online Resources.

a. Wall-sit — try to hold for two minutes
b. Push-ups (on a chair) — maximum number in 30 seconds
c. Bent-knee sit-ups — maximum number in 60 seconds

	My results	Partner's results
Wall-sit	Held for _____ s	Held for _____ s
Push-ups	_____ in 30 s	_____ in 30 s
Bent-knee sit-ups	_____ in 60 s	_____ in 60 s

	Type of muscle contraction	Main muscle used	Main joint action
Wall-sit			
Push-ups			
Bent-knee sit-ups			

3 Circumference and strength

doc-14706

Use the **Hand grip strength** worksheet in your Online Resources to complete the lab activity on the relationship between forearm size and hand grip strength.

4 Complete the following statements

a. The term 'hypertrophy' is used to describe a muscle when it _____.
b. Atrophy describes what happens to a muscle when _____.
c. Fast twitch muscle fibres are best suited to _____.
d. Slow twitch muscle fibres are best suited to _____.

5 Active muscles

doc-14704

Use the **Muscles in action** worksheet in your Online Resources to complete the table of muscles used for specific actions.

6 Twitching muscles

doc-14709

Use the **Muscle twitch** worksheet in your Online Resources to explore the percentage of fast and slow twitch muscles used by various activities.

10.4 Exercise

10.4 Exercise

Select your pathway

LEVEL 1	LEVEL 2	LEVEL 3
1, 3, 4, 5	2, 6, 7, 9	8, 10

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Check your understanding

1. MC What are the three different types of muscle in our bodies?
   - A. Smooth
   - B. Cardiac
   - C. Ligaments
   - D. Skeletal
2. An isotonic contraction is when a muscle produces force while changing length, either lengthening or shortening. True or false?
3. The muscle that does the work or the prime mover is called the antagonist. True or false?
4. MC Which of the following is not an example of an isometric contraction?
   - A. Downhill skiing — holding your legs in slight knee flexion as you travel down the slope
   - B. Gym — pulling your body up while performing a chin-up
   - C. Ballet — holding an arabesque position
   - D. Archery — pulling and holding the bow string back before release
5. MC Muscles always work in pairs. Identify the option below that does not give a correct pairing.
   - A. Biceps/triceps
   - B. Quadriceps/hamstrings
   - C. Rectus abdominus/erector spinae
   - D. Triceps/hamstrings

Apply your understanding

6. **Describe** the muscle action of the quadriceps.
7. **Explain** what slow twitch muscle fibres are best suited to.
8. **Compare** the role of the agonist and antagonist in movement.
9. **Identify** where you would find smooth muscle.
10. **Analyse** the benefits of improved muscle function.

LESSON
10.5 The cardiovascular system

LEARNING INTENTION

- Describe the functions and structure of the cardiovascular system and identify its different elements.

10.5.1 A system made up of the heart, blood vessels and blood

The cardiovascular system is responsible for the delivery of nutrients and for the removal of waste products from the body's cells. All other systems depend on its efficient function.

ENGAGE

The cardiovascular system is a complex system made up of the heart, blood vessels and blood. Its main role is to circulate blood around the body so that oxygen and nutrients are delivered to the muscles and waste products are removed. The cardiovascular system plays an extremely important role during exercise, as the more efficiently the cardiovascular system works, the greater the amount of oxygen and nutrients that can be delivered to the working muscles. A resting heart rate is usually 60–80 beats per minute; however, as the level of activity increases, the heart needs to beat faster to deliver more oxygen and nutrients to the muscles.

doc-14710 Use the **Pulse check** worksheet in your Online Resources to learn about the various methods for measuring your pulse.

FIGURE 10.20 You can check your heart rate by taking your pulse.

10.5.2 Functions of the cardiovascular system

The cardiovascular system:

- circulates blood to all parts of the body
- transports water, oxygen and nutrients to cells
- transports wastes, including carbon dioxide, away from the cells
- helps maintain correct body temperature
- helps fight disease, through white blood cells and antibodies in the blood.

10.5.3 Elements of the cardiovascular system

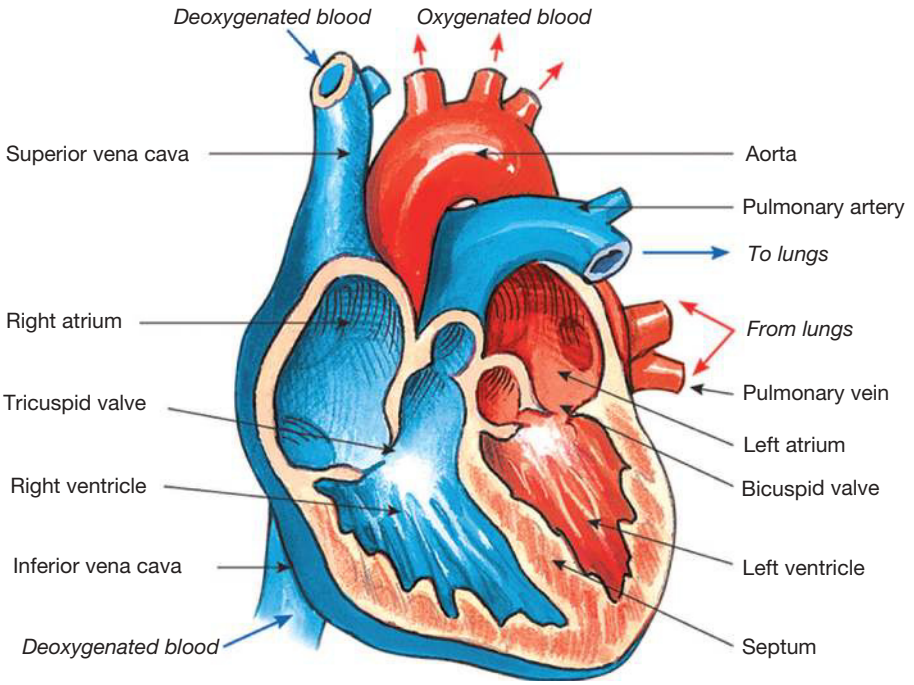
The cardiovascular system comprises three elements: the heart, the blood vessels and the blood.

The heart

The **heart** is a muscular pump designed to pump blood throughout the cardiovascular system (figure 10.21).

int-6338

FIGURE 10.21 Blue denotes the flow of deoxygenated blood through the heart. Red is the oxygenated blood returning from the lungs to be pumped from the left ventricle to the rest of the body.



The heart has four chambers — two atria and two **ventricles**. The atria are the upper chambers, which receive blood; the ventricles are the lower chambers, which pump blood.

The **septum** divides the heart into two pumps. The left pump is the left atrium and left ventricle, and the right pump is the right atrium and right ventricle. The blood in these two pumps does not mix. This is because the left pump has oxygen-rich blood for the body, while the right pump has carbon dioxide-saturated blood. This needs to be transported to the lungs for cleaning to remove the carbon dioxide.

Valves are located between the atria and the ventricles. They are also found at the entrance to the arteries from the heart. The valves allow blood to travel in only one direction, stopping blood in the ventricles from flowing back into the atria.

Some other important features of the heart are:

- The heart is located in the centre of the chest between the two lungs and is protected by the ribs.
- The adult heart is about the size of a large fist.
- At rest, the average adult heart pumps at about 70 beats per minute (bpm).
- At maximum work, your heart rate can be more than 200 beats per minute.
- At maximum work, the heart may circulate up to 35 litres of blood every minute.

heart muscular pump responsible for pumping blood around the cardiovascular system

ventricles pumping chambers of the heart. The left ventricle pumps blood into the systemic circulation and the right ventricle pumps blood into the pulmonary system

septum muscular wall separating the right and left sides of the heart into two pumps

weblink

To find out how many times your heart beats, follow the **Life beats** weblink in your Online Resources.

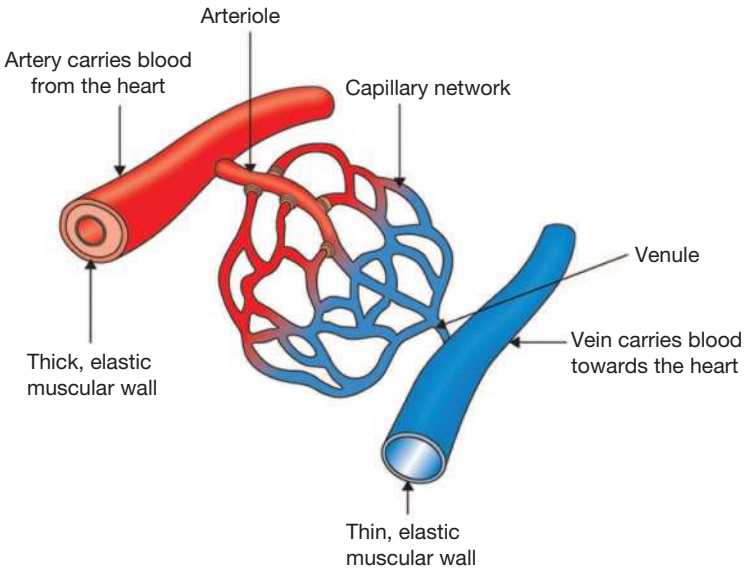
Blood vessels

The network of blood vessels that carry blood to all parts of our body is referred to as the **vascular system**.

There are three types of blood vessels:

- **arteries**
- **veins**
- **capillaries**.

FIGURE 10.22 Characteristics of the different blood vessels, showing how they are connected



Arteries

Arteries always carry oxygen-rich blood away from the heart to the body. This is except for the pulmonary artery, which carries oxygen-depleted blood away from the heart to the lungs.

The **aorta** is the largest artery in the body. The left ventricle of the heart forcefully pushes the blood into the aorta and on to the rest of the body. The volume of blood pumped into the arteries with each beat of the heart is quite large. Because the artery walls are elastic, they are able to expand with each heartbeat to accommodate this volume. We are able to measure heart rate by feeling the pulse of each beat as blood is pumped through the arteries. Where arteries pass close to the surface of the skin, we can take a pulse count. The two most common sites where this occurs are in the neck (carotid pulse) and in the wrist (**radial pulse**).

Figure 10.23 shows the location of the major pulse sites in the body. These are often referred to as pressure points, because pressure may be applied to the arteries at these points to reduce the flow of blood from an artery that may have been cut in an accident. Bleeding from an artery may be recognised in two ways:

- The blood spurts out with each heartbeat.
- The blood is a bright red colour because it is rich in oxygen.

vascular system the network of blood vessels, comprising arteries, capillaries and veins

arteries blood vessels that carry blood away from the heart; they have thick, elastic walls

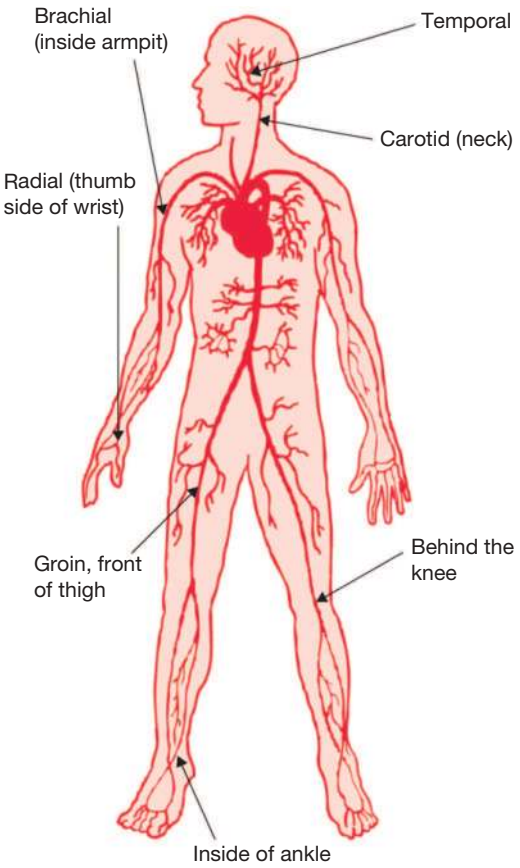
veins blood vessels that return blood to the heart

capillaries the smallest blood vessels

aorta main artery of the body; delivers blood from the left ventricle of the heart

radial pulse pulse on the thumb side of the wrist used to measure heart rate

FIGURE 10.23 Pulse sites occur where an artery is close to the surface of the skin and may be compressed against a muscle or bone.



Factors that affect resting heart rate/pulse counts include:

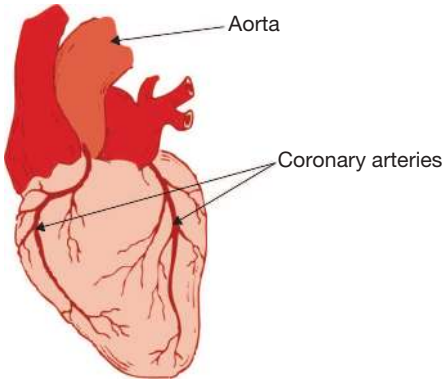
- *gender.* Males usually have a lower resting heart rates than females.
- *temperature.* As air temperature increases, heart rate increases.
- *eating.* Heart rate is raised after meals.
- *laughing.* Heart rate increases with laughing.
- *smoking.* Heart rate increases from smoking.
- *body position.* Heart rate when standing is higher than when sitting or lying.

coronary arteries arteries that supply blood to the heart muscle

Coronary arteries

The heart, like any other muscle, needs a supply of blood, which provides the nutrients required for the production of energy for work. There are two **coronary arteries** (figure 10.24). Both come from the aorta, and they branch out across the outer surface of the heart muscle to feed all four chamber walls with nutrients. One of the most common causes of heart attack is when one or both of the coronary arteries become blocked by fatty deposits. This reduces the blood supply to the heart muscle and causes severe pain in the chest, and possibly death of part of the heart muscle.

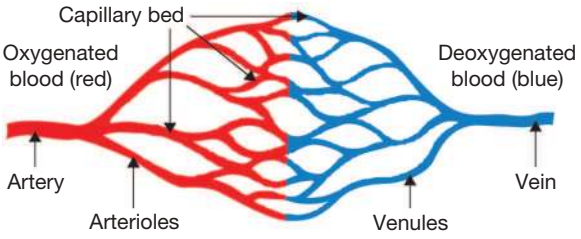
FIGURE 10.24 The two coronary arteries supply oxygen and nutrients to the cardiac muscle.



Capillaries

Capillaries are the smallest blood vessels and are the site of exchange of nutrients and wastes between the blood and the body cells (figure 10.25). Oxygen enters muscles and waste products exit the muscles through the capillaries. Capillaries have very thin walls, which allows easy exchange of nutrients and wastes.

FIGURE 10.25 Oxygen, carbon dioxide and nutrients are exchanged between the blood and cells through the capillaries.



When exercise first begins, the capillaries dilate (become larger in diameter), which increases blood flow to the muscles. A long-term exercise program may increase the number of capillaries supplying blood to muscles, including the heart. This allows an increased supply of oxygen and other nutrients to the muscles, and more rapid removal of wastes. The capillaries eventually carry these wastes into the veins.

Veins

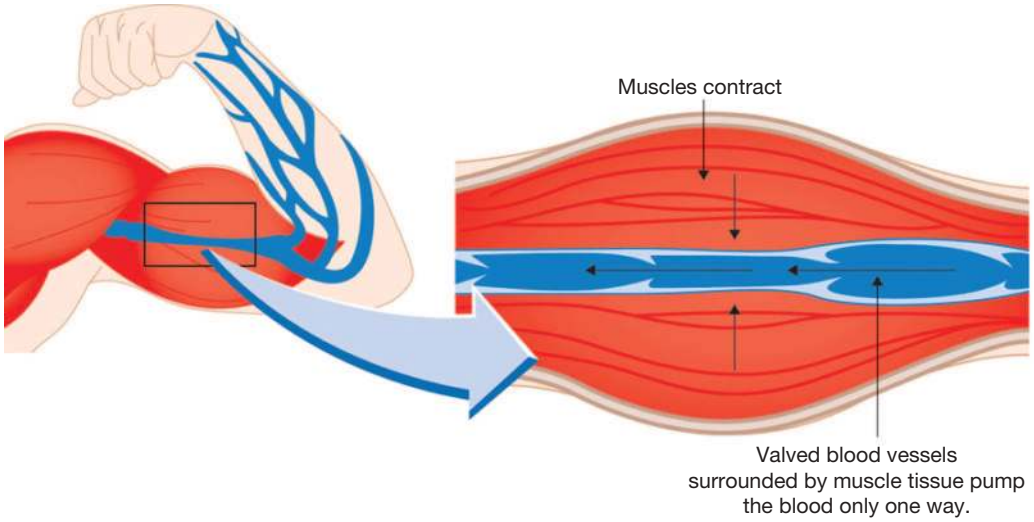
By the time the blood reaches the veins, it is no longer surging or pulsing under the influence of the heartbeat. The flow is steady and consistent. Vein walls are quite thin and not elastic like those of the arteries.

Veins carry blood with a low oxygen content towards the heart (except for the pulmonary vein, which carries oxygen-rich blood), as the muscles and cells have extracted the oxygen for the production of energy.

Veins have one-way valves that prevent the blood from flowing backwards away from the heart (figure 10.26). The return of blood to the heart in the veins depends a great deal on the contraction of skeletal muscles.

Veins running alongside muscles are squashed or squeezed when the muscles contract. Blood in the vein is forced towards the heart because of the one-way valves.

FIGURE 10.26 This large vein is situated between muscles. As the muscles contract, the vein is squeezed, forcing blood towards the heart. This is called the muscle pump effect.



After exercising, it is important to perform a cool-down routine for a few minutes. This keeps the muscles, especially those of the legs, contracting and relaxing. This gently pushes the blood in the veins of the legs back into the core of the body and into the heart. This allows quick removal of wastes, such as carbon dioxide, and speeds up recovery from exercise. Follow the **Body basics blood** weblink in your Online Resources to learn more.

weblink

Blood

Blood is the only tissue of the body that is a liquid. Blood cells make up 45 per cent of blood volume. Plasma makes up the other 55 per cent. There are three types of blood cell: red blood cells, white blood cells and platelets.

Red blood cells:

- make up 99 per cent of all blood cells
- carry oxygen and carbon dioxide to and from the cells and muscles
- contain haemoglobin, the substance that carries oxygen
- are produced in the bone marrow (millions are produced each minute)
- are removed by the liver and spleen at a rate of millions per minute when worn out
- have a lifespan of about four months.

White blood cells:

- exist in the body in a ratio of one to every 700 red blood cells
- come in a variety of shapes and sizes
- are generally larger than red blood cells
- can pass through capillary walls into the cells of the body to fight disease-causing organisms by absorbing and digesting them
- have a lifespan of only a few days.

Platelets:

- are the cells that cause blood to clot when a blood vessel is damaged
- are smaller than red blood cells
- are produced in the bone marrow.

Plasma is a clear, yellowish fluid in which the blood cells are suspended. Plasma continually passes through the capillary walls and into the cells. Plasma bathes the cells with fluid, provides them with proteins, salts, glucose, fats, antibodies and some oxygen, and removes waste products.

Regular exercise causes the amount of blood in our bodies to increase, and this also means an increase in the amount of **haemoglobin**. Haemoglobin is the substance in red blood cells to which the oxygen attaches. It gives the blood its bright red appearance in the arteries. If we have increased amounts of haemoglobin, then we can carry more oxygen to our muscles, which in turn means we can do more work. Haemoglobin contains a large amount of iron. A lack of iron in the diet lowers the amount of haemoglobin in the blood and reduces the amount of oxygen the blood can transport. This condition is called anaemia.

red blood cells comprise 99 per cent of all blood cells and carry oxygen and carbon dioxide to and from the cells and muscles; contain haemoglobin

white blood cells part of the immune system; fight disease-causing organisms by absorbing and digesting them

platelets cells in blood that cause it to clot when blood vessels are damaged; produced in bone marrow

plasma clear fluid contained in blood that transports red and white blood cells, nutrients and waste

haemoglobin substance in the blood that transports oxygen to the body cells

systemic circulation blood from the heart circulates throughout the arteries and veins of the body and then returns to the heart

pulmonary circulation blood from the heart is pumped to the lungs for oxygenation and then transported back to the heart

10.5.4 Circulation of blood

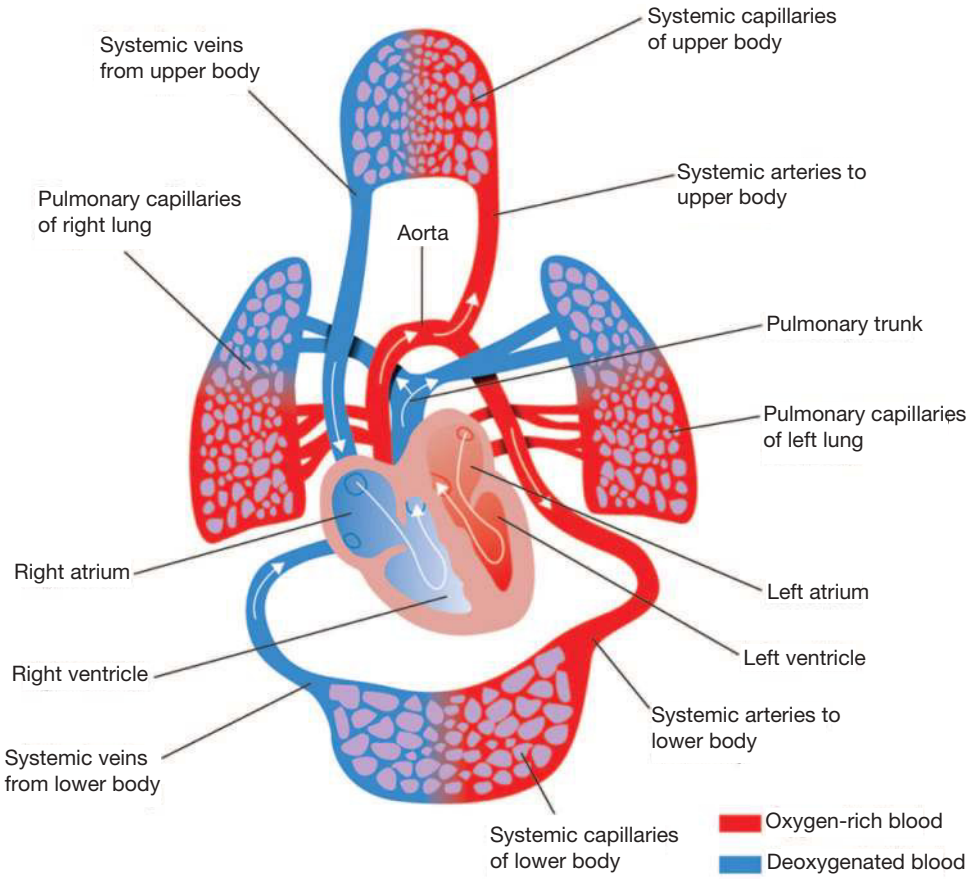
Circulation of blood throughout the cardiovascular system is carried out through:

- **systemic circulation**, in which blood from the heart is circulated into the arteries, around the body and back to the heart
- **pulmonary circulation**, in which blood from the heart is circulated to the lungs and back to the heart again.

The following sequence shows how blood is circulated through the body. See also figure 10.27.

1. The right atrium receives blood from the body that is low in oxygen and high in carbon dioxide.
2. The right ventricle receives blood from the right atrium and pumps this blood to the lungs.
3. Blood gives up carbon dioxide (CO_2) and takes up oxygen (O_2) while in the lungs.
4. Oxygenated blood is returned to the left atrium.
5. Blood enters the left ventricle and is pumped through the aorta into the arteries.
6. Blood flows to all extremities of the body through smaller and smaller arteries called arterioles.
7. Blood enters capillaries, where oxygen and nutrients are given up to the cells, and carbon dioxide and other wastes are removed from the cells.
8. Capillaries carry blood to the veins.
9. Veins return blood to the right atrium.

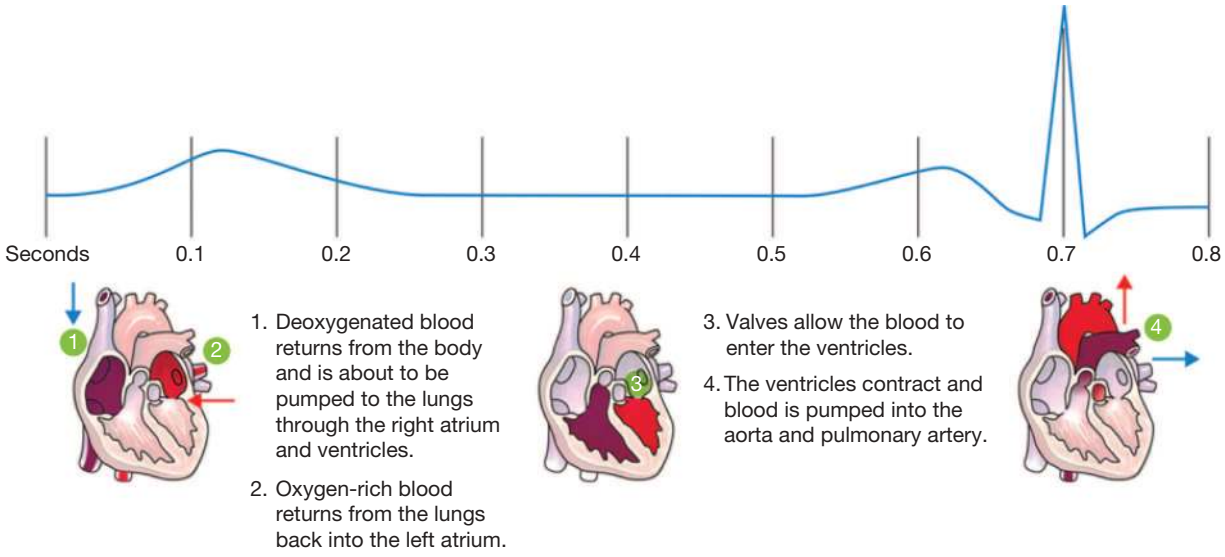
FIGURE 10.27 The circulation of blood: Pulmonary and systemic



Test your knowledge of the heart using **The structure of the heart** interactivity in your Online Resources.

int-6338

FIGURE 10.28 The heart has two muscular pumps that circulate blood around the body. Each heartbeat pumps about half a cup of blood in eight-tenths of a second. This is what happens in 0.8 seconds.



10.5.5 Removal of body heat

Blood carries heat produced by the cells, especially the muscle cells, to the surface of the skin. Exercise causes the blood vessels to dilate and those close to the skin surface are able to radiate the heat outwards. On a hot day, it is easy to see the veins in our forearms. Sweat on the skin, cooled by wind and air flowing over the skin surface, also helps to remove the heat from the vessels close to the surface. As well as blood in the veins giving off heat, the capillaries near the surface of the skin dilate and radiate a lot of heat as blood passes through them. As the capillaries dilate, they give the skin surface a red, flushed colour. Removal of body heat is a very important function of the cardiovascular system and is dependent on a good supply of water. For this reason, it is important to drink fluids regularly when exercising, especially on a hot day.

The air we breathe out also carries heat from our bodies and helps us to cool down and maintain our core body temperature at 37°C.

10.5.6 Blood pressure

Doctors use **blood pressure** as a measure, or indicator, of good physical health. Blood pressure gives an indication of:

- how hard the heart has to work to push the blood through the arteries, capillaries and veins
- the health of our arteries and capillaries.

Blood pressure has two measurements: an upper reading called **systolic blood pressure** and a lower reading called **diastolic blood pressure**.

Systolic blood pressure is a measure of how much pressure is developed when the heart pumps the oxygen-rich blood into the aorta and out through the arteries to the cells and muscles. Diastolic blood pressure is a measure of the pressure of the blood in the arteries as the heart relaxes and fills.

blood pressure measure of how much force is created to push the blood through the blood vessels

systolic blood pressure the pressure of blood in the arteries as the left ventricle of the heart contracts

diastolic blood pressure the pressure of blood in the arteries as the heart relaxes

Systolic blood pressure is affected by many factors and, as a general rule, should not be greater than about 140 mmHg (or millimetres of mercury) while at rest. A guideline for predicting what your systolic blood pressure should be is 100 plus your age, up to a recommended maximum of 140 to 150. However, with regular exercise and a balanced diet, it is likely that older people can maintain a systolic blood pressure of around 120 mmHg.

Factors affecting blood pressure

Many factors affect blood pressure in the short term:

- *Cigarette smoking*. Smoking increases blood pressure because the capillaries constrict or reduce in size when nicotine is present, thus increasing resistance to blood flow. This effect lasts for about 20 minutes after each cigarette.
- *Exercise*. Increased blood pressure is a natural response along with an increase in heart rate.
- *Fright, stress or anxiety*. Increases blood pressure due to a surge of hormones.
- *Body position*. Affects blood pressure due to the pull of gravity. Standing increases blood pressure, and lying down decreases blood pressure.

Many factors affect blood pressure in the long term:

- *Diet*. A high fat or high salt diet may lead to a permanent increase in blood pressure above safe levels. This occurs when fatty deposits narrow the artery walls, and eventually leads to a loss of elasticity of the walls of the artery.
- *Stress*. Stress may cause **high blood pressure** due to an imbalance in hormone levels.
- *Exercise*. Regular exercise can lead to a decrease in blood pressure when at rest, if blood pressure has been abnormally high.

10.5.7 The cardiovascular system and exercise

To investigate how exercise affects the cardiovascular system, we need to look at both the immediate and long-term effects.

The immediate (acute) effects of exercise are those that take place as soon as exercise begins (e.g. increased heart rate and increased blood flow). The long-term (chronic) effects of exercise are those that take place after months or even years of regular exercise and training (e.g. decreased **resting heart rate** and increased blood supply to muscles).

Immediate (acute) effects of exercise

- *Increased heart rate*. As you begin to exercise, your muscles need more oxygen. This oxygen is used to produce energy, which is needed to make the muscles contract. Oxygen is carried to the muscles by the blood. To provide the extra oxygen, the blood must be circulated more quickly; this is possible only if the heart beats more rapidly. Therefore, increased activity leads to an increased heart rate.
- *Increased cardiac output*. **Cardiac output** is the amount of blood circulated by the heart in one minute. At rest, this averages five litres for adults. At maximum work, it rises to 20 litres for unfit adults and as high as 35 litres for very fit adults. The equation for cardiac output is:
  Cardiac output = heart rate × **stroke volume**
  Therefore, if heart rate increases, so must cardiac output.
- *Increased blood pressure*. When blood travels more quickly through the cardiovascular system, the pressure it applies on the artery walls also increases.

high blood pressure also called hypertension; a major risk factor in coronary heart disease; measured in and expressed as systolic pressure over diastolic pressure

resting heart rate the number of heartbeats per minute while at rest

cardiac output volume of blood pumped around the body in one minute. Cardiac output is measured by stroke volume × heart rate

stroke volume volume of blood pumped from the left ventricle of the heart in one beat

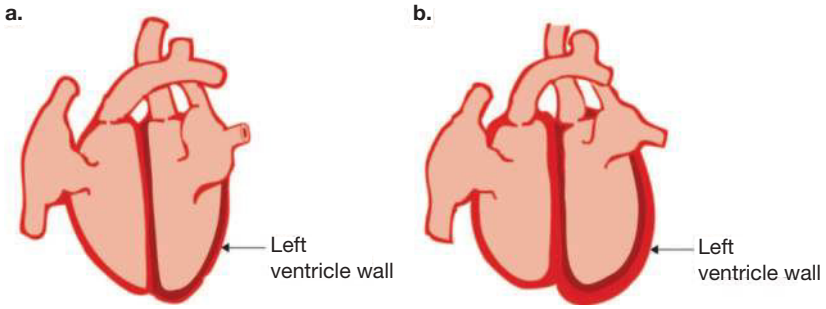
Calculate your **Maximum heart rate** using the worksheet in your Online Resources.

doc-14711

Long-term (chronic) effects of exercise

- *Hypertrophy of the heart*. Any exercise, such as running, swimming or cycling, that is done on a regular basis, will, over a period of weeks and months, lead to changes in the efficiency of the heart. Like any other muscle, the heart will become larger and stronger if it is exercised (figure 10.29). The left ventricle pumps blood into the aorta and then onwards into the rest of the body. It is the left ventricle that is most affected by exercise, as its chamber increases in size and its walls thicken. Endurance training increases the size or volume of the left ventricle, whereas anaerobic training leads to greater thickness of the left ventricle wall.

FIGURE 10.29 a. An untrained heart. Note the thinner walls and smaller volume, especially of the left ventricle. **b.** A trained heart. Note the thicker walls of the ventricles (especially the left ventricle) and the greater volume.



- *Stroke volume at rest increases as fitness increases*. Stroke volume is the term used to describe the amount of blood the left ventricle of the heart can push into the arteries each time it beats. A normal stroke volume for an adult is about 70 millilitres per beat; however, a very fit adult may have a stroke volume of up to 170 millilitres per beat. The amount of blood pumped with each beat depends on the size and strength of the heart. Regular continuous exercise for five minutes or more, such as running or swimming, will increase the size and efficiency of the heart, especially the left ventricle. This also increases the stroke volume of the heart.
- *Resting heart rate decreases*. A fit person has a lower resting heart rate than an unfit person. This means less wear and tear on the heart over a long period of time. But why does resting heart rate decrease with fitness?

  The average adult resting heart rate is somewhere between 60 and 80 beats per minute (bpm). The average adult cardiac output at rest is about five litres of blood per minute. This amount of blood carries enough oxygen to maintain the cells and muscles of any person at rest, regardless of their fitness level, so all adults need only five litres of blood to circulate each minute at rest.

  Cardiac output (CO) = stroke volume (SV) × heart rate (HR) in beats per minute
  Average CO = 5 litres (5000 mL) of blood per minute
  Average HR = 70 bpm

  Therefore:

$$\text{Average SV} = \frac{5000 \text{ mL}}{70}$$
$$= 72 \text{ mL of blood perbeat}$$

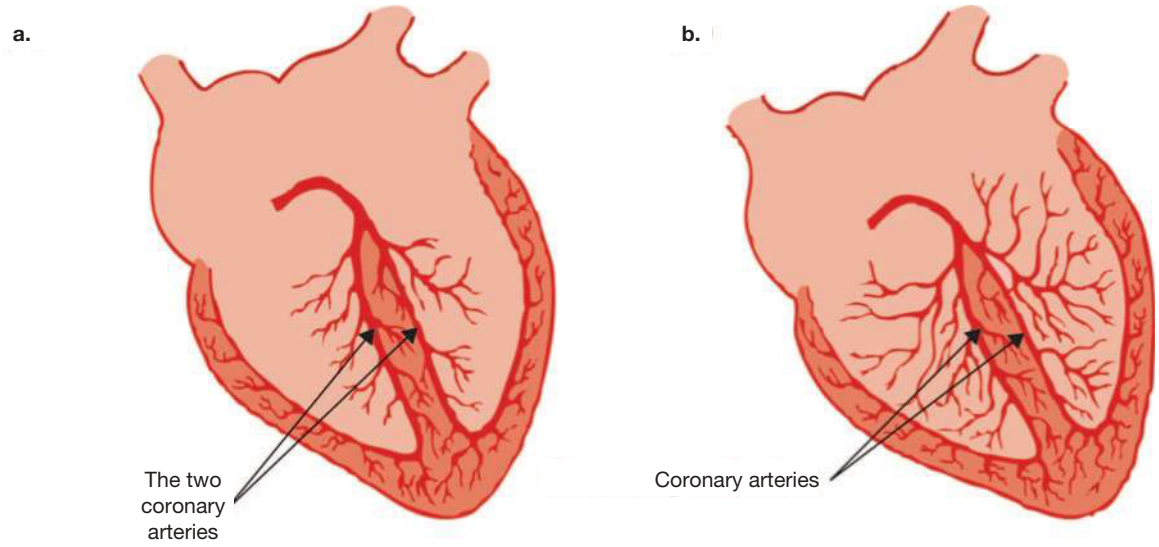
  If a trained athlete had a stroke volume of 100 mL instead of the average 70 mL and, like any other person at rest, they need only 5000 mL of blood to circulate, what would their resting heart rate be?

$$\text{CO} = SV \times \text{heart rate}$$
$$5000 = 100 \times \text{heart rate}$$
$$\text{Heart rate} = \frac{5000}{100}$$
$$= 50 \text{ beats per minute}$$

The resting heart rate for the trained athlete would be 50 beats per minute, which is lower than for the average person.

- *Increased volume of blood and increased amount of haemoglobin*. Long-term training may lead to an increase in total blood volume by up to 25 per cent. In an average adult male, blood volume may increase from 5.25 to 6.6 litres. This will, in turn, lead to an increase in haemoglobin content by up to 24 per cent. The oxygen-carrying ability of the blood will be improved greatly as a result.
- *Increased number of capillaries supplying muscles*. During exercise, the muscles require extra oxygen and other nutrients. Over time, with regular exercise, the capillaries, which supply the muscles with these nutrients, increase in number to service the muscle more efficiently. In trained athletes, the average number of capillaries to each muscle fibre is 5.9; for non-athletes, it is only 4.4.
- *Increased supply of blood to the heart muscle (coronary circulation)*. Like any other muscle, the heart needs a good supply of blood and oxygen. Figure 10.30 shows how exercise increases coronary blood supply. Increased capillarisation, or blood supply, allows the heart to beat more strongly and efficiently during heavy exercise. Importantly, it also decreases the risk of heart attack in later life and, if heart attack does occur, increased coronary circulation decreases the severity of the attack.

FIGURE 10.30 a. Capillarisation (blood supply) to the heart prior to a training program. **b.** Capillarisation is much greater after a long-term training program.



- *Reduced risk of cardiovascular disease*. **Cardiovascular disease** can be divided into two main categories: cardiac (or heart) disease, which involves blockages in the coronary arteries and causes heart attacks, and vascular disease, which refers to problems with blood vessels. These problems include:
  - high blood pressure, which places stress on the heart
  - stroke, where the blood supply to the brain is restricted, causing brain damage and possibly death
  - **arteriosclerosis**, which is the hardening of the artery walls. This may cause high blood pressure, stroke and heart attack.

cardiovascular disease any disease related to the heart and blood vessels, such as stroke, coronary heart disease and vascular disease, including hypertension and atherosclerosis

arteriosclerosis disease of the arteries where deposits build up inside the artery walls and blood flow is restricted

Factors that may lead to cardiovascular disease are called risk factors. The important risk factors to note are the ones you can control. These include:

- blood pressure
- fat intake in your diet
- cholesterol in the blood
- salt intake

- excess weight and obesity
- stress related to work or study
- cigarette smoking
- exercise levels, especially cardiorespiratory exercise.

The risk of **coronary heart disease (CHD)** in people who do not exercise is twice that for people who are active. Physically active people less likely to suffer from heart disease. They are also more likely to survive a heart attack and less likely to suffer from further attacks.

coronary heart disease (CHD) narrowing of the coronary arteries of the heart or complete blockage of the coronary arteries leading to heart attack

Regular cardiorespiratory-type exercise, such as walking, jogging, swimming and cycling for 30 minutes a day, has been shown to:

- reduce blood cholesterol levels
- reduce body weight and therefore the risk of obesity
- reduce work-related stress levels
- reduce and protect against high blood pressure.

By reducing and/or controlling these risk factors, the chance of suffering cardiovascular disease is also significantly reduced.

weblink To learn more about the cardiorespiratory system, follow the **Circulatory system games** weblink in your Online Resources.

DID YOU KNOW?

- The heart beats around 3 billion times in an average person's life.
- The capillaries in the lungs would extend 1600 kilometres if placed end to end.
- It takes about 1 minute for a red blood cell to travel around the whole body.

FIGURE 10.31 Exercise is vital for a healthy cardiovascular system. Medical research has proven that regular cardio exercise reduces blood cholesterol levels and the chance of heart disease.

10.5 ACTIVITIES

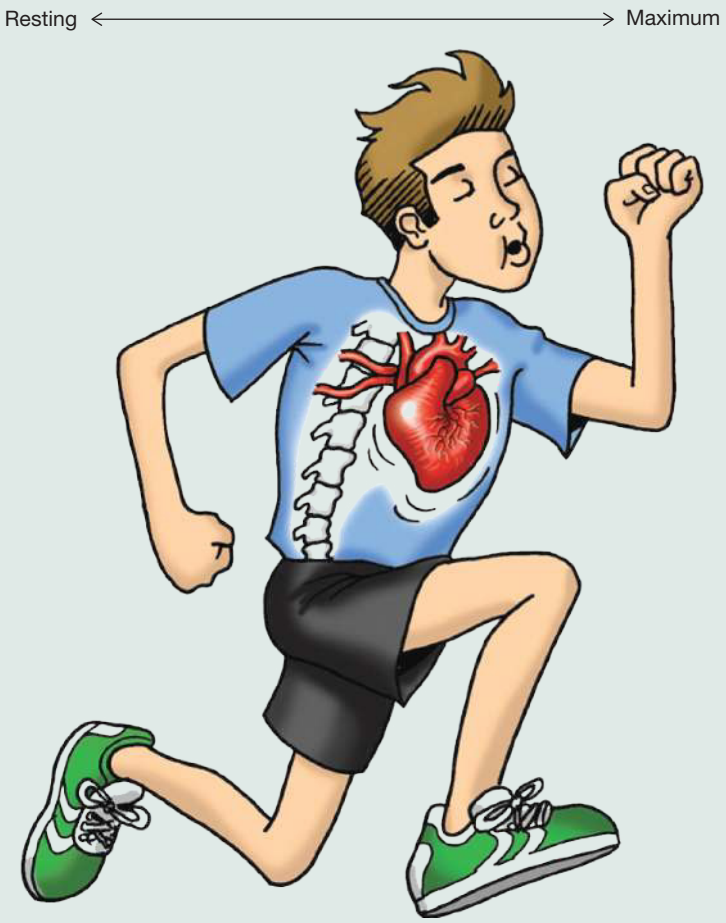
1 Heart rates

a. In pairs, take each other's resting heart rate. Use this heart rate to calculate your stroke volume, assuming your cardiac output is 5000 mL. (Remember, cardiac output = heart rate × stroke volume.)
b. Discuss your results with your partner. Explain why different people in the class have different resting heart rates and different stroke volumes.

2 Racing hearts

On a continuum like the one shown in figure 10.32, place 10 sports or activities by predicting how fast that activity would make your heart beat.

FIGURE 10.32 Vigorous activity such as running increases your heart rate significantly.



10.5 Exercise

10.5 Exercise

Select your pathway

LEVEL 1	LEVEL 2	LEVEL 3
2, 3, 4, 5	1, 6, 7, 8	9, 10

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Check your understanding

1. MC Identify the three types of blood vessels.
   - A. Capillaries
   - B. Veins
   - C. Arteries
   - D. Radia
2. Veins carry oxygenated blood away from the heart to the body cells and have thick, elastic walls to absorb the force of blood being pumped from the heart. True or false?
3. MC Select all possible short-term factors that can affect blood pressure.
   - A. Cigarette smoking
   - B. Body weight
   - C. Exercise
   - D. Body position
4. MC How can a diet high in fat affect the cardiovascular system?
   - A. High-fat diets lead to increased cholesterol levels, which can leave fatty deposits in arteries making it harder for blood to be pumped.
   - B. High-fat diets lead to higher blood pressure.
   - C. High-fat diets can cause arteriosclerosis, which involves a loss of elasticity and hardening of the arteries.
   - D. All of the above
5. MC Resting heart rate/pulse is affected by which of the following factors? Select all options that apply.
   - A. Gender
   - B. Eating
   - C. Age
   - D. Laughing
6. MC Identify the benefits of regular cardiorespiratory-type exercise. Select all options that apply.
   - A. Increases blood cholesterol levels
   - B. Reduces body weight and therefore the risk of obesity
   - C. Reduces and protects against high blood pressure
   - D. Increases work-related stress levels

Apply your understanding

7. **Describe** some of the ways in which the chronic effects of exercise on the cardiovascular system improve athletic performance.
8. **Identify** the role of plasma.
9. **Explain** the difference between systemic circulation and pulmonary circulation.
10. **Determine** the long-term (chronic) effects of exercise.
11. **Determine** the immediate (acute) effects of exercise.

LESSON
10.6 The respiratory system

LEARNING INTENTION

- Describe the functions and structure of the respiratory system and identify the mechanics of breathing.

10.6.1 Our lungs in action

The respiratory system allows our body to breathe, bringing oxygen to the blood and removing carbon dioxide.

On average, a resting person needs to take about 14 breaths per minute to oxygenate the bloodstream and remove carbon dioxide. When that person exercises or performs more strenuous movements, they need to breathe faster and deeper to deliver more oxygen and remove more carbon dioxide. In this way, the respiratory system works in close relation with the cardiovascular system.

FIGURE 10.33 VO_2 max tests measure how efficiently the body uses oxygen.

In this lesson, we will explore:

- the functions of the respiratory system
- how we breathe
- the effects of exercise on the respiratory system
- factors that affect the respiratory system, such as cigarettes and asthma.

ENGAGE

Count the number of breaths you take per minute while standing; repeat while lying down. Record the results in the table below.

Activity	Breaths per minute (15 sec × 4)
Standing	
Lying down	
Immediately after exercise	
1 minute after exercise	
2 minutes after exercise	

Conduct two minutes of strenuous activity, then:

- immediately following the exercise, count the number of breaths taken in 15 seconds (multiply the result by four to record breaths per minute)
- one minute after the exercise, count the number of breaths taken in 15 seconds
- two minutes after the exercise, count the number of breaths taken in 15 seconds.

Record the results for all three time periods in the table also.

doc-14714 Use the questions in the **Exercise and breathing rate** worksheet in your Online Resources to explore the relationship between your breathing rate and exercise.

10.6.2 Functions of the respiratory system

The main functions of the respiratory system are to:

- bring air from the atmosphere into the lungs
- transfer oxygen into the blood

- remove carbon dioxide from the blood
- expel heat and water vapour in the air that is breathed out
- allow the vocal cords to create speech as air is breathed out.

10.6.3 Structure of the respiratory system

The respiratory system has three sections:

- the conducting system; that is, the air passages
- the lungs
- the diaphragm.

DID YOU KNOW?

We lose half a litre of water a day through breathing. This is the water vapour we see when we breathe onto glass.

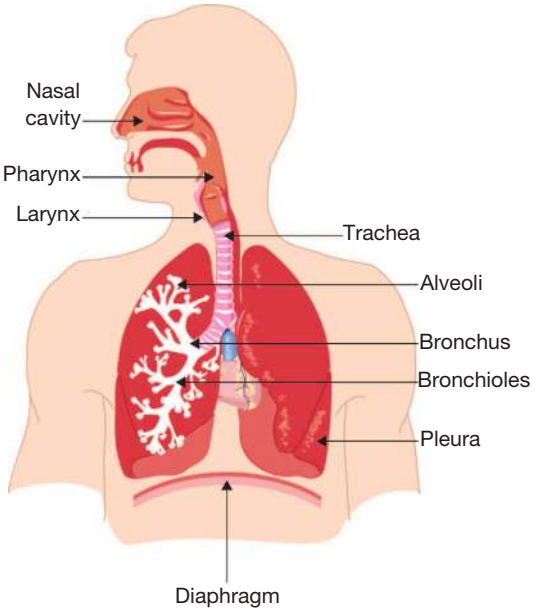
The conducting system

The major elements of the conducting system are listed below. See also figure 10.34.

- *Nasal cavity*. Serves to warm and filter air.
- *Pharynx*. This is the throat, which allows food and air to pass. The air is channelled into the larynx.
- *Larynx*. Commonly known as the 'voice box'. Air passes through the larynx on its way to the trachea. The vocal cords, which are essential for voice production, are inside the larynx.
- *Trachea*. This is the airway through which air passes on its way to the bronchi.
- *Bronchi*. The trachea branches into two bronchi, one for each lung.
- *Bronchioles*. The bronchi divide into two smaller bronchioles, which divide into even smaller bronchioles and so on until the terminal bronchioles are reached.
- *Terminal bronchioles*. The terminal bronchioles branch yet again to form respiratory bronchioles, which also branch to form alveoli or air sacs.
- ***Alveoli***. Microscopic air sacs at the end of the respiratory bronchioles. There are millions of alveoli and each one is surrounded by capillaries. This is where oxygen comes into the blood and carbon dioxide comes out.

alveoli site of exchange in the lungs of oxygen and carbon dioxide to and from the blood

FIGURE 10.34 The respiratory system



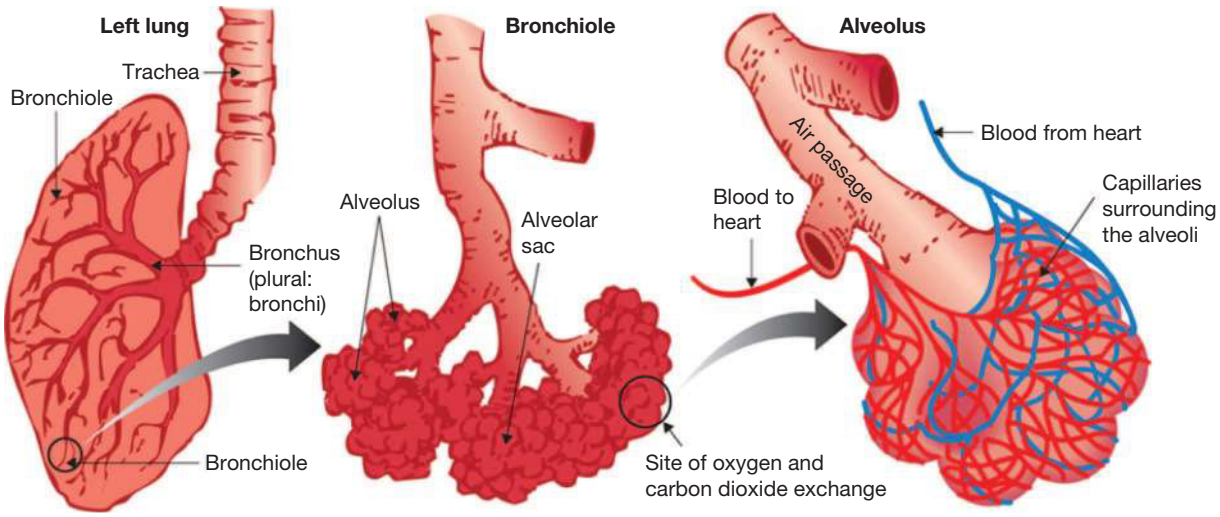
The lungs

The lungs are the major organs of the respiratory system and are located in the chest cavity behind the ribs. They consist of three main parts, as shown in figure 10.35:

- the parts of the conducting system by which outside air reaches the alveoli; that is, the bronchi and bronchioles
- the alveoli
- the pleura.

The pleura is a membrane that covers the lungs. The pleura also attaches to the inside of the chest cavity and the top of the diaphragm. It is a smooth, moist membrane that reduces friction as the lungs expand and contract during the breathing process. The lungs have a spongy look and feel because of the millions of tiny air sacs and bronchioles.

FIGURE 10.35 Microscopic structure of the lung



DID YOU KNOW?

The surface area of the lungs is roughly the same size as a tennis court.

The diaphragm

The diaphragm is an involuntary (smooth) muscle, which expands and contracts to control breathing while we are at rest and sleeping. As the diaphragm moves up and down, the chest cavity decreases and increases in size. This causes breathing. As the chest cavity increases in size, we breathe in. As the chest cavity decreases in size, we breathe out.

weblink

int-6341

To learn more about the respiratory system, use the **Breathe in**, **Oxygen in the bloodstream**, **The respiratory system** and **Inspiration and respiration** weblinks in your Online Resources. Test your knowledge using the **Respiratory system** interactivity in your Online Resources.

10.6.4 The mechanics of breathing

Inspiration: Breathing in

Inspiration is initiated by the diaphragm. When the diaphragm contracts, it moves downwards, enlarging the chest cavity. Deeper inspiration occurs when intercostal muscles move the ribs up and out, further expanding the chest cavity. Air always moves from a high pressure area to a lower one. As the chest cavity expands, the pressure inside it decreases and so the air under higher pressure outside the lungs is sucked in.

inspiration breathing in

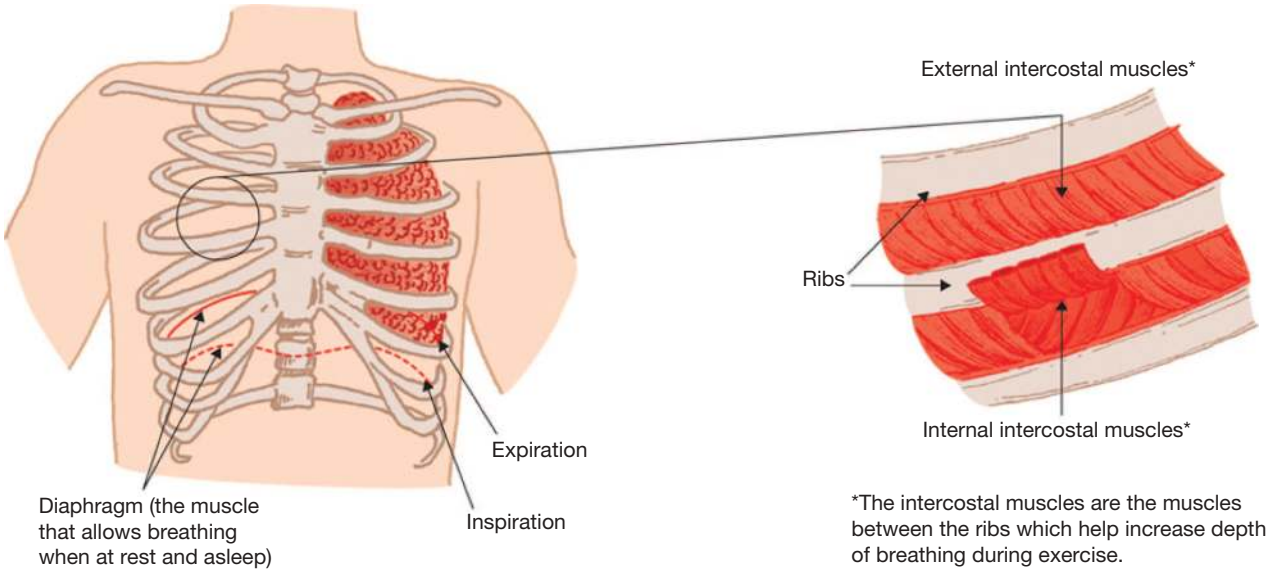
A normal 'breathe-in' during rest for an adult is about half a litre. This is called tidal volume. During heavy exercise, inspiration may increase to as much as four litres of air with each breath.

Expiration: Breathing out

Expiration occurs when the diaphragm relaxes and the chest cavity returns to its smaller 'at rest' state. This is further enhanced by the intercostal muscles, which allow the ribs to return to their normal 'at rest' position, as shown in figure 10.36.

expiration breathing out

FIGURE 10.36 The rib cage and the muscles of breathing



Exchange of gases in the lungs

During inspiration, air enters the lungs and travels into the alveoli. The alveoli are surrounded by capillaries. Both have very thin walls that allow the oxygen to diffuse from the higher pressure area in the alveoli to the lower pressure area in the capillaries. Once in the capillaries, the oxygen attaches to the haemoglobin in the red blood cells.

During expiration, the carbon dioxide in the capillaries is under higher pressure than the air in the alveoli. The carbon dioxide diffuses into the alveoli and is expelled as we breathe out.

10.6.5 Other features of the respiratory system

Vital capacity

Vital capacity is an important measure of our respiratory fitness and lung function. It is found by measuring the maximum amount of air you can breathe *out* after breathing *in* a maximum amount of air.

vital capacity maximum amount of air that can be expelled from the lungs after a maximal inspiration

Table 10.2 shows the vital capacity readings for children in Australian schools.

Most schools have access to a **dry spirometer**, an instrument into which you blow to measure your vital capacity. Generally, the larger the person, the higher the volume of the vital capacity. Large rib cages and chest cavities lead to large vital capacities. Because males generally have larger builds than females, they have, on average, larger vital capacities.

dry spirometer instrument used to measure vital lung capacity

FIGURE 10.37 Spirometers are used to measure vital capacity

Vital capacity can be increased, but only slightly, through exercise or training. However, by regularly exercising we are able to maintain vital capacity at its maximum level. At the same time, we keep our lungs supple and elastic, and help to remove any pollutants, such as tar, which may enter our lungs and become trapped in the tiny alveoli air sacs. Asthma and cigarette smoking are two factors that can greatly affect a person's vital capacity.

TABLE 10.2 Vital capacity readings for 12- and 15-year-old boys and girls in Australian schools

Ranking	Vital capacity reading (litres)			
	Boys (age in years)		Girls (age in years)	
	12	15	12	15
Top 10%	3.65	5.5	3.6	4.25
Mid-range	3.0	4.5	2.9	3.6
Lowest range	2.15	3.15	2.05	2.6

DISCUSS

a. Create a list of behaviours that have a negative impact on the body's cardiovascular or respiratory systems.
b. Discuss the negative impacts on the body.
c. Explain why people, despite the negative impacts, may choose to engage in these behaviours.
d. Outline some strategies to overcome the reasons discussed in part c.

DID YOU KNOW?

The highest recorded 'sneeze speed' is 165 km/h.

VO_2 maximum

VO_2 maximum is also referred to as cardiorespiratory endurance, aerobic capacity or maximum oxygen uptake. It is a measure of the maximum amount of oxygen that your body can use for each kilogram of body weight in one minute. More simply, it measures how much oxygen your muscles can use to produce work; the more oxygen you can use, the more work you can do. To produce energy for cardiorespiratory work, our muscles need a large supply of oxygen, and must be able to burn this oxygen efficiently.

VO_2 maximum maximum amount of oxygen that can be used by the muscles to produce work (usually measured in millilitres per kilogram of body weight per minute)

VO_2 maximum is the best way of measuring the efficiency of your cardiovascular, respiratory and muscular systems under exercise conditions, such as when running, swimming or cycling. Tests used to measure VO_2 maximum are:

- 12-minute walk/run
- 7-minute cycle ergometer test
- treadmill tests
- 1.6-kilometre run
- 20-metre beep test.

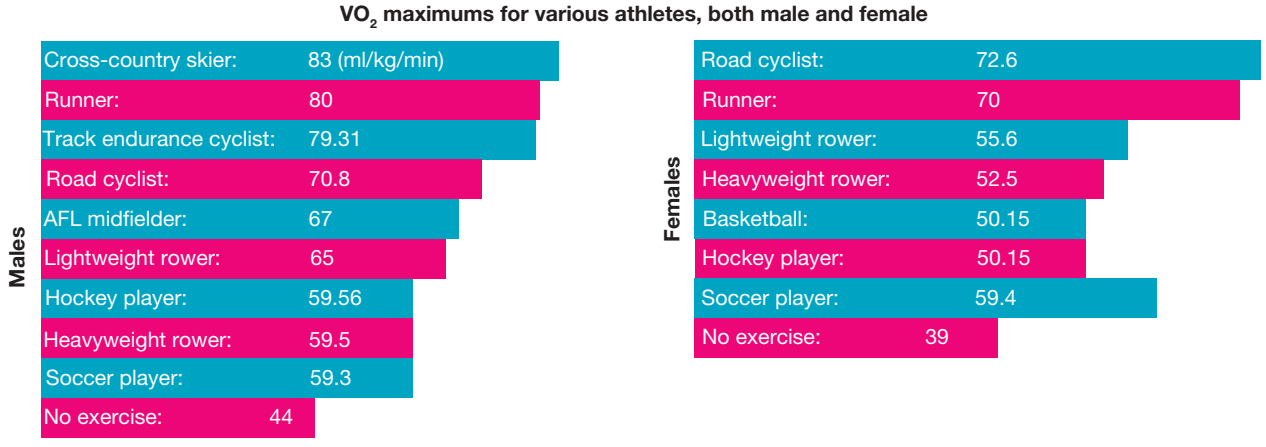
The highest VO_2 maximum ever recorded is 94 mL/kg/min; that is, 94 mL of oxygen for each kilogram of body weight each minute — this was for an adult male cross-country skier. The highest recorded level for a female is 74 mL/kg/min.

The average VO_2 maximum for untrained males is 42–46 mL/kg/min; the average VO_2 maximum for untrained females is 30–39 mL/kg/min.

VO_2 maximum can be improved by up to 30 per cent if a regular cardiorespiratory training program is undertaken (see topic 5 for example programs). This improvement is brought about when:

- the heart increases its ability to circulate blood
- the lungs increase their ability to ventilate air
- the muscles increase their ability to produce energy for work.

FIGURE 10.38 Measuring your fitness using VO_2 maximum levels as an indicator



Source: Victorian Institute of Sport.

Table 10.3 details how each of the three systems — respiratory, cardiovascular and muscular — may help develop a good VO_2 maximum.

TABLE 10.3 Function of body systems for achieving a good VO_2 maximum

System		Function in achieving a good VO_2 maximum
Respiratory	• Vital capacity	• Efficient lung ventilation — inspiration and expiration
	• Alveoli	• Exchange of O_2 and CO_2 with blood in capillaries
Cardiovascular	• Heart	• Powerful heartbeat • High stroke volume • High cardiac output (heart rate × stroke volume)
	• Arteries	• Elasticity of walls • Clear of fatty deposits
	• Capillaries	• Large network to heart and all the muscles • Easy and plentiful exchange of O_2 and CO_2 with muscles and lungs
	• Veins	• Healthy one-way valves and **muscle pump effect** by skeletal muscles
	• Blood	• Good supply of haemoglobin to transport O_2 and CO_2
Muscular	• Skeletal muscle	• Good development and hypertrophy, with large supply of blood from capillaries
	• Myoglobin	• Good supply to combine with oxygen to produce energy
	• Glycogen	• Good supply to attract oxygen into the muscle
	• Mitochondria	• Lots of these required at the site where O_2 and glycogen combine to produce energy

DID YOU KNOW?

Breathing rates are generally faster in children and women than in men.

muscle pump effect the effect the skeletal muscles have on blood flow in the veins. As the muscles contract, they squeeze against the veins, forcing blood to travel towards the heart.

10.6 ACTIVITIES

1 Breathing techniques

a. Identify what kinds of images could be used to enhance an anti-smoking or anti-vaping campaign.

b. **i.** Use the internet and other sources to research the Alexander technique for breathing and how it can improve an asthmatic's quality of life.

ii. Write a short report.

iii. Discuss your findings with a partner.

2 Dangers of smoking

a. Research the effects of smoking on the respiratory system.

b. **i.** Using digital software, produce a pamphlet about smoking that could be used in an anti-smoking campaign such as Quit.

ii. Include facts about smoking, its negative impact on the respiratory system and ways to quit.

iii. Use the **Quit** weblink in your Online Resources to help you with your research.

weblink

3 Vital capacity

doc-14716

Use the **Vital capacity** worksheet in your Online Resources to complete a practical activity.

10.6 Exercise

10.6 Exercise

Select your pathway

LEVEL 1	LEVEL 2	LEVEL 3
1, 2, 3, 4	5, 7, 9	6, 8, 10

These questions are even better in jacPLUS!

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Check your understanding

1. The _____ contracts and relaxes to increase and decrease the pleural cavity (chest), allowing the lungs to inflate and deflate.
2. MC The intercostal muscles assist with:
   - **A.** the expansion and contraction of the chest walls.
   - **B.** transferring oxygen into the blood.
   - **C.** removing carbon dioxide from the blood.
   - **D.** bringing air from the atmosphere into the lungs.

3. MC Expiration means:
   - A. to allow the vocal cords to create speech as air is breathed out.
   - B. to bring air into the lungs.
   - C. to transfer oxygen into the blood.
   - D. to breathe out waste gases such as carbon dioxide.
4. _____ means to breathe in and deliver oxygen to the lungs.
5. MC Choose the correct statement about VO_2 maximums.
   - A. On average, males have higher VO_2 maximums because they have greater blood volume and greater lung capacity.
   - B. On average, females have higher VO_2 maximums because they have greater blood volume and greater lung capacity.
   - C. On average, females have higher VO_2 maximums because they have less blood volume and less lung capacity.
   - D. On average, males and females have equal VO_2 maximums.

Apply your understanding

6. **Describe** what vital capacity is and explain how it can be improved.
7. **Identify** which type of sportspeople have the highest VO_2 maximums.
8. **Explain** what alveoli are and **describe** their role.
9. **Describe** how the diaphragm moves.
10. **Identify** the steps in the exchange of gases in the lungs.

LESSON
10.7 Review

Hey students! Now that it's time to revise this topic, go online to:

Review your results

Watch teacher-led videos

Practise questions with immediate feedback

Find all this and MORE in jacPLUS

10.7.1 What have I learned?

- The body systems play a key role in maintaining good health; the skeletal, muscular, cardiovascular and respiratory systems work together to produce physical activity.
- The skeletal system provides a framework for the body, allowing movement and protecting vital organs.
- The muscular system allows us to move, maintain our posture and maintain body functions such as blood circulation, digestion and breathing.
- Various types of bone, joint, connective tissue, muscle and muscle contraction play a role in creating movement.
- The cardiovascular system consists of the heart, the blood vessels and blood. It allows blood, water, oxygen, nutrients and wastes to be transported around the body.
- There is a strong relationship between exercise and the cardiovascular system, particularly in regards to blood pressure and heart health.
- The respiratory system allows the body to breathe; it brings oxygen to the blood and removes carbon dioxide.
- Vital capacity is a measure of respiratory fitness and lung function. It is found by measuring the maximum amount of air a person can breathe out after breathing in a maximum amount of air.
- VO_2 maximum or aerobic capacity is a measure of the maximum amount of oxygen that a person's body can use for each kilogram of body weight in one minute.

ESSENTIAL QUESTION REVIEWED

How do the body systems work together to produce movement?

Evaluate your initial response to the essential question now that you have studied the topic.

on Resources

Interactivity Crossword (int-5394)

10.7.2 Key terms

agonist prime mover; the muscle that creates movement
alveoli site of exchange in the lungs of oxygen and carbon dioxide to and from the blood
antagonist muscle that relaxes to allow movement to take place
aorta main artery of the body; delivers blood from the left ventricle of the heart
arteries blood vessels that carry blood away from the heart; they have thick, elastic walls
arteriosclerosis disease of the arteries where deposits build up inside the artery walls and blood flow is restricted
atrophy when the circumference of a muscle becomes smaller due to lack of use

blood pressure measure of how much force is created to push the blood through the blood vessels
calcium mineral nutrient required for bone growth and prevention of osteoporosis
capillaries the smallest blood vessels
cardiac muscle muscle of the heart
cardiac output volume of blood pumped around the body in one minute. Cardiac output is measured by stroke volume × heart rate
cardiovascular disease any disease related to the heart and blood vessels, such as stroke, coronary heart disease and vascular disease, including hypertension and atherosclerosis
cartilage tissue that protects bones at the joints from rubbing against one another
coronary arteries arteries that supply blood to the heart muscle
coronary heart disease (CHD) narrowing of the coronary arteries of the heart or complete blockage of the coronary arteries leading to heart attack
diastolic blood pressure the pressure of blood in the arteries as the heart relaxes
dry spirometer instrument used to measure vital lung capacity
expiration breathing out
fast twitch muscle fibres white muscle fibres that are suited to performing anaerobic activity
flexion the movement that decreases the angle of a joint; for example, bending the elbow
haemoglobin substance in the blood that transports oxygen to the body cells
heart muscular pump responsible for pumping blood around the cardiovascular system
high blood pressure also called hypertension; a major risk factor in coronary heart disease; measured in and expressed as systolic pressure over diastolic pressure
hypertrophy when the circumference of a muscle becomes larger as a result of exercise
inspiration breathing in
isometric when a muscle produces force without changing length
isotonic when a muscle produces force while changing length, either lengthening or shortening
ligaments straps of slightly elastic tissue that cross over joints, attaching bone to bone and providing stability
muscle pump effect the effect the skeletal muscles have on blood flow in the veins. As the muscles contract, they squeeze against the veins, forcing blood to travel towards the heart.
osteoarthritis joint cartilage degenerates and causes pain
osteoporosis calcium deposits in the bone diminish, causing a decrease in bone density, increased risk of fracture and curvature of the spine
plasma clear fluid contained in blood that transports red and white blood cells, nutrients and waste
platelets cells in blood that cause it to clot when blood vessels are damaged; produced in bone marrow
pulmonary circulation blood from the heart is pumped to the lungs for oxygenation and then transported back to the heart
radial pulse pulse on the thumb side of the wrist used to measure heart rate
reciprocal inhibition pair of muscles working together; the antagonist muscle relaxes and the agonist muscle contracts to create movement
red blood cells comprise 99 per cent of all blood cells and carry oxygen and carbon dioxide to and from the cells and muscles; contain haemoglobin
resting heart rate the number of heartbeats per minute while at rest
septum muscular wall separating the right and left sides of the heart into two pumps
skeletal muscle all the muscles that pull on bones to create movement
slow twitch muscle fibres red muscle fibres that are suited to performing aerobic activity
smooth muscle involuntary muscle that contracts and relaxes without conscious thought
stroke volume volume of blood pumped from the left ventricle of the heart in one beat
synovial fluid lubricating substance found in synovial joints
synovial joints freely movable joints that have cartilage, ligaments and synovial fluid; for example, the knee or elbow
systemic circulation blood from the heart circulates throughout the arteries and veins of the body and then returns to the heart
systolic blood pressure the pressure of blood in the arteries as the left ventricle of the heart contracts
tendons attach muscles to bones
vascular system the network of blood vessels, comprising arteries, capillaries and veins
veins blood vessels that return blood to the heart
ventricles pumping chambers of the heart. The left ventricle pumps blood into the systemic circulation and the right ventricle pumps blood into the pulmonary system

vital capacity maximum amount of air that can be expelled from the lungs after a maximal inspiration
VO_2 maximum maximum amount of oxygen that can be used by the muscles to produce work (usually measured in millilitres per kilogram of body weight per minute)
white blood cells part of the immune system; fight disease-causing organisms by absorbing and digesting them

10.7 Exercise

10.7 Exercise

Select your pathway

LEVEL 1	LEVEL 2	LEVEL 3
1, 2, 3, 4, 5, 6, 7, 8, 9, 10	11, 12, 13	14, 15

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Check your understanding

Identify whether the following statements are true or false.

Statement	True or false
1. Red blood cell production is an important function of the skeletal system.	
2. A vertebra is an example of a flat bone.	
3. Ligaments are important because they provide stability for a joint and prevent dislocation.	
4. A concentric muscular contraction occurs when the muscle lengthens under tension.	
5. If you were to cut a vein, the blood would be bright red and spurt out of the incision.	
6. Capillaries are the smallest blood vessels in the body.	
7. Cardiac output refers to the amount of blood the heart pumps per beat.	
8. Arteriosclerosis is the hardening of the artery walls.	
9. The pharynx is also known as the voice box.	
10. Marathon runners have the highest VO_2 maximum of all athletes.	

Apply your understanding

11. **Identify** three ways the skeletal system provides protection for major organs.
12. **Identify** the three types of muscle and explain their roles.
13. **Describe** the pathway of an oxygen molecule, from the moment it enters the nasal cavity to the moment it reaches the muscles to help produce muscle contraction.
14. **Explain** how the respiratory and cardiovascular systems are interrelated.
15. **Consider** each of the following questions with reference to a sport or activity of your choice.
    a. What are the major muscles used?
    b. Which muscle fibre type is most used?
    c. Which type of muscle contraction is most used?

11 Nutrition for good health

LESSON SEQUENCE

online only

11.1 Overview
11.2 Food nutrients
11.3 Daily energy needs and expenditure
11.4 Factors influencing food choice
11.5 Food models for good health
11.6 Preventing diet-related diseases
11.7 Nutrition for sport and other special dietary needs
11.8 Review

LESSON
11.1 Overview

Hey students! Bring these pages to life online

Watch videos

Engage with interactivities

Answer questions and check results

Find all this and MORE in jacPLUS

11.1.1 The importance of diet

Besides food being delicious and tasty, have you ever considered why we eat food and the importance of nutrition? In this topic, we explore the nutrients in food and how food gives us energy to do all our daily tasks. Our dietary needs also change depending on the exercise we do, so you will discover things you might need to consider to maximise your sports performance. You will also learn what influences Australians to eat in certain ways and how our food choices can cause diet diseases. You will explore some food models that can help make healthy eating easier to understand and follow. Read on to learn about food so you can be your healthiest self!

ESSENTIAL QUESTION

What are healthy nutrition decisions and how can I ensure I make these?

STARTER QUESTIONS

1. What is good nutrition?
2. What do healthy food decisions look like?
3. What influences the nutrition decisions you make?
4. What are the implications of your food decisions?

ALERT!

This topic includes information about food, nutrition, exercise and eating disorders. This content might be distressing for some readers. It is important that you care for your safety and feelings, so if any of this content makes you uncomfortable or is distressing, please seek support. Possible sources of support include:

- a teacher or counsellor
- the Butterfly foundation (1800 33 4673)
- Kids Helpline (1800 55 180)
- your doctor or dietitian.

on Resources

Video eLesson Nutrition for good health (eles-2342)

11.2 Food nutrients

LEARNING INTENTION

- Describe the nutrients we need for optimal health and wellbeing.

11.2.1 Balancing our nutrients

We need seven types of nutrients for optimum physical and mental health. Most foods contain a combination of some or all of the nutrients in varying amounts. Eating a balanced diet means getting the right amount of each nutrient.

ENGAGE

The seven types of nutrients that come from food are:

- carbohydrates
- fats
- vitamins
- protein
- minerals
- dietary fibre
- water.

All of these nutrients, in different amounts, are needed for good health, and each of them has a different function to perform. Daily energy needs are supplied by two of these nutrients: carbohydrates and fats. Generally, the balance between the energy we use and the carbohydrates and fats we eat is what determines our body weight.

How much do you know about nutrition? For each letter of the alphabet, choose a food, and discuss what you know about that food and which nutrients it provides. Test your knowledge both before and after this lesson to see how much you have improved.

FIGURE 11.1 Sensible shopping is an important precursor for a nutritious diet.

on Resources

Interactivity A healthy diet (int-5515)

FIGURE 11.2 Which of these is a healthy snack choice?

11.2.2 Carbohydrates

The main job of **carbohydrates** is to provide a source of energy for the body to work. Carbohydrates include all the **starches** and **sugars** we consume. Starch is found mainly in foods such as bread, cereals, pasta and rice. Sugars include table sugar, honey and **fructose**.

Carbohydrates are often classified according to the **GI index**. The GI index gives an indication of the rate at which carbohydrates are broken down and absorbed into the bloodstream. Foods are ranked from 0 to 100. **High GI foods** are broken down and absorbed quickly and have an immediate effect on blood glucose levels. Examples of high GI foods include:

- dates
- lollies
- potatoes
- white bread.

Low GI foods are broken down and absorbed slowly, so they have a more gradual and sustained effect on blood glucose levels. Examples of low GI foods include:

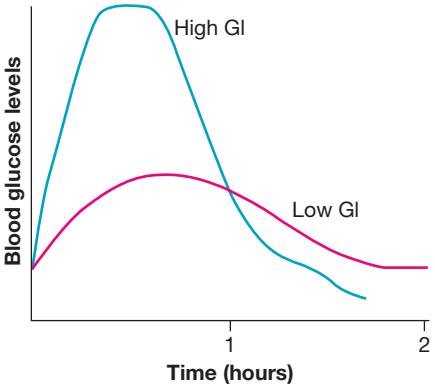
- milk
- porridge
- lentils
- grainy breads
- apples
- low fat yoghurt.

For good health most of our carbohydrate intake should be from low GI foods. Eating too much high GI foods is closely linked to increased risk of obesity and type 2 diabetes.

Carbohydrates are stored as **glycogen** in the body (muscles and liver). The muscles would not be able to perform without glycogen, so it is important that it is replenished after strenuous exercise.

Carbohydrates (particularly the low GI variety) should constitute 45–65 per cent of your total food intake.

FIGURE 11.3 Comparing the effects on blood sugar of low and high GI foods



carbohydrates one of the key food nutrients; should comprise 45–65 per cent of the total diet; provides quick release energy and is stored as glycogen in the muscles

starches form of complex carbohydrate found mainly in bread, cereal, pasta and rice

sugars simple carbohydrate found in fruit, honey, confectionery and soft drink; sugars have a high glycaemic index

fructose simple carbohydrate found as sugar in fruit

GI index a ranking of carbohydrates from 0 to 100 according to their effect on blood glucose levels

high GI foods foods ranked higher than 55; have an immediate effect on blood glucose levels

low GI foods foods ranked less than 55; have a gradual and sustained effect on blood glucose levels

glycogen stored form of glucose found in the muscles and liver; used as a source of fuel for both aerobic and anaerobic energy production

dietary fat a nutrient in food and an essential ingredient of a balanced diet; should comprise 20–35 per cent of daily food intake

body fat expressed as a percentage of total body weight; can be measured in a number of ways including skin folds and underwater weighing

11.2.3 Fat

There are two types of fat that need to be clearly distinguished: **dietary fat** and **body fat**.

Dietary fat is fat that is eaten, and can be found in foods such as butter, margarine, olive oil and cream. We need a small amount of dietary fat for good health. Some fatty acids cannot be made in the body and some contain fat-soluble vitamins. However, most Australians eat far too much dietary fat.

Unfortunately, much of our dietary fat comes from 'bad fats' — saturated and trans fats. These are found in high amounts in many processed foods, fast foods, cakes and meats. Excessive intake of these fats is linked to increased risk of obesity, high blood pressure and heart disease.

However, there are ‘good fats’ — mono and polyunsaturated fats. These are found in plant-based oils, nuts, avocados and some fish. These fats can be protective against high blood pressure and heart disease.

Body fat is the body’s way of storing excess dietary fat. We all have body fat and, in fact, it is absolutely healthy and normal to have it. Some body fat is essential to help insulate the body and protect its vital organs. However, eating more food than we need can cause the body to store more fat, which can lead to being overweight or obese.

The primary function of dietary fat is to provide energy. However, dietary fat requires more oxygen to burn than carbohydrates, so it is a far less efficient fuel.

For better health, Australians need to reduce their intake of dietary fat, in particular saturated and trans fats, to the recommended 20–35 per cent of total daily food intake. The 2011–2012 National Nutrition and Physical Activity Survey (NNPAS) showed that at the time dietary fat made up 31 per cent of the typical Australian’s daily intake and was predicted to continue increasing.

Some statistics in this topic are taken from the 2011–2012 National Nutrition and Physical Activity Survey (NNPAS). At the time of writing, this is still the latest national survey.

FIGURE 11.4 Saturated and trans fats should only be eaten in small amounts and less often.

11.2.4 Protein

Protein is essential for life and is the basis of our body; it accounts for muscles, hair, skin and blood cells. Enzymes and hormones are made of protein. Protein is also essential for the formation of antibodies — the disease fighters.

Protein is made up of amino acids. Some protein comes from our dietary intake and some is put together by the body. The human body requires eight essential amino acids that must be consumed as food.

Complete proteins contain all the essential amino acids needed by the body, and are found in animal protein — meat, eggs, dairy products, fish and poultry. However, **incomplete proteins** are so named because they lack one or more of the essential amino acids. They are plant proteins, and include those obtained from foods such as beans, peas, nuts and cereals. This has implications for vegetarians, who need to eat a wide variety of food to ensure they receive all essential amino acids. This problem is discussed further later in this topic (see lesson 11.7). Excess protein is not stored as protein and is largely converted to body fat. For most people, protein should make up 10 to 15 per cent of their total daily intake of food.

protein made up of amino acids; found in animal and plant foods; essential for most body functions; should comprise 10–15 per cent of daily food intake

incomplete proteins lack of one or more essential amino acids; found in plants

vitamins organic compounds needed in small quantities to promote growth and maintain body functions

minerals inorganic elements found in food that ensure body functions and structures operate effectively

calcium mineral nutrient required for bone growth and prevention of osteoporosis

iron mineral found in the body; inorganic substance required to assist in transportation of oxygen in the blood; lack of iron can cause anaemia

11.2.5 Vitamins and minerals

Vitamins are organic compounds needed in small quantities to promote growth and maintain life. **Minerals** are inorganic elements that very often work alongside vitamins to help the body function and make sure body structures are maintained. Both vitamins and minerals must be eaten as part of our diet and cannot be made by the body.

Some of the vitamins and minerals that are important for sportspeople are:

- *niacin* — one of the B complex vitamins that combines with other chemicals to extract energy from carbohydrates and fats. The body needs niacin for energy.
- *vitamin D* — cooperates with the mineral **calcium** to make sure that calcium is taken from the small intestine into the bloodstream. This is an example of vitamins and minerals working together. If no vitamin D is present, calcium absorption cannot occur.
- *calcium* — vital for muscle contractions, blood clotting and strong bones. All of these functions are important for the optimum performance of the body.
- **iron** — a mineral essential to the transport and use of oxygen in the body.

FIGURE 11.5 Vitamins such as niacin, thiamine and folate are often added to breakfast cereals to help address nutritional deficiencies.

Storage

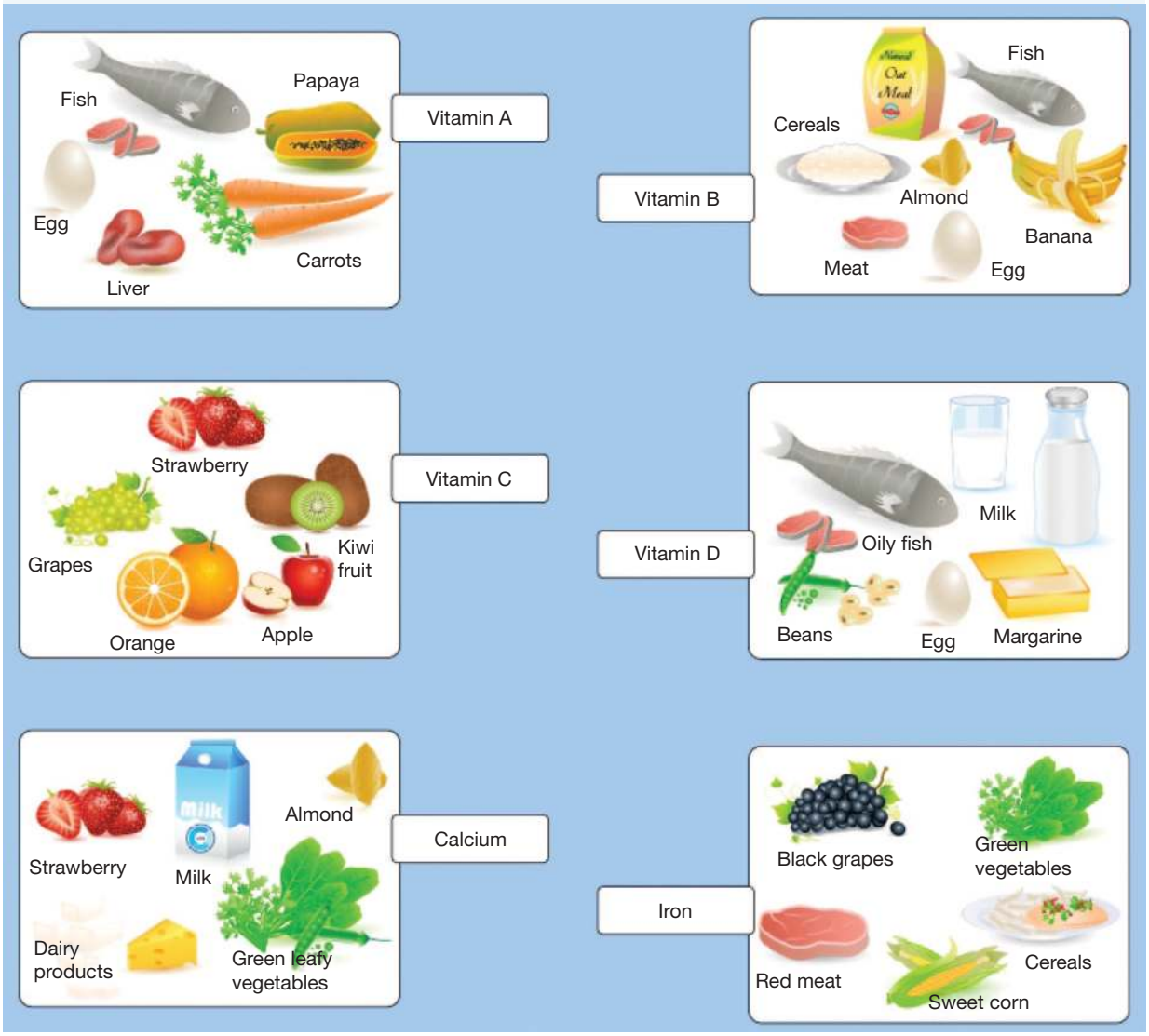
Vitamins are either fat soluble or water soluble. Fat-soluble vitamins can be stored in the body, so a diet should not have too much of them. The fat-soluble vitamins are vitamins A, D, E and K. Water-soluble vitamins must be consumed daily. They are vitamin C and the B complex (which includes vitamins B, B_2, niacin, B_6, B_{12}, folic acid, pantothenic acid and biotin).

Minerals, on the other hand, cannot be stored for long periods. They are excreted daily, so sportspeople in particular should ensure an adequate daily intake. Excessive intake of minerals can lead to toxicity problems, but this is unlikely to occur through dietary intake.

For all people, including sportspeople, a well-balanced diet will ensure that all the vitamins and minerals necessary for good health and optimum performance are provided for the body.

int-6017

FIGURE 11.6 Adequate levels of most vitamins and minerals can be obtained by consuming a balanced diet.



DID YOU KNOW?

Thiamine and folic acid (both B vitamins) are so important to good health that they are mandated additives to wheat flour in both Australia and New Zealand. Thiamine has been an additive since 1991, and folic acid was mandated in 2009.

11.2.6 Dietary fibre

Dietary fibre is the part of a plant that cannot be digested by the body. It is found in fruits, vegetables, nuts, and wholegrain cereals and their products. Foods rich in dietary fibre are also usually rich in other nutrients, and so provide a two-fold benefit.

- Dietary fibre assists in the passage of food through the small and large intestines, aids absorption of nutrients and is important for the efficient excretion of waste products.
- Dietary fibre slows the release of sugars from food, giving a more sustained and even release of energy.
- Dietary fibre adds bulk to your diet, which provides a feeling of **satiety** or fullness. This is vital in helping maintain a healthy weight and avoiding obesity.

dietary fibre part of a plant that cannot be digested by the human body; aids in the digestive process and passage of food through the small and large intestines

satiety a feeling of fullness and absence of hunger

FIGURE 11.7 There are many different sources of fibre.

11.2.7 Water

Water is an essential nutrient that is often underestimated and underconsumed. Water is vital for the efficient functioning of our blood, muscles, bones, digestive system and temperature regulation. Approximately 50–80 per cent of the body is made up of water. However, the body cannot store sufficient water and, therefore, requires daily supplies. The amount required differs for everyone and depends on the weather, what we eat, our body size, our metabolism and our activity levels. For adolescent girls the recommended intake is 6 cups (1.6 L) and for males 7–8 cups (1.9 L), which increases to 8 cups for women (2.1 L) and 9–10 cups for men (2.3 L). About 20 per cent of our daily water intake comes from our food intake. Adequate water intake allows our systems to function efficiently and also leads to increased concentration and sporting performance.

FIGURE 11.8 Water is an essential, and often underrated, nutrient.

11.2 ACTIVITIES

1 Sorting

Create a table showing the major nutrients, their primary function(s) and typical food sources for each nutrient.

2 Label reading

a. Bring the packaging from two different foods (for example, tomato soup or a meat pie) to your next lesson.
b. Look for the nutrition information panel on the packaging.
c. Complete a table to help compare the two products. Use the **Food label guidelines** weblink in the Resources tab to help.
d. State which product is healthier and give your reasons in writing.

weblink

3 Analysing data

Use the **Analysing data** worksheet in the Resources tab to create graphs that demonstrate Australian food habits.

doc-14842

4 Inquiry-based learning

Use the **Y and how chart** worksheet in the Resources tab to reflect on your learning about nutrition.

doc-14843

5 Vitamin deficiency

A lack or deficiency of various vitamins can lead to the development of certain diseases and conditions. Research the following vitamins to find out:

- what role they play in the functioning of the body
- the food sources from which they can be obtained
- what diseases or conditions may develop when they are lacking in the diet.

a. Vitamin A
b. Vitamin B_2 (riboflavin)
c. Vitamin B_6
d. Vitamin B_{12}
e. Vitamin C

11.2 Exercise

11.2 Exercise

Select your pathway

LEVEL 1	LEVEL 2	LEVEL 3
1, 2, 3, 4, 5	6, 7, 8	9, 10

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- Receive immediate feedback
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Check your understanding

1. MC Which of the following statements concerning high and low GI foods are true? Select all possible answers.
   A. High GI foods are broken down and absorbed into the blood stream more quickly than low GI foods.
   B. Low GI foods are broken down and absorbed into the blood stream more quickly than high GI foods.
   C. Both high and low GI foods are carbohydrates.
   D. Low GI foods are carbohydrates but high GI foods are not.
2. MC If fibre cannot be digested by the body, why should you eat it?
   A. It assists in the passage of food through the small and large intestine.
   B. It helps with the absorption of nutrients in the intestine.
   C. It makes faeces soft and easily excreted.
   D. All of the above

3. MC Which of the following meals contains the most fibre?
   A. Salmon B. Beef steak C. Poached eggs D. A bowl of muesli
4. MC Select the response to correctly finish this sentence: Protein ...
   A. is made up of amino acids. B. is not found in dairy products.
   C. is only found in meat. D. should make up 50–65% of your total intake.
5. True or false. Fat is essential for the body.

Apply your understanding

6. **Draw** a picture of a meal that includes fibre rich foods.
7. **Explain** what nutrient your friend Imran could consume more of if he is complaining of tiredness and mainly eats meat and dairy.
8. **Determine** why someone would eat a high protein diet.
9. **Evaluate** if 'bad foods' exist.
10. **Evaluate** your typical daily food intake. Rank the nutrients in your diet from most eaten to least eaten. **Discuss** any implications of this.

11.3 Daily energy needs and expenditure

LEARNING INTENTION

- Explain energy systems and the role of energy during different activities.
- Outline energy balance in relation to healthy weight management.
- Describe human energy requirements.

11.3.1 Why we need energy

Our bodies convert the food we eat into energy by using digestion and other chemical reactions that are part of human metabolism. Energy is required for basic functions such as breathing, keeping the heart beating and digesting food. It is also required for the performance of work and physical activity.

ENGAGE

We get our energy from the food we eat. In order to maintain a healthy weight, we should consume about the same amount of energy as we use in our daily life.

List all the activities you perform daily that require energy, and then rank the activities in terms of the amount of energy required. Also consider your daily energy intake. In pairs, discuss if you think your daily energy intake is equal to, greater than or less than daily energy requirements from activity.

FIGURE 11.9 Our bodies are constantly using energy, even for basic functions.

11.3.2 The kilojoule

The **kilojoule** is a measure of energy. It can be used to tell us how much energy is contained in food and drink, and can also measure the amount of energy used in physical activities and exercise. It is the standard metric measurement of energy. Table 11.1 gives the kilojoule measures for carbohydrates, fat and protein.

kilojoule measure of the energy contained in foods; the standard metric measurement of energy

TABLE 11.1 Kilojoule measure of the various energy nutrients

Nutrient	Kilojoules per gram
Carbohydrates	16
Fat	37
Protein	17

11.3.3 Energy systems

The body converts the food we eat into a form which can be used to produce muscle contraction and create movement. The two basic energy systems are the anaerobic system (which can be broken down into the ATP–CP system and the anaerobic glycolysis system) and the aerobic system. The main principle is that different physical activities rely on different energy systems. For example, the 100-metre sprint uses the anaerobic energy system, while the 5000-metre distance event uses the aerobic energy system. One event is completed very quickly and the other takes a lot longer; therefore, the energy is delivered differently. Longer, slower activities such as jogging, cycling and swimming use the aerobic energy system, which draws on fats and carbohydrates for energy production.

TABLE 11.2 Energy systems and physical activity

Energy system	Component of fitness	Intensity	Activities or sports
Anaerobic	• Muscular strength • Power • Agility • Speed • Reaction time	High (greater than 85 per cent)	• 100-metre sprint • Shot-put • High jump • Long jump • Weightlifting • Baseball bat swing • Tennis serve • Soccer (goalie)
Aerobic	• Local muscular endurance • Cardiorespiratory endurance	Sub-maximal (less than 85 per cent)	• Distance running • Road cycling • Distance swimming • AFL midfield

Anaerobic energy

The anaerobic energy system uses fuel stored in the muscle cells and liver. The fuel comes from carbohydrates and sugars that are broken down into stored glycogen.

FIGURE 11.10 Australian athlete Jana Pittman winning a hurdle event. This requires anaerobic energy.

Aerobic energy system

The aerobic energy system uses carbohydrates and fats to produce the energy that muscles need to perform sub-maximal exercise over a long duration. Carbohydrates are the preferred fuel source in aerobic activity that is 65 per cent or more of maximal intensity. Low GI carbohydrates such as cereals, breads and pasta are broken down and stored as glycogen for the best source of fuel for energy production.

DID YOU KNOW?

The body can store only a certain amount of glycogen, around 60–90 minutes' worth. After this the body requires more glycogen to maintain efforts or it will increase its use of fats.

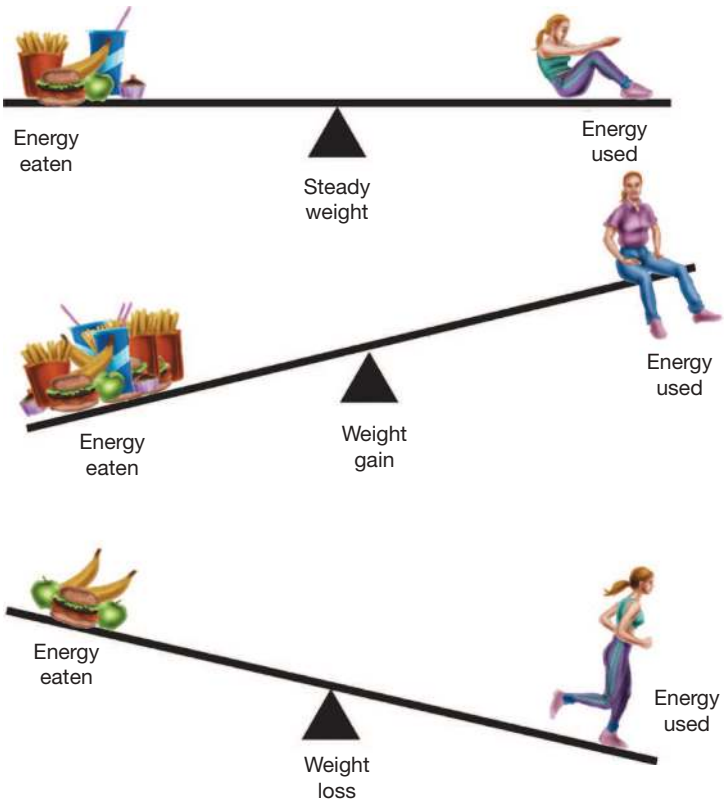
FIGURE 11.11 A long-distance runner such as Benita Johnson will use a different energy system to a sprinter. She has a well-trained aerobic energy system.

11.3.4 Energy balance

Energy balance refers to balancing our energy input (the food we eat) and our energy output (our exercise and general living). In order to maintain weight, we need to balance this input and output, as shown in the following figure.

int-6104

FIGURE 11.12 In order to maintain weight, a balance between input and output is needed.



When more food (energy) is consumed than is used or required, the extra energy is stored as body fat and weight increases. This is referred to as a **positive energy balance**. If less food (energy) is consumed than is used or required, the body converts body fat to energy and weight decreases. This is known as a **negative energy balance**.

Various problems are associated with the positive energy balance that occurs when kilojoule input is greater than kilojoule output over a long period of time. These include being overweight and obese. Similarly, problems are also associated with negative energy balance, which occurs when kilojoule intake is less than required. When you don't consume enough energy, hair loss, fatigue and lack of concentration can occur.

11.3.5 Healthy weight range

A range of tests or measurements are used to calculate 'ideal' weight. One of the most well known methods is measuring your **body mass index (BMI)**.

positive energy balance amount of kilojoules used during daily activity is less than the amount eaten; leads to weight increase

negative energy balance amount of kilojoules used during daily activity is greater than the amount eaten; leads to weight decrease

body mass index (BMI) an indirect way of measuring overweight and obesity by expressing body weight in relation to height

It's important to remember that height/weight charts and body mass index (BMI) tables are not the only indicator of your healthy weight range; in fact, sometimes they can be misleading. Height/weight charts and BMI tables are based on the average weight of a sample of the population; they are not ideal weights for every situation and every person. For athletes particularly, these tables may inform them that they are overweight when in fact they are not. The tables don't measure fat specifically. They weigh everything we are — water, bone, muscle and fat. Athletes usually have a higher percentage of muscle than the average population, and because muscle weighs more than fat, the tables can incorrectly tell them they are overweight. Therefore, athletes need to have their levels of fat measured by other means. The skinfold test, as shown, is probably the most common.

FIGURE 11.13 Skinfold calipers are used to measure the skinfolds of athletes.

11.3.6 Energy requirements and expenditure

Have you ever noticed that after you have been studying for a while or done some vigorous physical activity, you are hungry and lacking in energy? This happens because your body has used energy to help you complete those activities. Feeling that hunger cue is a signal that you are in a negative energy balance and you need to re-fuel to rebalance your energy, as represented by the perfectly balanced see-saw shown in figure 11.12. It is essential that you replenish the energy you have lost until you start feeling energised or full so you have all the energy you need to continue.

How much energy you use when exercising depends on a number of factors, including:

- your weight
- how long you exercise for
- the intensity of that exercise
- which energy system you are using
- how efficiently you use that system.

The amount of energy used in team sports is even harder to estimate, because each position may use a different amount of energy. For example, a netball player in centre will do more running in an hour than the goal shooter. Because we all lose different amounts of energy, it is important that we listen to our own bodies and eat the amount of food our own bodies need.

DID YOU KNOW?

You are likely to perform better in school and have higher levels of emotional health and wellbeing when you consume the right amount of food to meet your energy needs.

11.3 ACTIVITIES

1 Case studies

doc-14844

Read the **Case studies** worksheet in the Resources tab and answer the questions.

2 Skipping challenge

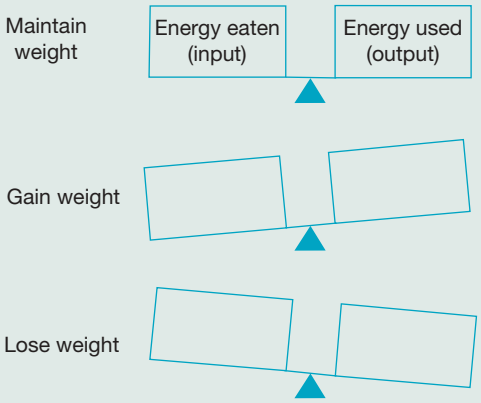
a. Using a skipping rope, complete as many skips as you can in one minute.
b. Record how you felt after you'd skipped for one minute.
c. Using a skipping rope, skip continuously for three minutes.
d. Record how you felt after three minutes of skipping.
e. Repeat steps 1–4, but run instead of skipping.
f. Discuss in pairs how your energy balance has changed as a result of doing this activity.

3 Energy cost

a. Pick one low intensity exercise and one high intensity exercise, and perform both for 5 minutes each.
b. At the end of each activity, write a few sentences about how you felt, including:
    i. how hard you were breathing
    ii. your pulse rate.
c. Discuss how each activity affected your energy balance differently.

4 Scales

Complete the following diagrams by drawing the correct box on either side of the scales.



5 Helping your peers to re-fuel

doc-40630

Use the **Helping your peers to re-fuel** worksheet in the Resources tab to assist you in creating a poster to help your friends replenish their energy after playing sport.

11.3 Exercise

11.3 Exercise

Select your pathway

LEVEL 1	LEVEL 2	LEVEL 3
1, 2, 3, 4, 5	6, 7, 8	9, 10

These questions are even better in jacPLUS!

- Receive immediate feedback
- Access sample responses
- Track results and progress

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Check your understanding

1. MC Which functions of the body require energy? Select all possible answers.
   - A. Breathing
   - B. Jogging
   - C. Sleeping
   - D. Keeping the heart beating
   - E. Eating
   - F. Cycling
2. MC In what order are nutrients used as energy sources within the body?
   - A. Fat, protein, glycogen
   - B. Protein, fat, glycogen
   - C. Fat, glycogen, protein
   - D. Glycogen, fat, protein
3. MC Which nutrients, if consumed in excess quantities, are converted to body fat?
   - A. Vitamins
   - B. Carbohydrates
   - C. Minerals
   - D. Fibre

4. True or false? After exercising we need to replenish the energy we lost.
5. True or false? Everyone on a football team will need to eat the same amount of food after a game to feel re-energised.

Apply your understanding

6. **State** two ways, other than simply decreasing food intake, to address a positive energy balance.
7. **Explain** energy balance.
8. **Outline** the difference between the aerobic and anaerobic energy systems.
9. **Justify** why a doctor might not choose to use BMI to predict if one of her patients is healthy.
10. **Create** a video, song, poem or poster that educates people about the dangers of positive or negative energy balance. You should explain what energy balance is and some conditions that can occur as a result of your chosen type of energy balance.

11.4 Factors influencing food choice

LEARNING INTENTION

- State the dietary habits of adolescents in Australia.
- Describe sociocultural factors that influence food habits.
- Outline how to make healthy food choices.

11.4.1 The foods we choose to eat are the result of many influences

The foods we choose to eat are the result of many influences. Some of these influences, such as advertising or culture, are easy to identify. Others, however, are more subtle. How do technological or socioeconomic factors affect your food choice?

ENGAGE

We all need to eat food in order to satisfy our hunger and sustain our bodies. The foods we choose depend considerably on our family, our personal likes and dislikes, and the way in which certain foods make us feel. Other factors, such as time, social activity and routine, also influence our personal choices.

Personal food requirements also differ according to age, gender and special circumstances. For example, pregnant women, the elderly and athletes all have special food needs. These needs are discussed in greater detail later in this topic.

In small groups, discuss each of the following advertising slogans:

- Subway, eat fresh
- Red Bull gives you wings.

Think of as many food and drink slogans as you can. As a class, compile a list. Then discuss:

- the types of foods being advertised
- the intended market
- suggestions for disclaimers or additional messages needed in the advertisements to give a more balanced view of the products.

FIGURE 11.14 What we are fed as a baby can influence the types of food we like as an adolescent.

DID YOU KNOW?

On average, Australians eat restaurant food four times a week.

11.4.2 What Australians are eating

Data from the 2017–2018 Australian Institute of Health and Welfare report found that young people aged between 15 and 24 years old reported the following:

- 69 per cent usually consumed sugar-sweetened drinks and/or diet drinks at least once a week.
- 33 per cent consumed one serve of fruit a day, 12 per cent ate less than one serve and 6 per cent did not eat any fruit
- 30 per cent consumed one serve of vegetables a day, 7.6 per cent ate less than one serve and 1.2 per cent ate no vegetables at all.

FIGURE 11.15 Adolescent food choices are not always healthy, especially a regular part of the diet.

11.4.3 Food habits of adolescents

Some adolescent food intake facts include the following.

- 15 per cent of males and 25 per cent of females regularly skip breakfast.
- Snacks provide approximately 25 per cent of total energy intake.
- Most snacks are high in fat or sugar.
- 25 per cent of the energy intake of Australian adolescents comes from sources such as soft drinks, takeaway foods, cakes and biscuits.
- 40 per cent of males and 47 per cent of females have a calcium intake of less than the **recommended dietary intake (RDI)**.
- 29 per cent of females have a daily iron intake of less than the RDI.
- 34 per cent of females and 13 per cent of males diet to lose weight.

recommended dietary intake (RDI) provides recommendation for the daily intake of all nutrients; these change for various age groups and stages of growth

TABLE 11.3 Factors affecting the food habits of adolescents

Sociocultural	Physical	Psychological	Political	Economic
• Customs • Social norms • Family habits • Food taboos • Peer group pressure • Advertising • Lifestyle • Educational level • Religious beliefs • Social media	• Appetite (hunger, thirst) • Tastes • Availability of foods • New technology • Seasonality of foods • Physical demands placed on the body (e.g. illness, growth)	• Comfort eating • Eating as a way of dealing with boredom and mood changes • Asserting independence, personal dislikes and likes • Self-image • Body image	• Pricing policies (e.g. government taxes on alcohol) • Marketing	• Income • Price • Time costs

11.4.4 Sociocultural factors influencing food habits

Educational levels

Knowledge is a very powerful tool in terms of changing behaviour, including maintaining a healthy diet. Many studies have linked lower levels of education to poor diet and many diet-related diseases. Basic knowledge about the vital nutrients (see lesson 11.2) and the ways in which they are measured are essential for creating healthy food habits. Having knowledge about nutrients and kilojoules may allow you to understand food labelling better and make healthier choices.

Fast food outlets must display nutritional information about their products. This increased information about the foods available can allow consumers to make better choices, but only if they can understand the measurements and what is recommended for a healthy diet. Increased educational levels can also lead to greater chance of employment and, therefore, greater income. Unfortunately, processed and fast foods are often considered cheaper options than fresh and healthier foods. Higher education levels have a high correlation with greater income, which is linked to greater access to healthier food options.

Peer group pressure

During your teenage years your peers are possibly most influential on the decisions you make. If you are surrounded by peers who engage in positive food habits, it makes it easier for you to make healthy choices. For example, if your friends carry a drink bottle around and regularly fill it up with water, it makes it easier for you to do the same. If your friends enjoy fresh fruit for snacks, you may share these with them. Similarly if your peers engage in negative food habits, it can make it more difficult for you to make healthier choices; for example, meeting your friends at a fast food restaurant for lunch.

FIGURE 11.16 Your peers can influence how healthy your drinks are.

Family and cultural influences

Family and cultural background have a big influence on the type and quantity of food we eat. Our families influence our food intake from when we are babies. In fact, eating and meal times often become a focus for family life.

Changes in family lifestyle over the last two to three decades have changed the eating patterns of Australians. These changes include:

- a decrease in the time spent preparing and eating meals as more women and teenagers enter the paid workforce
- loss of cooking skills traditionally passed from parent to child
- the introduction of microwave ovens
- improvements in food technology to create food and meals with longer shelf lives; for example, frozen meals, dehydrated foods, simmer sauces, and canned and prepacked side dishes
- extension of shopping hours, allowing working people more access to food shopping
- an increase in the number of people eating at fast food outlets and restaurants
- greater range and choice of food products as a result of our multicultural society
- the availability of meal kits such as Hello Fresh, which can be delivered directly to your home.

Cultural background significantly shapes food choices and eating habits. People of different cultures eat different staple foods (for example, people of Asian background use rice in many meals), prepare foods differently and eat some foods that other cultural groups would consider strange.

Epidemiological studies have found that death rates from heart disease, some cancers and diabetes are significantly lower in populations with a Mediterranean diet than for those with other westernised dietary patterns. So, what is a Mediterranean diet?

It has eight components:

- lower intakes of saturated fats — these are found in meat and dairy foods
- moderate alcohol intake
- high consumption of legumes, such as chickpeas
- high consumption of plain cereal foods
- high consumption of fruits
- high consumption of vegetables
- low consumption of meat and meat products
- moderate consumption of dairy foods.

Research also emphasises the importance of nuts, seeds and fish in the Mediterranean diet.

As Australia's diversity continues to expand, so does our understanding of an 'everyday Australian diet'. Many cultures have strong beliefs about foods that should be eaten in large amounts and foods that should be avoided. For example:

- people of Asian backgrounds often rely heavily on plant-based foods
- some First Nations Australians living on Country value foods that can be hunted
- traditional African cooking uses many spices and herbs with a high intake of white meat and fish.

FIGURE 11.17 Culture and gender influence our eating habits.

It can be challenging to both follow your cultural beliefs and achieve a healthy diet. One of the biggest challenges can be obtaining specific foods in Australia. This can lead to the use of substitutes, which are often processed or packaged and can be less nutrient-dense than the traditional fresh foods.

The Australian Government has recognised this, in particular the challenges faced by First Nations Australians, and has therefore released specific dietary requirements for these groups. An example of this can be seen in the following poster, which is the Aboriginal and Torres Strait Islander Guide to Healthy Eating.

FIGURE 11.18 What is unique about these food recommendations?

Source: The Commonwealth of Australia

Technological factors

Technological developments in the ways foods are processed, stored, packaged, transported and prepared have greatly influenced the type and variety of food that we eat.

Many foods can be purchased fresh, bottled, canned, frozen or dehydrated. Improvements in food processing and packaging, and transportation methods mean that food can now be transported over long distances and still keep its freshness and flavour. Foods that could once be purchased only when in season can now be bought year-round because of improved storage facilities and processes. The development of home appliances such as freezers, food processors and microwave ovens has also made meal preparation quicker and easier.

Physical factors

Food availability affects the choices you have and the choices you make. 'Easy' choices are often the quickest and cheapest. This can be a barrier to making healthy choices. For example, not many fruit and vegetables are readily and cheaply available all year round. When they are out of season they can be harder to source and more expensive. Fast food outlets aim to make their food an easy option by being cheaper, faster and often available 24 hours a day.

FIGURE 11.19 Healthy choices are possible if you are prepared and knowledgeable.

Media advertising

Through both the electronic (television, radio, internet) and print (newspapers, magazines, billboards) media, we are constantly exposed to advertising that aims to influence our choice of food. The Australian food industry spends more than $1 million a day on advertising.

Food companies produce food and advertising aimed at particular demographics, often children and adolescents, who can be easily influenced by strong media campaigns. Special promotions and gimmicks are often part of a media campaign to promote particular products; for example, fast food promotion of meals that come with toys for children. Companies and products also often align themselves with special events or sports programs, such as sponsorship of professional sports teams.

These influences over our food choices can pose a challenge to the adoption of healthy eating habits. For more information, use the **Junk food promoted through sports programs** weblink in the Resources tab.

FIGURE 11.20 Media ads encourage us to eat unhealthy foods.

Social media

Various social media platforms such as YouTube, TikTok, Snapchat and Facebook also advertise food through the advertisements that often appear before or after you start watching a video. Sometimes, companies pay the social media platform to advertise their product; other times, a company pays an influencer to promote the food product to you. Typically, companies choose to advertise their food product with an influencer or celebrity who appeals to the audience most likely to consume the product. For example, Taylor Swift and Selena Gomez have both promoted Coke because they have a younger audience who like sugary drinks.

Psychological factors

Mood eating

Bored, tired or upset? Often the first thing you think you need is food. This is often referred to as comfort eating because you are using food as tool to process your feelings rather than relying on something else, such as exercise, meditating or reading a book to comfort you. It is important that you understand your body and its needs to avoid 'mood eating' and the excessive kilojoules usually associated with this.

Economic factors

Price

As mentioned previously, the availability of food influences many of our food choices. Unfortunately, it can be cheaper to buy a large chocolate bar than an apple. Bottled water is often more expensive than soft drinks. However, if you plan ahead you can avoid price being a barrier to achieving good nutrition. Buying in bulk, bringing snacks from home and budgeting wisely can help ensure you can always access healthier options.

Time costs

Faster is not better. While eating regularly is healthier than skipping meals, choosing foods just because they are quick and easy is not always the best guide to healthy choices. However, meal kits such as Marley Spoon are available so that people can quickly prepare healthy meals and don't need to rely on junk food. These meal kits can reduce the time it takes to prepare a meal because all the ingredients are portioned and the recipe is designed for those who are time poor. So, while many barriers exist to preparing healthy food, options other than junk food are available.

Again, being prepared and planning ahead may increase your choices of snacks and meals.

DID YOU KNOW?

The City of Melbourne, in conjunction with Nutrition Australia, implemented a program to promote healthy food choices. The program, known as **Green Light Eat Right**, uses a traffic light system to separate food and drinks into three categories:

- *Green* — healthier choice foods or everyday foods.
- *Amber* — OK choice, these are 'select carefully' foods to be eaten only occasionally because they are mainly processed foods with added fats, sugar and salt.
- *Red* — less-healthy foods, not to be actively promoted and to be eaten very rarely because they are not consistent with the Dietary Guidelines for Australians.

on Resources

Weblinks Junk food promoted through sports programs
Green Light Eat Right

11.4.5 Making healthy choices the easier choice

You have a number of ways to make the healthy choice the easier choice and avoid the temptation of last-minute, 'there was nothing else' situations. Some simple suggestions include:

- carrying a drink bottle for water
- having healthy snacks available
- educating and informing those people around you about healthy food habits
- planning ahead so you have the time and money to access the healthier options
- knowing your body; for example, knowing when your body needs sleep and not food.

FIGURE 11.21 A refillable water bottle can make healthy choices on the go easier.

Healthier fast food options

Having unhealthy food sometimes is totally okay; however, it is important that we don't consume junk food regularly. When you do eat out, follow these tips to help you make a healthy choice:

FIGURE 11.22 Eating out can pose challenges to making healthy food choices.

- *Keep your eye on portion size*. Avoid supersized and value-sized items, no matter how much of a bargain they may seem. Go for the smallest size when it comes to burgers, fries and drinks. You can also find more reasonable portions on the children's menu.
- *Focus on grilled or roasted lean meats*. Grilled or fried? Avoid fried items, such as crispy chicken. Ask for grilled; many fast food outlets will cater for this. Choose turkey, chicken breast, lean ham or lean roast beef instead.
- *Pay attention to the descriptions on the menu.* Knowledge is the key. Foods labelled as deep-fried, pan-fried, creamy and crispy are usually high in calories, saturated fats and sodium.
- *Don't assume that healthy-sounding dishes are always your best option.* Salads can be a poorer choice. For example, many fast food salads are smothered in high-fat dressing. Choose your condiments wisely. This is where reading the nutrition facts before you order can make a huge difference.
- *Choose your drinks wisely.* Juices are not always the healthier option. Where possible, the best option is water. Soft drinks are full of kilojoules, as are fruit juices and milkshakes.

Other practical diet ideas for teenagers — a checklist

Do you follow each of these suggestions?

- Trim visible fat from meat.
- Spread butter or margarine thinly.
- Drink low-fat milk that is high in calcium.
- Eat fast foods only occasionally.
- Select high-fibre foods containing complex carbohydrates for main meals and snacks (for example, fresh fruit, vegetables, pasta, rice, cereals and bread).
- Regularly participate in physical activity that you enjoy.
- Do not diet, especially fad or crash diets.
- Do not skip meals, especially breakfast.
- Keep iron levels up by eating lean meat, chicken, fish, dark green vegetables, iron-enriched breakfast cereals, lentils and beans.
- Ensure adequate calcium intake by eating yoghurt, cheese, nuts, seeds, dark green vegetables and calcium-enriched breakfast cereals.

FIGURE 11.23 Check you're making healthy choices.

11.4 ACTIVITIES

1 Advertise

a. Survey the television advertisements on a weeknight over a three-hour period. List all the advertisements that relate to food and drink.
b. For each advertisement, identify:
   i. the product being advertised
   ii. the target market
   iii. the main selling point (for example, good for your health).
c. Categorise the type of food or drink advertised into the following groups: health food, sweets and confectionery, fresh food and takeaway food.
d. Present your results as a graph.
e. What types of food or drink are most advertised? What types are least advertised? Give possible reasons for this.

2 It's your turn

a. With a partner, plan and design an effective advertisement to promote a healthy snack available from your school canteen.
b. Your advertisement may be for a magazine or newspaper, billboard, radio or television.
c. Design a food label for your product. You may need to research professional food labels and identify the elements or components of an effective label.

3 Factors affecting food intake

doc-40629

Use the **What factors impact the food habits of your school?** worksheet in the Resource tab to devise a series of questions about your school's food habits.

a. When you have created the questions, survey a group of students to learn more about what food trends affect what your peers eat.
b. After you have surveyed your peers, complete the questions on the worksheet.

4 Case studies

Explain the significance of each of the following factors on the nutrition and eating habits of young people today. Describe both the positive and negative aspects in each case.

a. Cultural or ethnic group
b. Families where both parents work
c. Pre-packaged foods
d. 24-hour shopping
e. Restaurants and fast food outlets
f. Social media

5 Food influences

doc-14846

Use the **Food influences** worksheet in the Resources tab to investigate your eating habits and influences.

6 Healthy canteen

weblink

a. Evaluate your school canteen's menu using the **Green Light Eat Right** weblink in the Resources tab.
b. Create a poster or prepare a speech for assembly to educate your school community about the healthier choices available at your canteen.

7 Teen tips

a. Refer to the practical dietary checklist for teenagers and pick five suggestions that would help you to improve your diet.
b. Use these ideas to create a poster advising teenagers on how to eat more healthily.

11.4 Exercise

11.4 Exercise

Select your pathway

LEVEL 1	LEVEL 2	LEVEL 3
1, 2, 3, 4, 5	6, 7, 8	9, 10

These questions are even better in jacPLUS!

- Receive immediate feedback
- Access sample responses
- Track results and progress

Find all this and MORE in jacPLUS

Check your understanding

1. MC Which of the following contributes to a healthy diet?
   - A. Eating snacks high in sugar or fat
   - B. Skipping breakfast
   - C. Ensuring that a small percentage of energy intake comes from protein and carbohydrates
   - D. Eating a wide variety of nutrient-rich foods such as vegetables and fruit
2. True or false? As food prices increase, more people are likely to purchase junk food since it is cheaper.
3. MC What are the benefits of being educated?
   - A. More likely to get a job that can lead to a stable income to purchase healthy food
   - B. More likely to receive education on how to make healthy choices in school
   - C. Less likely to mostly consume unhealthy foods
   - D. All of the above
4. MC What is a focus of the Mediterranean diet?
   - A. Consuming high sugar drinks
   - B. Decreasing consumption of lentils
   - C. Increasing consumption of fruits and vegetables
   - D. All of the above
5. MC What factors influence adolescent food choices?
   - A. What their friends eat
   - B. What advertising they are exposed to on social media
   - C. Their exposure to cultural dishes and customs
   - D. All of the above

Apply your understanding

6. **State** two reasons people are more likely to make poor nutritional decisions.
7. **Identify** two ways to make healthy takeaway choices.
8. **Outline** three instances when you have purchased a food item or drink because of the influence of media advertising. In each case, name the food or drink, and **outline** the advertisement that influenced you.
9. **Propose** one way that schools can encourage students to not skip breakfast. **Justify** why they should follow your recommendation.
10. **Select** two countries and explore the main things that affect their food habits. **Compare** and **contrast** these factors to see how they are similar or different.

11.5 Food models for good health

LEARNING INTENTION

- Describe how the Australian Dietary Guidelines, the Healthy Eating Pyramid and the Australian Guide to Healthy Eating promote healthy eating.

11.5.1 Knowledge for health

Having knowledge about the different nutrients and their food sources will take you one step closer to having a healthy diet. The next challenge is understanding how much of these nutrients your body needs daily. Fortunately, a number of food models provide guides for nutrients and their sources.

ENGAGE

The Australian Guide to Healthy Eating (AGHE) provides the benchmark for a healthy diet. The AGHE recommends the daily selection of a specific number of serves from the five core or healthy food groups. These are:

- fruit
- vegetables
- plain bread and cereals
- milk and milk alternatives
- meat and meat alternatives.

Do you eat food from each of the five food groups? How many serves do you have from each of the five food groups each day? The AGHE recommends that intake of non-core or unhealthy foods that are high in salt, fat, sugar and kilojoules, and low in essential nutrients, should be limited. This will help you maintain a healthy body weight, prevents high levels of blood fats and reduces blood pressure.

FIGURE 11.24 Following recommended dietary guidelines is good for both your mental and physical wellbeing.

weblink Use the **Healthy Eating Pyramid** weblink in the Resources tab to access the Nutrition Australia website. What is the purpose of the healthy living pyramid, and what does it encourage people to do? Make a list of the limitations of the Healthy Eating Pyramid; what does it not do or not explain?

11.5.2 The dietary guidelines

The Australian Dietary Guidelines were updated in 2019 and provide a very comprehensive guide to achieving good nutrition. The guidelines are based on significant research and not only outline general tips for a better diet, but also provide specific information regarding serving numbers and size.

There are five general guidelines, as described below.

Guideline 1

To achieve and maintain a healthy weight, be physically active and choose amounts of nutritious food and drinks to meet your energy needs.

- Children and adolescents should eat sufficient nutritious foods to grow and develop normally. They should be physically active every day and their growth should be checked regularly.
- Older people should eat nutritious foods and keep physically active to maintain muscle strength and a healthy diet.

Guideline 2

Enjoy a wide variety of nutritious foods from these five food groups every day:

- plenty of vegetables of different types and colours, and legumes/beans
- fruit
- grain (cereal) foods, mostly wholegrain and/or high cereal fibre varieties, such as breads, cereals, rice, pasta, noodles, polenta, couscous, oats, quinoa and barley
- lean meats and poultry, fish, eggs, tofu, nuts and seeds, and legumes/beans
- milk, yoghurt, cheese and/or their alternatives, mostly reduced fat (reduced fat milks are not suitable for children under the age of two years)

And drink plenty of water.

Guideline 3

Limit intake of foods containing saturated fat, added salt, added sugars and alcohol.

a. Limit intake of foods high in saturated fat such as many biscuits, cakes, pastries, pies, processed meats, commercial burgers, pizza, fried foods, potato chips, crisps and savoury snacks.
   - Replace high-fat foods that contain predominately saturated fats such as butter, cream, cooking margarine, coconut and palm oil with foods that contain predominately polyunsaturated and monounsaturated fats such as oils, spreads, nut butters/pastes and avocado.
   - Low-fat diets are not suitable for children under the age of two years.
b. Limit intake of foods and drinks containing added salt.
   - Read labels to choose lower sodium options among similar foods.
   - Do not add salt to foods in cooking or at the table.
c. Limit intake of foods and drinks containing added sugars such as confectionary, sugar-sweetened soft drinks and cordials, fruit drinks, vitamin waters, energy and sports drinks.
d. If you choose to drink alcohol, limit intake. For women who are pregnant, planning a pregnancy or breastfeeding, not drinking alcohol is the safest option.

FIGURE 11.25 A good strategy to limit consumption of foods low in essential nutrients is to think of them as treats.

Guideline 4

Encourage, support and promote breastfeeding.

Guideline 5

Care for your food; prepare and store it safely.

These guidelines are very general and targeted at the whole population, particularly adults.

DID YOU KNOW?

Have you ever felt extremely thirsty after having junk food? This is likely because the food is very high in sodium and can cause you to feel dehydrated because of how salty the food is!

In order to help all Australians, including teenagers, achieve better nutrition, very specific information about how many serves of each of the major food groups are recommended for good health has also been released. This information includes different guidelines for males and females and for different age groups.

TABLE 11.4 Dietary guidelines — serving sizes for children and adolescents

Recommended average daily number of serves from each of the five food groups*						Additional serves for more active, taller or older children and adolescents
	Vegetables & legumes/ beans	Fruit	Grain (cereal) foods, mostly wholegrain	Lean meat and poultry, fish, eggs, nuts and seeds, and legumes/ beans	Milk, yoghurt, cheese and/or alternatives (mostly reduced fat)	Approx. number of additional serves from the five food groups or discretionary choices
Toddlers**						
1–2	2–3	½	4	1	1–1½	
Boys						
2–3	2½	1	4	1	1½	0–1
4–8	4½	1½	4	1½	2	0–2½
9–11	5	2	5	2½	2½	0–3
12–13	5½	2	6	2½	3½	0–3
14–18	5½	2	7	2½	3½	0–5
Girls						
2–3	2½	1	4	1	1½	0–1
4–8	4½	1½	4	1½	1½	0–1
9–11	5	2	4	2½	3	0–3
12–13	5	2	5	2½	3½	0–2½
14–18	5	2	7	2½	3½	0–2½
Pregnant	5	2	8	3½	3½	0–3
Breastfeeding	5½	2	9	2½	4	0–3

*Includes an allowance for unsaturated spreads or oils, nuts or seeds (½ serve [4.5 g] per day for children 2–3 years of age, 1 serve [7–10 g] per day for children 3–12 years of age; 1½ serves [11–15 g] per day for children 12–13 years, and 2 serves [14–20 g] per day for adolescents 14–18 years of age and for pregnant and breastfeeding girls).

**An allowance for unsaturated spreads or oils or nut/seed paste of 1 serve (7–10 g) per day is included. Whole nuts and seeds are not recommended for children of this age because of the potential choking risk.

Having knowledge empowers people to make healthy choices. The general guidelines and table 11.4 provide some insight into how many serves of each food group you should consume each day. However, many people do not gain the full benefits of following this guide because they do not understand what is meant by a serve. This is by far the biggest challenge in terms of understanding the food you are eating because it changes for each food, will depend on how it is cooked and can be difficult to measure.

In order to ensure that all Australians have access to information to allow them to make healthy choices, the Australian Dietary Guidelines group have also produced a guide on what makes up a serve for each food group, as shown in the following figures.

Resources

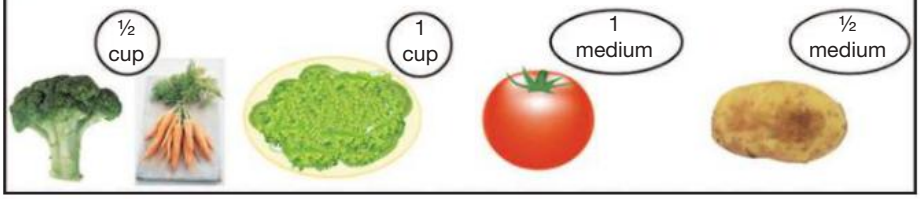
Interactivity How much is a serve? (int-6105)

FIGURE 11.26 What makes a serve?

How much is a serve of vegetables?

A standard serve is about 75 g (100–350 kJ) or:

½ cup	cooked green or orange vegetables (e.g. broccoli, spinach, carrots or pumpkin)
½ cup	cooked dried or canned beans, peas or lentils
1 cup	green leafy or raw salad vegetables
½ cup	sweetcorn
½ medium	potato or other starchy vegetables (sweet potato, taro or cassava)
1 medium	tomato



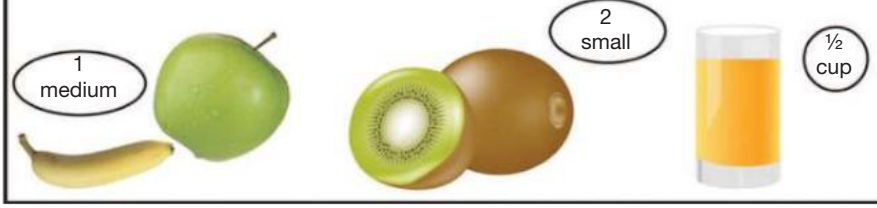
How much is a serve of fruit?

A standard serve is about 150 g (350 kJ) or:

1 medium	apple, banana, orange or pear
2 small	apricots, kiwi fruits or plums
1 cup	diced or canned fruit (no added sugar)

Or occasionally:

125 mL (½ cup)	fruit juice (no added sugar)
30 g	dried fruit (e.g. 4 dried apricot halves or 1½ tablespoons of sultanas)

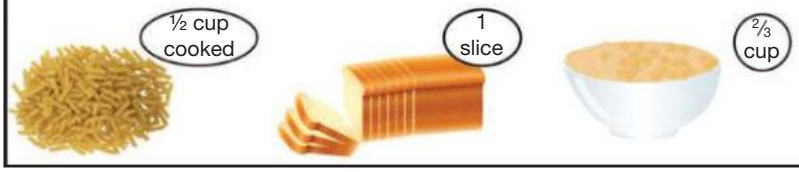


How much is a serve of grain (cereal) food*?

A standard serve is about 500 kJ or:

1 slice (40 g)	bread
½ medium (40 g)	roll or flat bread
½ cup (75–120 g)	cooked rice, pasta, noodles, barley, buckwheat, semolina, polenta, bulgur or quinoa
½ cup (120 g)	cooked porridge
⅔ cup (30 g)	wheat cereal flakes
¼ cup (30 g)	muesli
3 (35 g)	crispbreads
1 (60 g)	crumpet
1 small (35 g)	English muffin or scone

*Grain (cereal) foods, mostly wholegrain and/or high cereal fibre varieties

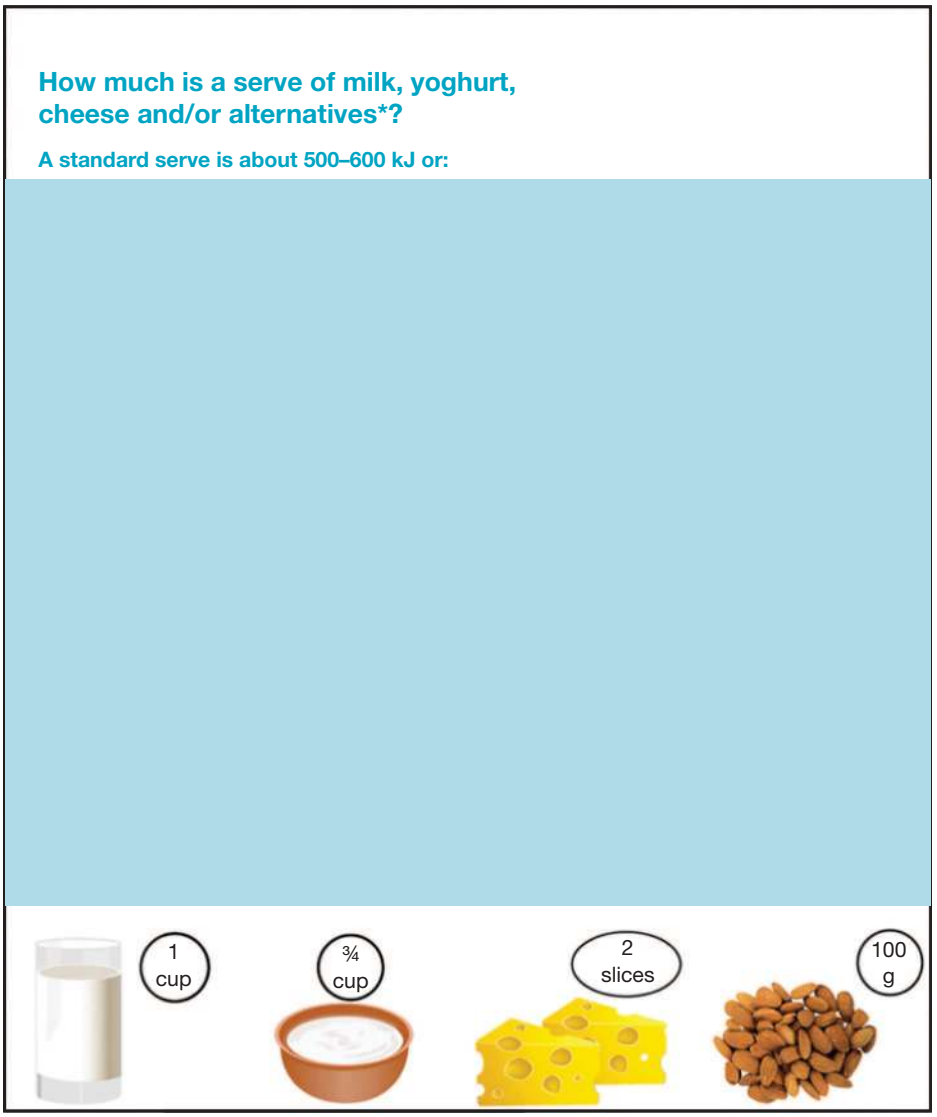


How much is a serve of lean meat and poultry, fish, eggs, nuts and seeds, and legumes/beans*?

A standard serve is about 500–600 kJ or:

65 g	cooked lean red meats such as beef, lamb, veal, pork, goat or kangaroo (about 90–100 g raw)
80 g	cooked lean poultry such as chicken or turkey (100 g raw)
100 g	cooked fish fillet (about 115 g raw) or 1 small can of fish
2 large (120 g)	eggs
1 cup (150 g)	cooked or canned legumes/beans such as lentils, chickpeas or split peas*
170 g	tofu
30 g	nuts, seeds, peanut or almond butter, tahini or other nut or seed paste*^

*Choose those with no added salt. ^Only to be used occasionally as a substitute for other foods in the group



Since the Australian Dietary Guidelines are very comprehensive, the Australian Government also released the Australian Guide to Healthy Eating. This visual representation is based on the same research as the Australian Dietary Guidelines but is presented in a more succinct way.

The guide is easy to understand and clearly shows the recommended proportions of the five major food groups, including water (see the following figure).

FIGURE 11.27 The Australian Guide to Healthy Eating

11.5.3 The Healthy Eating Pyramid

The Healthy Eating Pyramid was developed by the Australian Nutrition Foundation. The pyramid provides a simple visual representation of the proportion of our diet that should be made up from four main groups of foods.

The pyramid shows us how we can make dietary guidelines work in a practical sense:

- The foods we should eat in the greatest amounts are vegetables, legumes, grains, and fruit.
- Foods that we should eat moderate amounts of include milk, yoghurt, cheese and alternatives, lean meat, poultry, fish, eggs, nuts, and seeds.
- The top of the pyramid includes healthy fats, such as olive oil.
- We should limit the amount of salt and added sugar.
- Aim to choose water as our main source of fluids.

Unfortunately, many Australians have a diet rich in sugar, salt and fat, and one that contains small amounts of plant-based foods (fruit, vegetables, grains), meaning their pyramid is turned upside down!

FIGURE 11.28 Healthy Eating Pyramid

Source: Copyright the Australian Nutrition Foundation Inc.

11.5.4 Calcium and iron intake

These minerals are extremely important for growth and development in adolescents. Table 11.5 indicates the number of serves of common foods required each day to meet the recommended daily intake of calcium and iron for adolescents.

TABLE 11.5 Food sources of calcium and iron

Mineral	Food source
Calcium • Girls aged 14–18 years: 1300 mg per day • Boys aged 14–18 years: 1300 mg per day	• Whole milk • Fruit yoghurt • Low-fat cheese • Broccoli • Almonds
Iron • Girls aged 14–18 years: 15 mg per day • Boys aged 14–18 years: 11 mg per day	• Beef • Chicken • Tuna • Wholemeal bread • Spinach • Tofu • Whole milk • Soy milk

Source: Australian National Health and Medical Research Council and the New Zealand Ministry of Health (2005). *Nutrient Reference Values*.

DISCUSS

Evaluate your diet based on one of the food models.

a. Discuss the factors that influence your food intake.
b. Explain how you can take greater control and responsibility for your diet.
c. Explain how the strategies outlined in part b will help you maintain lifelong healthy habits.

FIGURE 11.29 A healthy intake of calcium now while you are young will help prevent osteoporosis when you are older.

DID YOU KNOW?

When consuming iron-rich plant-based foods, you need to eat a vitamin C–rich food so that the iron can be absorbed. Next time you eat tofu or another iron-rich food source, make sure you also eat some tomatoes or capsicum to help absorb the tofu's iron!

11.5 ACTIVITIES

1 Comparing food models

a. In pairs, discuss the Dietary Guidelines, the Australian Guide to Healthy Eating, and the Healthy Eating Pyramid food models.
b. For each of the food models discuss two advantages and two disadvantages.
c. Which model would be most beneficial in a secondary school? Justify your response.
d. Research whether different versions are available for each of the models. Are there modified versions for different population groups or cultures? If so, how do they differ? Explain why you think the different versions are needed.

2 Create a model

a. Collect a menu from your canteen.
b. Select one food model that we have discussed in this lesson. Using this model, design a food order that includes an item from each food group in the food model you selected.

3 Analysing snack options

doc-15349

Use the **Analysing snack options** worksheet in the Resources tab to compare your current eating patterns with what is recommended for you.

4 Set some goals

Use the dietary guidelines and dietary models supplied in this lesson to decide on three changes to your personal eating habits. Write these down and make a commitment to them.

5 How does your diet rate?

a. Write down everything you have eaten in the past 24 hours. Be honest.
b. Use one of the dietary models outlined in this lesson to organise and categorise the food you have eaten.

doc-15347

c. Use the data you have collected to complete the tables and answer the questions in the **Check your diet** worksheet in the Resources tab.

11.5 Exercise

11.5 Exercise

Select your pathway

LEVEL 1	LEVEL 2	LEVEL 3
1, 2, 3	4, 5, 6, 7	8, 9, 10

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Check your understanding

1. MC Food models:
   - A. measure body muscle specifically.
   - B. inform, educate and motivate people about a healthy diet.
   - C. measure body fat by expressing body weight in relation to height.
   - D. are the government's rules about what to eat.
2. MC Which of the following is not an Australian Dietary Guideline?
   - A. To achieve and maintain a healthy weight, be physically active and choose amounts of nutritious food and drinks to meet your energy needs.
   - B. Enjoy a wide variety of nutritious foods from these five food groups every day.
   - C. Increase intake of foods containing saturated fat, added salt, added sugars and alcohol.
   - D. Encourage, support and promote breastfeeding.
3. The Australian Guide to Healthy Eating suggests that we should consume oils in small amounts. True or false?
4. The Australian Guide to Healthy Eating and the Australian Dietary guidelines are both visual food models. True or false?
5. MC What makes the Healthy Eating Pyramid different from the other selection models?
   - A. It is a visual tool.
   - B. It promotes the consumption of herbs and spices.
   - C. It promotes drinking water.
   - D. All of the above

Apply your understanding

6. **Explain** why is it important to understand what constitutes a 'serve'.
7. **Determine** how you would change your diet to reflect one of the food models you have studied.
8. **Outline** a lifestyle change that might make it difficult to maintain a healthy diet. **Outline** a solution to overcome this difficulty.
9. **Justify** how food models could be used in schools to have a positive impact on eating habits.
10. **Justify** two groups of people who might struggle to consume enough of one food group.

11.6 Preventing diet-related diseases

LEARNING INTENTION

- Explain the impacts of having a poor diet and discuss strategies to prevent diet-related diseases.

11.6.1 Impacts of being overweight

One of Australia's dominant health issues relates to the link between being overweight and chronic health conditions such as type 2 diabetes, coronary heart disease and high blood pressure. Childhood obesity is of particular concern and has become a focus for local, state and federal government initiatives to help reduce its incidence.

ENGAGE

weblink

Use the weblinks in the Resources tab to visit one or more government health websites.

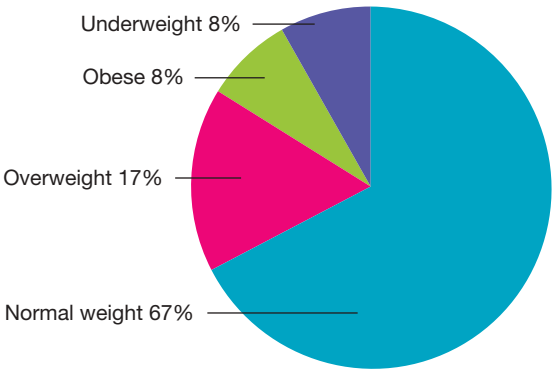
- List some informative facts relevant to diet and nutrition.
- Describe one strategy that aims to address the unhealthy nutrition habits of many Australians.
- How does this site inform you about healthy lifestyle choices?

FIGURE 11.30 What can the government do to improve your eating habits?

11.6.2 Diet and obesity

The following figure shows data from the 2017–18 National Health Survey, which depicts the proportion of Australian children who were either at a normal weight, underweight, overweight or obese based on their body mass index (BMI). Since this data is based on a child's BMI, it considers their weight and height to determine the catalogue they fall into. When considering BMI, it is important to remember that BMI does not differentiate between fat, muscle or bone mass, and it does not reflect how fat is distributed among individuals. The data shows that the majority of children (67 per cent) were considered at a normal weight based on their height and weight; however, 25 per cent of children were considered overweight or obese.

FIGURE 11.31 Body mass index classification of children aged 5–14, 2017–18



Source: ABS 2019a. Microdata: National Health Survey, 2017–18. ABS cat. no. 4324.0.55.001. Canberra: ABS. Customised data report

11.6.3 Diet-related diseases and disorders

Obesity

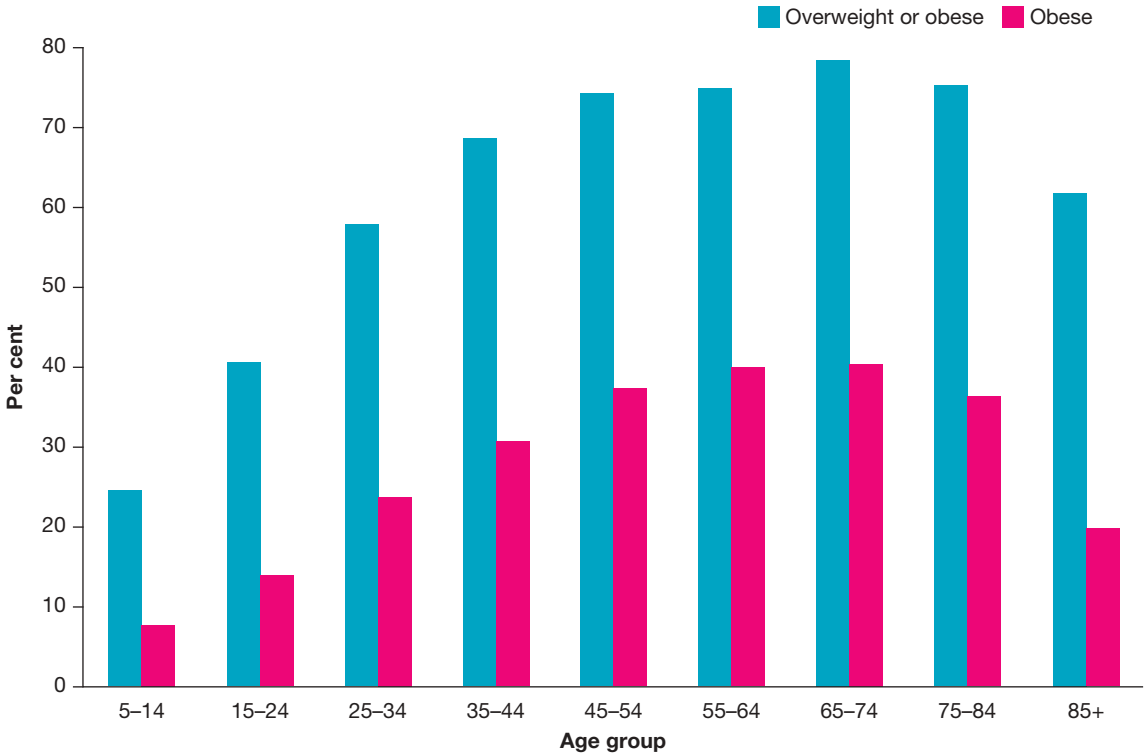
The rate of overweight and obesity among Australian adults is rising. For Australian children aged 5–17 years, the proportion of overweight and obese children increased between 1995 and 2007–08, but has been relatively stable since.

People aged 15–24 in 2017–18 were more likely to be overweight or obese compared with people at the same age 10 and 22 years earlier.

Obesity has many negative immediate health implications:

- poor social health, including a reluctance to mix with others due to embarrassment
- increased risk of other diseases, particularly type 2 diabetes.

FIGURE 11.32 Proportion of overweight and obese persons aged 5 to 85 and over, by age group (years), 2017–18



Source: Australian Institute of Health and Welfare 2020. Overweight and obesity among Australian children and adolescents. Cat. no. PHE 274. Canberra: AIHW.

High blood pressure

Diets high in fat and salt content have been linked with **high blood pressure**. As previously mentioned, being overweight or obese can also lead to high blood pressure. High blood pressure is a major risk factor in heart disease, and those with high blood pressure are at a greater risk of getting heart disease.

Coronary heart disease

Coronary heart disease is one type of cardiovascular disease. Coronary heart disease is the leading cause of death for men and the second leading cause for women in Australia, and is responsible for more than one death every 12 minutes.

high blood pressure also called hypertension; a major risk factor in coronary heart disease; measured in and expressed as systolic pressure over diastolic pressure

coronary heart disease narrowing of the coronary arteries of the heart or complete blockage of the coronary arteries leading to heart attack

Coronary heart disease is related to the clogging and narrowing of coronary (heart) arteries due to the build-up of fatty deposits — atherosclerosis. This is a condition in which the artery walls thicken, harden and lose their elasticity. Once an artery is partially blocked, symptoms of heart disease occur. These range from angina to heart attack. High-saturated fat diets, being overweight or obese and elevated blood pressure all increase the risk of coronary heart disease.

Type 2 diabetes

In type 2 diabetes, the pancreas makes some insulin, but not enough to allow your body to work effectively. Type 2 diabetes results from a combination of genetic and environmental factors.

Lifestyle factors contributing to the onset of type 2 diabetes include:

- high blood pressure
- being overweight or obese
- insufficient physical activity
- poor dietary or eating habits
- high cholesterol
- excess fat around the waistline
- cigarette smoking.

As you get older, the risk of contracting type 2 diabetes increases. Overweight people over the age of 45 with high blood pressure have an increased risk. Type 2 diabetes may be reversed or delayed by following some basic guidelines.

- Maintain or return to a healthy body weight.
- Undertake regular physical activity as recommended by the National Physical Activity Guidelines for Australians (refer to topic 9 for more details).
- Make healthy food choices.
- Manage blood pressure.
- Manage cholesterol levels.
- Do not smoke.

FIGURE 11.33 Regular physical activity can help reduce the risk of diabetes.

weblink Use the **Health Direct: Diabetes** weblink in the Resources tab to further investigate type 2 diabetes.

Colorectal cancer

According to the World Health Organization, approximately one-third of deaths from cancer are due to the five leading behavioural and dietary risks: high BMI, poor diet, physical inactivity, tobacco use and alcohol use. Colorectal cancer is commonly also known as bowel cancer because it develops from the inner lining of the bowel.

Diets high in fat predispose humans to colorectal cancer. In countries with high colorectal cancer rates, the fat intake in the diet is much higher than in countries with low cancer rates.

Other contributing factors include:

- age — as people age, the risk of contracting colorectal cancer increases
- diabetes — research has shown that people with diabetes are up to 40 per cent more likely to develop colorectal cancer than people who do not have diabetes
- a low-fibre diet
- overweight and obesity
- smoking cigarettes.

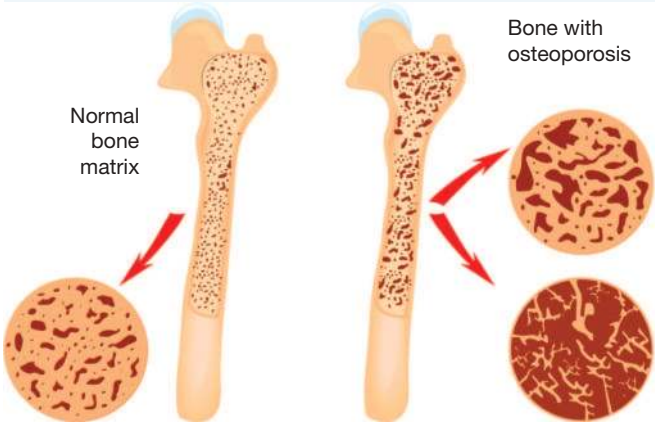
A report released by the George Institute of International Health in Sydney shows that people who are obese have a 20 per cent greater risk of developing colorectal cancer than people within healthy weight ranges. The report also states that for every 5 kilograms of weight gain above recommended levels, the risk of developing the cancer increases by 7 per cent.

Osteoporosis

Osteoporosis is caused by a thinning of the bones due to reduced calcium salts in the bone structure. It often results in bone fractures and deformities in older people. Women are more susceptible to osteoporosis than men because their bone mass is less than that of a male at any given age. Additionally, menopause results in women losing calcium from their bones at a much greater rate than men. Menopause can also affect bone density due to the decrease in the hormone oestrogen.

Research has shown that low calcium intake during childhood, adolescence and early adulthood is one of the principal factors implicated in the cause of osteoporosis.

FIGURE 11.34 Osteoporosis is caused by a thinning of the bones and reduced bone density.



Anorexia nervosa and bulimia nervosa

The eating disorders anorexia nervosa and bulimia nervosa, although classified as separate illnesses, have many common features and symptoms. Patients of both conditions display excessive and inappropriate food restriction; they can experience a distorted body image, and may see themselves as larger than they are.

The most likely individuals to develop either condition are females in their teens and early twenties, although males and older women can also develop the disorders. Many diet and, often, those dieting are not overweight to begin with. Unfortunately, some girls who begin dieting cannot stop and continue until they develop these eating disorders.

The typical behaviour pattern of someone with **anorexia nervosa** involves severe restriction of food intake, coupled with excessive activity and exercise as part of an insatiable desire to lose weight. In extreme cases, the person may even diet themselves to death.

A person suffering **bulimia nervosa** becomes unhappy with their body weight and shape and starts to diet. This develops into a pattern or cycle of starving, **binge eating**, and vomiting or purging.

Both of these conditions have noticeably increased in prevalence in recent decades. Reasons for this increase are not fully known; however, there is no doubt that, within this time span, increasing pressure has been placed on women by the fashion industry and traditional and social media. Beauty and success are equated with a slender figure. Other pressures have come from the fitness and health industries, whose advice may be taken to unhealthy extremes by susceptible individuals. If you are feeling distressed from this content about eating disorders, reach out to the **Butterfly Foundation** via the weblink to access their phone or chat service.

weblink

anorexia nervosa eating disorder involving severe restriction of food intake coupled with excessive exercise and activity as part of an obsessive desire to lose weight

bulimia nervosa eating disorder characterised by binge eating followed by induced vomiting or purging

binge eating often associated with bulimia, where excessive amounts of food are eaten in one sitting

11.6.4 Sensible weight control

The major steps that we can take to prevent and control these types of dietary disease and disorder are sensible diet, regular physical activity and a healthy lifestyle. Where a genuine need for weight loss exists, the following guidelines should be followed.

- Consume a well-balanced diet that is rich in nutrients from all the five food groups.
- Decrease consumption of refined sugars and alcohol, and when you enjoy these foods, consume them in moderation.
- Plan regular exercise that you enjoy, and don't over-exercise.
- If you think you need to lose weight, speak to a medical doctor or dietitian who can advise you on a healthy weight goal for you and how to approach losing weight in a healthy manner.

Permanent changes to lifestyle are required to achieve and maintain weight control. Once your target weight is reached, continue with sensible eating and exercise habits. Most fad or **crash diets** widely published in the media do not work because they do not provide strategies that may be followed for the rest of your life. While many of these diets are nutritionally sound, they are often unbalanced and not suitable as a lifetime diet. Some diet programs exclude whole food groups or work on the basis of rapid fluid loss rather than fat loss.

FIGURE 11.35 It is important to not excessively restrict your intake of foods, because you might miss out on consuming a key nutrient from one of the five food groups.

DISCUSS

Investigate the Obesity Policy Coalition's proposed sugar tax.

a. Outline the common myths and misconceptions associated with sugar intake.
b. Explain why sugar is just as, if not more, detrimental to our health than fats.
c. Many argue that the government should spend more time and money on Medicare to help fix the diet-related diseases associated with sugar intake than on trying to prevent sugar intake. Evaluate this statement.

11.6.5 Strategies to prevent diet-related diseases

Australia currently spends over $27 billion each year treating chronic diseases, which is more than a third of our national health budget. It is important to try to reduce this cost and also to avoid losing productivity in the workplace because of long-term illnesses. To do that, it is important to focus on changing lifestyles to prevent these chronic diseases from happening in the first place.

The growing importance of health promotion has been recognised. All state governments and territories have agreed to use Commonwealth funding and specific funding from their own budgets to:

- promote healthy lifestyles
- support early detection of lifestyle risks and chronic disease
- support lifestyle and risk modification
- encourage active self-management of chronic disease.

crash diets irresponsible activity designed to lose weight rapidly; often involves withdrawal of important food nutrients or food groups; weight lost is nearly always quickly put on again

About one-third of all chronic disease has been attributed to changes in avoidable risk factors such as:

- smoking
- high alcohol use
- physical inactivity
- poor diet
- excess weight
- high blood pressure
- high blood cholesterol.

These risk factors have grown in importance because of changes in society and how people have responded to these changes.

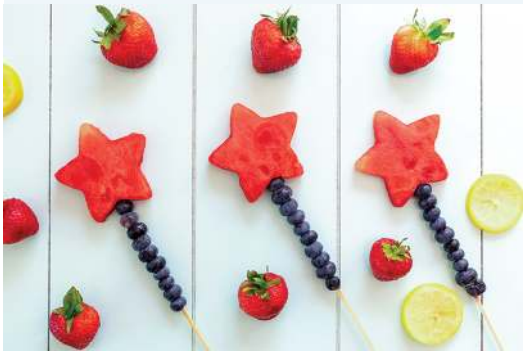
Initiatives currently in place

The federal government has put in place some initiatives to help promote positive change in our lifestyles. These include:

- the National Nutrition Policy, which is a national framework to drive and monitor nutrition initiatives
- Australia's Physical Activity and Sedentary Behaviour Guidelines, a program designed to promote physical activity (described in detail in topic 9).

State and territory governments also have many initiatives specific to their populations' needs. Can you think of some specific to your state or territory?

FIGURE 11.36 Making healthy food 'fun' for kids is a common initiative to promote healthy eating in young children.



11.6 ACTIVITIES

1 Diet and disease

Choose two diet-related diseases discussed in this section. Explain the role of food behaviours in the prevention of the disease.

2 Food and drink criteria

weblink

Use the **Healthy School Canteen Strategy** weblink in the Resources tab to read about the Food and Drink Criteria that applies to NSW school canteens. Then discuss whether this is an appropriate initiative on the part of the government.

3 Your own initiative

In this lesson, you have explored different initiatives the government is using to address diet-related diseases. Design a initiative that can be implemented in Australia to reduce the risk of Australians getting such a disease.

4 A plan to increase the number of children walking to school

weblink

a. Access the **A plan to increase the number of children walking to school** weblink and read the article.
b. List some of the barriers to walking to school.
c. Explain some of the benefits of walking to school outlined in the article.
d. Identify what strategies could be used to encourage children to walk to school more often.

11.6 Exercise

11.6 Exercise

Select your pathway

LEVEL 1	LEVEL 2	LEVEL 3
1, 2, 3, 4, 5	6, 7	8, 9, 10

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Check your understanding

1. MC What are the two principal factors that have been identified by researchers as the cause of osteoporosis?
   - A. Low calcium intake during childhood, adolescence and early adulthood
   - B. Obesity
   - C. The onset of menopause in women
   - D. A low-fibre diet
2. MC Why is the growing rate of obesity in children such a concern for the Australian government?
   - A. Obesity costs the government a great deal of money.
   - B. Obesity in children is a significant concern because it suggests that children are not learning or developing healthy habits.
   - C. Obesity leads to many other conditions that result in people needing more medical attention.
   - D. All of the above
3. Type 2 diabetes can result from not exercising enough. True or false?
4. MC Losing weight can be very dangerous because restricting food can result in a decreased consumption of key nutrients. Why do some people feel pressured to lose weight?
   - A. Social media advertising
   - B. Beauty standards in the media
   - C. Expectations from society
   - D. All of the above
5. MC How do government health initiatives benefit Australians? Select as many answers as you think are true.
   - A. They encourage Australians to make healthy choices.
   - B. They reduce the risk of Australians getting diseases.
   - C. There are no initiatives to benefit Australians.
   - D. They can help Australians manage their diseases.

Apply your understanding

6. **Explain** the difference between the cause of osteoporosis and the cause of type 2 diabetes.
7. **List** a strategy to address community health issues and **explain** how it will help improve health and wellbeing.
8. The government spends millions of dollars to educate the public about making healthy nutrition decisions. **Justify** this spending by linking these costs to the prevention of diet-related diseases.
9. **Evaluate** your current risk of diet-related diseases. Which one, if any, are you most at risk of? **Explain** why.
10. Select one diet-related disease. **Create** a poster that explains:
    - the symploms of the disease
    - how someone can prevent it
    - who is most at risk of getting the disease.

11.7 Nutrition for sport and other special dietary needs

LEARNING INTENTION

- Explain nutrition and hydration needs when exercising.
- Outline safety measures when exercising in hot or humid conditions.
- Explain special dietary needs of particular diets and individuals.

11.7.1 Special dietary needs

In this lesson you will explore the special dietary needs of those following plant-based diets, athletes, people exercising in hot climates and women.

ENGAGE

Sports nutrition is based on the same basic principles that govern general nutrition; that is, a balance of all nutrients, a variety of foods and moderation of the intake of certain foods. More recently, the importance of 'recovery eating' at the completion of strenuous exercise to replenish glycogen stores and fluids has been recognised.

Brainstorm all the stories and myths you have heard about diet and exercise. Once the list is complete, compare the stories as a class and discuss:

- whether the stories are based on facts
- whether they are true or false
- from where people get their knowledge of diets
- the best methods for assessing information about diet and nutrition.

FIGURE 11.37 Athletes must rehydrate and refuel in order to maintain optimum performance.

11.7.2 Sports nutrition

The importance of the training diet is now widely accepted. Athletes understand they must eat well to ensure maximum return from heavy training schedules. Also, our understanding of the competition diet has increased, providing athletes with the opportunity to undertake special eating practices before, during and after the event to maximise their performance.

Each sportsperson will have different dietary requirements depending on training, age, sex, body size, the sport played, and the environment for training and competition. Despite this, some general principles of sports nutrition apply.

- Increase low GI carbohydrate intake.
- Ensure an adequate protein intake.
- Increase dietary fibre.
- Decrease or eliminate alcohol.
- Decrease salt intake.
- Increase water intake.

For many sportspeople, the recommended balanced diet (consisting of 45 to 65 per cent carbohydrates, 20 to 35 per cent fat and 10 to 15 per cent protein) may be adequate to meet their training needs. However, athletes involved in events of a strenuous intermittent nature (most team games), or continuous events of more than 90 minutes' duration will need more carbohydrates. Carbohydrates should make up 70 per cent of the training diet, with a subsequent decrease in the percentage intake of dietary fat to approximately 15 to 20 per cent of total intake.

11.7.3 Training diet

Sportspeople should follow the dietary guidelines outlined in lesson 11.5. It is important to keep in mind that you need enough fuel to maintain weight *and* provide enough energy for increased expenditure through training.

11.7.4 Competition diet

The competition diet poses its own set of concerns, especially for the serious or professional athlete.

It is important to have good competition nutrition strategies. This is because certain factors related to nutrition can make you feel tired and perform worse during an event. These factors include depletion of muscle fuel stores, **hypoglycaemia** and dehydration. However, some important competition strategies reduce, delay or offset these factors.

General preparation of energy stores

Fatigue in many sports is often related to the depletion of the body's energy stores, particularly muscle glycogen (carbohydrates). Therefore, preparation for a competition requires maximising muscle glycogen stores to last throughout the event. For most sports and athletes, this can be achieved quite readily, because a high-carbohydrate diet should already be part of their training plan. In the 24 hours or so prior to the event, athletes will often further increase carbohydrate intake in order to ensure that they achieve their natural storage capacity.

Carbohydrate loading for endurance events

Carbohydrate loading is a technique developed by Swedish researchers in the 1960s. It has since been modified by American sports physiologists and is mainly utilised by athletes competing in very demanding sports or ultra-endurance events. Carbohydrate loading is recommended and relevant only to events lasting 90 minutes or longer.

The carbohydrate loading method begins three to four days before competition. At this time, training is reduced and high levels of carbohydrate are consumed (80 to 85 per cent of kilojoule intake, instead of the usual 60 to 70 per cent). The body will store far more glycogen than usual.

Pre-competition meal

The purpose of the pre-competition meal is to ensure that blood glycogen and liver glycogen stores are topped up for the strenuous activity that is to follow. It also assists in ensuring adequate hydration (fluid levels) prior to competition. The following are guidelines for the pre-competition meal.

- The meal should be high in low GI carbohydrates, low in dietary fat and low in simple sugars (eating a minimum of dietary fat will assist in faster digestion because dietary fat is difficult to digest). If you eat large quantities of sugar or sugar-rich foods, you will alter your normal levels of blood glucose. This will raise your blood glucose level, which will slow down the release of energy when you need it most. It also creates a dependence on carbohydrates, leading to an early depletion of glycogen that will lead to a decrease in performance.
- You should eat your pre-competition meal two to three hours before you compete to ensure your stomach is empty by the time you compete.

hypoglycaemia low levels of blood sugar (glucose) causing a feeling of fatigue

- Keep your dietary fibre content low to moderate because you don't want to feel any discomfort while competing. This will also lessen the production of gas and so lessen flatulence. (Normally, however, you should be eating a diet high in dietary fibre.)
- An important part of the pre-competition meal is the psychological aspect. The meal should be familiar and enjoyable with no hidden surprises. Use your training diet as a testing ground for your pre-competition meals.
- Keep up your fluid intake. Keep drinking right up to the event by drinking small amounts frequently. This will ensure adequate hydration.

FIGURE 11.38 Pasta is a good pre-competition meal because it is high in complex carbohydrates.

Suggested pre-event foods and fluids are listed in table 11.6.

TABLE 11.6 Suggested pre-event foods and fluids

Solid foods	Fluids
• Legumes such as kidney beans • Oats with low-fat yoghurt or low-fat milk • Baked beans • Brown rice • Fresh or canned pasta with plain, tomato-based sauce	• Water! • Liquid meal formula, such as Sustagen • Carbohydrate/electrolyte sports drink • Tea • Herbal tea

Carbohydrate supplementation

Carbohydrate supplementation is the intake of enough additional carbohydrates while exercising to delay the onset of glycogen depletion and therefore fatigue. This will be needed only for prolonged intense exercise such as marathons, not a game of golf.

Most athletes using carbohydrate supplementation as a technique take it in fluid form in small amounts starting early in the exercise and at frequent intervals through the exercise. Sports drinks such as Powerade, Gatorade and SportsPlus provide a convenient method of supplementing carbohydrates during exercise, as well as providing fluid requirements in small amounts. Sports gels can also be used.

Glycogen replenishment

At the completion of strenuous exercise, the muscular stores of glycogen are usually depleted, but muscles have the capacity to replenish glycogen stores immediately after strenuous activity. In fact, the latest research indicates that athletes have the ability to restore depleted glycogen stores most rapidly within the first 15 minutes after exercise. However, this can occur only if carbohydrates are consumed in this time period. In the two hours that follow, glycogen is still replaced at a much faster rate than normal. Accordingly, the following guidelines should provide athletes with appropriate glycogen replenishment.

FIGURE 11.39 Glycogen replenishment is important after strenuous exercise.

Phase 1: First 15 minutes after exercise

- Foods high in glycogen content should be consumed. The food eaten should be easily digested; for example, high GI.
- At least 50 grams of carbohydrates should be consumed; however, the amount needed will depend on the individual athlete.
- Foods such as fresh fruit, sports drinks and supplements, and glucose lollies (such as jelly snakes and jelly beans) are recommended.

Phase 2: The two hours following exercise

- A meal high in low GI carbohydrates should be eaten during this period. This meal can also include some protein in the form of lean meat, fish or skinless chicken.
- Fifty to 100 grams of carbohydrates should be consumed during this period; however, this will depend on the individual athlete.
- Plenty of fluids, such as water and/or sports drinks, should be consumed to ensure proper rehydration.

11.7.5 Fluid replenishment and dehydration

Fluid replenishment

It is important to begin exercise well hydrated and to:

- regularly replenish fluids during the exercise
- replace fluids during the recovery period after exercise.

Failure to do so can lead to dehydration, a potentially dangerous condition.

Water loss during exercise

Exercise produces heat within the body. Without any mechanism to get rid of this heat, body temperature would rise, leading to coma and, eventually, death. Sweating or perspiring is the safety mechanism. As muscles exercise, the heat produced is carried by increased blood circulation to the skin where it evaporates in sweat, cooling the body down. The amount of sweat is determined by the intensity of the exercise, the body's surface area, the temperature of the air and the humidity of the environment. It is not unusual to lose a litre of fluid per hour in this way. Some athletes have reported to have reduced their body weight by 8 per cent after a long-distance race in a warm, humid environment.

The effects on performance and health of losing this much fluid are great. Up to two litres of sweat may be produced per hour; therefore, fluid replacement is very important. Dehydration places great stress on the cardiovascular system, leading to a decreased blood flow to skin and muscles.

Many athletes are still unaware of the importance of replacing fluids. Most drink when they are thirsty, but thirst is not a good indicator of fluid loss. A means of ensuring adequate hydration prior to an event is for the athlete to drink fluid until they are able to pass 'clear' urine. During exercise, particularly events of longer duration, athletes should drink during breaks in play (quarter-time, half-time, change of ends) and during quiet periods in the match or event. After the event, replacing fluid losses as soon as possible is vital to proper recovery.

The best choice of fluid for hydration purposes is water, although some sports drinks are also suitable, and may be preferred by some. Sports drinks may

FIGURE 11.40 Sports drinks can play an important role in helping athletes to enjoy and perform well in training and competition.

even help to increase the rate of rehydration when compared to water. Some evidence suggests that the small amount of sodium in sports drinks increases the rate of absorption of fluid from the intestines. Sports drinks have the added advantage of aiding muscle glycogen replenishment at the same time.

11.7.6 Exercising in hot and humid climates

In high temperature and humid conditions, the sweating mechanism is inefficient at reducing exercise-produced heat; therefore, prevention of heat injury is vital. This can be done by paying close attention to:

- wearing appropriate clothing (loose fitting)
- the appropriateness of the activity for the age group (long-distance runs for children are not recommended because of children's greater fluid loss potential)
- acclimatisation (getting used to conditions before competing in them through training)
- the timing of events (competitions in humid environments usually commence early in the morning to take advantage of the lowest daytime temperatures).

The cool-down period is even more important when exercising in the heat. During this stage, a constant level of activity should be maintained to keep blood circulating to the skin to increase the rate of heat loss. Rehydrating is also extremely important during cool-down. Don't forget — thirst is not a good indicator of your fluid needs.

Travelling from cooler to hotter climates requires more acclimatisation than travelling from hotter to cooler climates. Of course, the fitter you are, the faster you will adapt to the conditions. The following figure provides a good summary of the points to remember when exercising in the heat.

FIGURE 11.41 You should follow these simple rules when exercising in the heat.

1 Weather
High temperatures are bad enough, but humidity takes a lot out of an athlete. If it is humid, sweat will not evaporate easily and cannot cool the body. The coach must reduce the work level on hot and humid days and use the early morning or evening hours for training.

2 Clothing
Heavy, closely-woven clothes that cover a large proportion of the body surface act as a barrier to heat loss. Wear light, loose-fitting, open-weave clothes, which allow air to reach the skin. Leave as much of the body surface exposed as possible.

3 Acclimatisation
The ability to exercise in the sun improves quite rapidly with repeated exposure to these conditions. Start with light exercise. Gradually increase the intensity and duration of training during the first two weeks as the athlete becomes accustomed to hot conditions. Regular short breaks during the work-out help to keep the body temperature down.

4 Individual differences
Heavier and less fit individuals tend to be more affected by the heat than those who are fit and regularly exercise. Reduce the work load for those who are less tolerant to heat.

5 Fluid replacement
It is important to replace the fluid lost in sweating; otherwise, the body becomes dehydrated. Water is the main source of fluid replacement. Schedule compulsory 'water breaks' before and at frequent intervals throughout the training session.

6 Danger signs
Signs of heat exhaustion include nausea, dizziness and uncharacteristic loss in coordination, skill and stamina. The coach should be continually on the lookout for signs of heat exhaustion.

on Resources

Interactivity Exercising in the heat (int-9206)

11.7.7 Special dietary needs

Plant-based diets

Rates of plant-based diets have been increasing for a number of reasons. Plant-based diets vary according to the type of animal foods that are eliminated from the diet. Some plant-based diets include:

- *Lacto–ovo* (milk–eggs) vegetarian diets exclude the flesh of animals but include dairy products and eggs.
- *Lacto* vegetarian diets exclude the flesh of animals and eggs. They include dairy products and foods of plant origins.
- *Vegan* diets exclude all flesh foods, eggs and dairy products. Vegans eat only foods of plant origin.

Athletes following a plant-based diet need to plan their diet carefully. Their nutritional considerations are:

- ensuring that an adequate energy or kilojoule intake is maintained. This may mean that they need to eat more frequently throughout the day and include energy-dense foods such as nuts and seeds to meet their energy needs.
- maintaining adequate protein intake, due to the removal of meat from the diet. (The best sources of protein are from animal sources — they contain all the essential amino acids.) Vegetarians, in particular those on vegan diets, will need to ensure that the plant proteins they eat complement each other correctly to ensure delivery of all essential amino acids; for example, eat baked beans with wholegrain bread.
- the danger of inadequate calcium supplies in vegan diets due to the elimination of milk and dairy products. Vegans need to consume soya milk, nuts, legumes and green leafy vegetables to receive an alternative source of calcium.
- maintaining adequate mineral iron intake, which comes primarily from animal origins such as lean red meat, liver and kidney. For alternative sources of iron, vegetarians need to include plenty of legumes (kidney beans, baked beans, lentils, split peas) and green leafy vegetables, and take them with foods rich in vitamin C (such as citrus fruits) to ensure the best absorption of the iron.

Women

Because women have different cycles and metabolism to men, they have an increased need for certain nutrients.

Women need more iron than men due to the loss of the mineral through bleeding during menstruation. Everyone loses iron through the bowel, bladder and skin (perspiration). Both men and women need iron to form a compound known as **haemoglobin**, which is responsible for the transport of oxygen to all tissues of the body, including working muscle tissues.

A reduction in iron will lead to impaired performance because the oxygen supply to working muscles will be reduced. This condition is known as **anaemia** and can be experienced by both men and women if dietary intakes are low in iron.

FIGURE 11.42 Women and those who eat plant-based diets need to be aware of how much iron they consume because they are most at risk of becoming iron deficient.

Female athletes must be aware of the potential for iron depletion and know how to prevent it from occurring. For women, getting enough iron is essential, not only for sporting performance but also for good health.

haemoglobin substance in the blood that transports oxygen to the body cells

anaemia condition caused by low levels of iron in the diet

Pregnant and lactating individuals have special dietary needs. A pregnant individual has additional nutritional requirements as they care for their own health and the developing foetus. Additional energy and protein sources are required. It is suggested that an additional intake of 1200–1300 kilojoules per day is sufficient to meet the needs of the mother and the developing child. Those who are breastfeeding require additional nutrients, particularly calcium.

on Resources

Digital documents Fuel up (doc-15353)

11.7 ACTIVITIES

1 Strenuous snacking

doc-15353

a. Use the **Fuel up** worksheet in the Resources tab to read about a dietary plan and then trial it for yourself.
b. Participate in two strenuous activities (such as a 30-minute mini-triathlon); once after eating the suggested pre-competition meal, and once after eating a 'normal' breakfast. As a class, discuss how you felt during and after the event in each case.

2 Health food visit

a. Visit a health food store, chemist, supermarket and/or sports store. Compile a table listing the dietary foods on offer that claim to enhance sports performance.
b. Based on your knowledge of dietary enhancement of physical performance, would you recommend the products listed in your table as performance supplements? If recommended, indicate the type of sportsperson who might benefit from using the product and explain why.
c. If you would not recommend the supplement, explain your reasoning.

3 Sports drinks

a. Investigate the range of sports drinks available. Draw a table that summarises:
  i. the benefits each of the drinks claims to provide
  ii. the recommended intake of each drink
  iii. the price of each product
  iv. the variety or appeal of the product (for example, the range of flavours or availability).
b. Summarise your findings and recommend the best product.

4 Setting goals

You are a dietitian for a long-distance marathon runner who is requesting some dietary advice. Your client would like to know what they should eat before and after a marathon. Create instructions that advise when and what they should consume.

11.7 Exercise

11.7 Exercise

Select your pathway

LEVEL 1	LEVEL 2	LEVEL 3
1, 2, 3, 4, 5	6, 7	8, 9, 10

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- Receive immediate feedback
- Access sample responses
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Check your understanding

1. Rehydration is defined as the excessive loss of body fluids. Dehydration is defined as the replenishment of fluids. True or false?
2. MC Why must marathon runners continually rehydrate during a race?
   - A. They can lose up to one litre of water every five minutes.
   - B. They can lose up to one litre of fluid every 15 minutes.
   - C. They can lose up to one litre of fluid per hour.
   - D. They go to the toilet a lot.
3. Are the following statements true or false?
   - a. Lacto–ovo vegetarian diets exclude the flesh of animals but include dairy products and eggs.
   - b. Lacto vegetarian diets exclude the flesh of animals and eggs but include dairy products and foods of plant origins.
   - c. Vegan diets exclude all flesh foods, eggs and dairy products. Vegans eat only foods of plant origin.
4. MC Vegetarians must ensure they consume sufficient protein, because most protein is obtained through the consumption of animal meat. For a vegetarian, what is protein mostly derived from?
   - A. Fruit
   - B. Legumes
   - C. Cereals
   - D. Water
5. Consuming pasta would be an appropriate meal to consume as a competition meal. True or false?

Apply your understanding

6. **Explain** why it is particularly important for women to make sure their diet meets the recommended daily intake of calcium.
7. **Create** a set of fluid replenishment guidelines for athletes. Include information to cover pre-exercise, during exercise and post-exercise periods.
8. Although water is the best way to replenish fluids, **justify** why sports drinks are sometimes used.
9. **Justify** why a cool down is necessary especially after athletes compete in humid conditions.
10. **Create** a poster for a sports event that is held in a hot environment. On the poster, create a set of guidelines to help the athletes at the event stay safe while they exercise in the heat.

11.8 Review

Hey students! Now that it's time to revise this topic, go online to:

Review your results

Watch teacher-led videos

Practise questions with immediate feedback

Find all this and MORE in jacPLUS

11.8.1 What have I learned?

- We get seven types of important nutrients from the food we eat: carbohydrates, fat, protein, vitamins, minerals, dietary fibre and water.
- The key food nutrients and their main food sources allow us to make and use food fuels for energy.
- A healthy weight may safely be achieved through following a sensible and well-balanced diet and undertaking regular exercise and activity.
- A wide range of factors influence the dietary habits of adolescents and the general population. These include personal needs and preferences, and sociocultural, physical, psychological, political and economic factors.
- Various dietary models — including the Dietary Guidelines, the Australian Guide to Healthy Eating and the Healthy Eating Pyramid — have been developed to help Australians eat a balanced diet.
- Diet-related diseases and disorders include being overweight or obese, high blood pressure, coronary heart disease, anorexia nervosa, bulimia nervosa and osteoporosis. These conditions may be prevented and controlled by healthy eating and adequate exercise.
- Government and private sector initiatives are now in place to address the chronic problems of obesity, poor diet and reduced physical activity.
- Nutrition and diet regimes for athletes are different to non-athletes, and adequate fluid intake is important.
- Vegetarians and women have special dietary needs.

ESSENTIAL QUESTION REVIEWED

What are healthy nutrition decisions and how can I ensure I make these?

Evaluate your initial response to the essential question now that you have studied the topic.

on Resources

Interactivity Crossword (int-9207)

11.8.2 Key terms

anaemia condition caused by low levels of iron in the diet
anorexia nervosa eating disorder involving severe restriction of food intake coupled with excessive exercise and activity as part of an obsessive desire to lose weight
binge eating often associated with bulimia, where excessive amounts of food are eaten in one sitting
body fat expressed as a percentage of total body weight; can be measured in a number of ways including skin folds and underwater weighing
body mass index (BMI) an indirect way of measuring overweight and obesity by expressing body weight in relation to height
bulimia nervosa eating disorder characterised by binge eating followed by induced vomiting or purging
calcium mineral nutrient required for bone growth and prevention of osteoporosis

carbohydrates one of the key food nutrients; should comprise 45–65 per cent of the total diet; provides quick release energy and is stored as glycogen in the muscles
coronary heart disease narrowing of the coronary arteries of the heart or complete blockage of the coronary arteries leading to heart attack
crash diets irresponsible activity designed to lose weight rapidly; often involves withdrawal of important food nutrients or food groups; weight lost is nearly always quickly put on again
dietary fat a nutrient in food and an essential ingredient of a balanced diet; should comprise 20–35 per cent of daily food intake
dietary fibre part of a plant that cannot be digested by the human body; aids in the digestive process and passage of food through the small and large intestines
fructose simple carbohydrate found as sugar in fruit
GI index a ranking of carbohydrates from 0 to 100 according to their effect on blood glucose levels
glycogen stored form of glucose found in the muscles and liver; used as a source of fuel for both aerobic and anaerobic energy production
haemoglobin substance in the blood that transports oxygen to the body cells
high blood pressure also called hypertension; a major risk factor in coronary heart disease; measured in and expressed as systolic pressure over diastolic pressure
high GI foods foods ranked higher than 55; have an immediate effect on blood glucose levels
hypoglycaemia low levels of blood sugar (glucose) causing a feeling of fatigue
incomplete proteins lack of one or more essential amino acids; found in plants
iron mineral found in the body; inorganic substance required to assist in transportation of oxygen in the blood; lack of iron can cause anaemia
kilojoule measure of the energy contained in foods; the standard metric measurement of energy
low GI foods foods ranked less than 55; have a gradual and sustained effect on blood glucose levels
minerals inorganic elements found in food that ensure body functions and structures operate effectively
negative energy balance amount of kilojoules used during daily activity is greater than the amount eaten; leads to weight decrease
positive energy balance amount of kilojoules used during daily activity is less than the amount eaten; leads to weight increase
protein made up of amino acids; found in animal and plant foods; essential for most body functions; should comprise 10–15 per cent of daily food intake
recommended dietary intake (RDI) provides recommendation for the daily intake of all nutrients; these change for various age groups and stages of growth
satiety a feeling of fullness and absence of hunger
starches form of complex carbohydrate found mainly in bread, cereal, pasta and rice
sugars simple carbohydrate found in fruit, honey, confectionery and soft drink; sugars have a high glycaemic index
vitamins organic compounds needed in small quantities to promote growth and maintain body functions

11.8 Exercise

11.8 Exercise

Select your pathway

LEVEL 1	LEVEL 2	LEVEL 3
1, 2, 3, 4, 5, 6, 7, 8, 9, 10	11, 12, 13, 14, 15, 16	17, 18, 19, 20

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Check your understanding

Identify whether the following statements are true or false.

Statement	True or false
1. All fats are bad for you.	
2. Water makes up a majority of the human body.	
3. You should have an equal amount of fruit and vegetables each day.	
4. All foods that are low in fat are good for you.	
5. The Australian Guide to Healthy Eating is a pie chart indicating what proportions we should consume of the five different food groups.	
6. Many different factors influence our food choices.	
7. Having increased knowledge about how to read and understand food labels can help you make healthier food choices.	
8. A 15-year-old female should consume at least seven serves of dairy a day.	
9. Poor diet can increase your risk of colorectal cancer.	
10. After 90 minutes of continuous activity, the body will predominately use protein as a fuel.	

Apply your understanding

11. **Devise** two pieces of advice for your friend who is overweight.
12. **State** the nutrients your body needs.
13. **State** why protein is important.
14. **Explain** the difference between low and high GI foods using examples.
15. **State** three foods that are high in fibre.
16. **Outline** the number of serves of each food group that you should consume, and **state** what you should eat in moderation.
17. **Evaluate** how banning soft drinks in schools can help the health of young people.
18. **Justify** why athletes need to modify their diet to meet their energy needs.
19. **Justify** why those who follow veganism are at risk of nutritional deficiencies.
20. **Create** a meal and snack suitable for a vegetarian that contains food from each of the five food groups from the Australian Guide to Healthy Eating.

GLOSSARY

activity analysis recording and analysing movement and skill data from a game, sport or activity; the data is analysed to appraise a player's performance
addiction dependence on something, such as alcohol or other substances
adolescence period between childhood and adulthood; the World Health Organization defines it as between the ages of 10 and 19
aerobic power the body's ability to continue exercising over long periods using the large muscles of the body. It is also known as aerobic fitness or aerobic stamina/endurance
aerobic training exercise that lasts longer than five minutes without any rest
aerobic training zone a level of intensity that causes the heart rate to be high enough to cause training gains, usually between 70 and 85 per cent of its maximum rate.
affective disorders types of mental disorder; for example, depression and mania
agility the ability to start, stop and change direction rapidly at maximum speed, without losing balance
agonist prime mover; the muscle that creates movement
airway the passage that leads from the mouth, nose and throat to the windpipe
alveoli site of exchange in the lungs of oxygen and carbon dioxide to and from the blood
amphetamines illicit drugs with several names, such as speed or ice; affect the activity of chemicals in the brain, causing anxiety, shaking and panic attacks
anaemia condition caused by low levels of iron in the diet
anaphylaxis a sudden, severe allergic reaction that may be fatal if emergency treatment is not given immediately
angle of release angle at which a projectile is released
anorexia nervosa eating disorder involving severe restriction of food intake coupled with excessive exercise and activity as part of an obsessive desire to lose weight
antagonist muscle that relaxes to allow movement to take place
anxiety disorders types of mental disorder; for example, obsessive–compulsive disorder, panic disorder and social phobia
aorta main artery of the body; delivers blood from the left ventricle of the heart
appraisal support providing feedback to others to make sense of a particular situation
arteries blood vessels that carry blood away from the heart; they have thick, elastic walls
arteriosclerosis disease of the arteries where deposits build up inside the artery walls and blood flow is restricted
assertive stating your point of view without being overly aggressive and without putting others down; being able to say 'no'
assertive being able to stand up for your own or other peoples' views or rights in a calm and positive way without being aggressive or submissive
associative stage second stage of skill learning. During the associative or practice stage, the individual is beginning to get the feel of the movement and fewer errors are made.
asthma medical condition characterised by bronchial spasms that limit the flow of air to the lungs, causing difficulty breathing
atrophy when the circumference of a muscle becomes smaller due to lack of use
attitude an outlook on something; what a person thinks; shown in a person's way of behaving
augmented feedback information provided by visual, verbal or aural (hearing) signals
authoritarian style of coaching typically characterised by a strict and disciplined approach, thorough organisation and planning, attention to detail and total commitment to the role
automated external defibrillator (AED) an accurate and easy-to-use computerised medical device that analyses a person's heart rhythm and recognises a rhythm that requires a shock. It uses voice and visual prompts to guide the first aider.

autonomous stage third and final stage of skill learning. In the autonomous or automatic stage, the individual is able to complete the skill virtually without conscious control.
balance the ability to remain stable, whether static (still) or dynamic (moving)
base of support part or parts of the object in contact with the support surface
basic skill drills practice drills designed to allow the individual to learn and perform skills in an environment that ignores outside elements such as the opposition or movement
behaviour patterns the way in which we behave; can be similar in certain situations
beliefs a philosophy or viewpoint on issues
binge-drinking drinking large amounts of alcohol in a short period of time; drinking constantly for a number of days; drinking to get drunk
binge eating often associated with bulimia, where excessive amounts of food are eaten in one sitting
blood pressure measure of how much force is created to push the blood through the blood vessels
body composition describing body shape or type
body fat expressed as a percentage of total body weight; can be measured in a number of ways including skin folds and underwater weighing
body language non-verbal cues that can be read from the way a person holds their body
body mass index (BMI) an indirect way of measuring overweight and obesity by expressing body weight in relation to height
bulimia nervosa eating disorder characterised by binge eating followed by induced vomiting or purging
burden of disease a measure of the impact of diseases and injuries
bystander person who is aware that a bullying situation is occurring but is not directly involved in it
calcium mineral nutrient required for bone growth and prevention of osteoporosis
cannabis illicit depressant drug that can have a hallucinogenic effect
capillaries the smallest blood vessels
carbohydrates one of the key food nutrients; should comprise 45–65 per cent of the total diet; provides quick release energy and is stored as glycogen in the muscles
carbon footprint the amount of pollution, specifically greenhouse gas emissions, that is produced by something or someone
cardiac arrest disturbance of the normal electrical activity in the muscles of the heart's larger pumping chambers resulting in ineffective circulation
cardiac muscle muscle of the heart
cardiac output volume of blood pumped around the body in one minute. Cardiac output is measured by stroke volume × heart rate
cardiopulmonary resuscitation (CPR) an emergency technique that combines rescue breaths with external chest compressions at a ratio of 30:2 at 100–120 compressions per minute; used when a casualty is unconscious and is not breathing
cardiovascular disease any disease related to the heart and blood vessels, such as stroke, coronary heart disease and vascular disease, including hypertension and atherosclerosis
cartilage tissue that protects bones at the joints from rubbing against one another
casual style of coaching characterised by a relaxed and almost detached approach, with the coach assisting only when advice is sought by the athlete
centre of gravity the point in any object or body through which the downward force of gravity acts
circuit training fitness training method involving a series of activity stations in sequence; designed to improve specific components of fitness
closed skills skills performed in a stable and predictable environment. They allow the performer to plan their movements in advance.
cocaine illicit stimulant with hallucinogenic properties
coercion persuading or compelling someone to do something through the use of threats or force
cognitive stage first stage of skill learning. Individuals who are at the cognitive or beginner stage need to know how to perform the basic movement patterns of the skill in the correct sequence.
command style of coaching that involves the coach dictating what will be done and how it will be done via direct instruction

commitment committing to and believing wholeheartedly in a cause, be it a viewpoint, opinion, event, course of action or person

communication the skill of being able to talk and listen to others

community a group of people living or working in the same place or environment and acting collectively in the areas of social values and with shared responsibilities

concussion acute injury to the head caused by collision

conflict a difference of opinion

conflict resolution when two or more people who have some disagreement work together to come to a solution

consent informed and freely given agreement to engage in an activity, or permission for a specific thing to happen. This includes agreement and permission giving in online and offline situations.

consequences results of a person's actions; may be either positive or negative

continuous skills skills that have no distinct beginning or end; such skills or movements are often repetitive or rhythmic in nature

contraception any method or device that prevents conception and, therefore, a pregnancy

coordination motor skills component of fitness involving control of movement, such as hand–eye coordination

coronary arteries arteries that supply blood to the heart muscle

coronary heart disease narrowing of the coronary arteries of the heart or complete blockage of the coronary arteries leading to heart attack

coronary heart disease (CHD) narrowing of the coronary arteries of the heart or complete blockage of the coronary arteries leading to heart attack

crash diets irresponsible activity designed to lose weight rapidly; often involves withdrawal of important food nutrients or food groups; weight lost is nearly always quickly put on again

credentials documents or other evidence that show a person's qualifications or identity — like a set of papers or cards that prove who a person is and what they can do

credible reliable; trustworthy

critical literacy a skill that involves questioning and examining ideas, and that requires you to analyse, interpret, evaluate and respond to the texts you read or listen to

cultures more than one culture as First Nations Peoples are not homogenous

cyberbullying the use of electronic communication to bully a person, typically by sending messages of an intimidating or threatening nature

decision-making the ability to weigh up game situations and decide which option to take and when to take it

defensive tactics and strategies structured plans or moves used by a team or individual to prevent the opposition from scoring

defibrillation the application of electrical therapy that allows the heart to re-establish an effective rhythm

democratic style of coaching typically characterised by consultation and shared decision-making by the coach with others

depression extreme feelings of hopelessness, sadness, isolation, worry and withdrawal that last for a prolonged period and interfere with normal activities

diastolic blood pressure the pressure of blood in the arteries as the heart relaxes

dietary fat a nutrient in food and an essential ingredient of a balanced diet; should comprise 20–35 per cent of daily food intake

dietary fibre part of a plant that cannot be digested by the human body; aids in the digestive process and passage of food through the small and large intestines

digital footprint any information that you leave about yourself in an online environment

discrete skills skills or movements of brief duration that have a distinct beginning and end

disease transmission passing diseases from one person to another; includes infections and parasitic diseases

dislocation when a bone slips out of a joint and the bones are forced from their normal positions

distributed practice short sessions interspersed with periods of rest, during which either feedback is provided or another skill is practised

diversity the differences between people and groups of people, including those of culture, race, religion, gender, and life experience. Diversity means understanding that each individual is unique and recognising individual differences.

Dreaming in First Nations Australian cultures, the time when the Earth took on its present form, and cycles of life and nature began. Dreaming stories pass on important knowledge, laws and beliefs. Dreaming is continuous (non-linear) – it is past, present and future.

DRSABCD action plan a plan of action that prioritises checking for danger, seeking a response from the casualty, sending for help, checking the airway and breathing of the patient, commencing CPR and applying a defibrillator if necessary, and in that order

dry spirometer instrument used to measure vital lung capacity

ecstasy illicit drug; extremely dangerous, causing paranoia, organ damage, insomnia and dehydration

emotional support sympathetic understanding and behaviour towards another team member

emotional wellbeing awareness of and ability to cope with both positive and negative emotions

empathy the ability to identify, appreciate and understand another's situation or feelings

expiration breathing out

fast twitch muscle fibres white muscle fibres that are suited to performing anaerobic activity

feedback information provided to a performer about the quality and/or outcome of the performance

fine motor skills delicate, precise movements that engage the use of small muscle groups

first aid the initial or first help that is given to an injured or ill person. It is administered until medical help arrives.

fitness physical capacity to do various physical activities, measured by testing a range of components

flexibility the range of motion of specific joints and the muscles that act on them; may be static or dynamic

flexion the movement that decreases the angle of a joint; for example, bending the elbow

food miles the distance that food travels from where it is produced to where it is eaten

force summation the correct timing and sequencing of the parts of your body and muscles through a range of motion

frequency how often physical activity is undertaken

fructose simple carbohydrate found as sugar in fruit

fundamental movement skills the foundation movements of more specialised, complex skills in games, sports, dance, gymnastics and physical recreation activities

game plans style of play or organisation adopted by teams and developed by or in conjunction with a coach

gatekeepers people or things that control our access to ideas or information

gender equality when people of all genders have equal rights, responsibilities and opportunities

gender identity how you perceive your gender, how you show this to others, and how you want others to treat you

gender norms ideas about how women and men should be and act

gender stereotypes generalisations (not necessarily accurate) of how individuals of a certain gender should behave or conduct themselves

GI index a ranking of carbohydrates from 0 to 100 according to their effect on blood glucose levels

glycogen stored form of glucose found in the muscles and liver; used as a source of fuel for both aerobic and anaerobic energy production

grid games an extension of intermediate and advanced skill drills; take place within a grid or defined area and usually involve a relatively small number of players

gross motor skills movements involving the use of large muscle groups that result in a coordinated action

guided discovery style of coaching in which the coach sets forward various options that the athlete has the freedom to explore and decide between

haemoglobin substance in the blood that transports oxygen to the body cells

harassment a kind of bullying; any form of behaviour that is not wanted or is offensive, humiliating or intimidating

harm minimisation any action or strategy designed to remove or reduce risk and, therefore, prevent or minimise harm

harm minimisation refers to a range of public health policies designed to lessen the negative social and/or physical consequences associated with various human behaviours, both legal and illegal

health literacy the degree to which individuals have the capacity to find, process and understand health services and information and make decisions about their health.

health literacy the ability to find, read, understand and use healthcare information to make good health decisions and follow instructions for treatment
health promotion the process of enabling people to increase their control over, and improve, their own health
heart muscular pump responsible for pumping blood around the cardiovascular system
heterosexual being sexually attracted to someone of the opposite gender
high blood pressure also called hypertension; a major risk factor in coronary heart disease; measured in and expressed as systolic pressure over diastolic pressure
high GI foods foods ranked higher than 55; have an immediate effect on blood glucose levels
holistic characterised by the treatment of the whole person, taking into account mental and social factors, rather than just the symptoms of a disease
homophobia irrational fear of, dislike of or discrimination against people who are homosexual or same-sex attracted. It can also refer to stigma arising from social ideologies about homosexuality.
homophobic bullying discriminating against people who are, or who are thought to be, same-sex attracted
hypertrophy when the circumference of a muscle becomes larger as a result of exercise
hypoglycaemia low levels of blood sugar (glucose) causing a feeling of fatigue
illicit drug any drug that is banned by law
impulse the force applied to an object and the length of time the force is applied; change in momentum
incomplete proteins lack of one or more essential amino acids; found in plants
independence the ability to think, decide and act for yourself, giving consideration to, but without being adversely influenced by, other factors, pressure, coercion or opinions
informational support the exchange among team members of necessary information
inspiration breathing in
instrumental support the practical support that team members offer each other
intensity measurements of intensity include what speed or heart rate (measured as a percentage of maximum heart rate) is achieved during activity
intergenerational trauma trauma that has lasting effects carried on from those who directly experienced it to their children and grandchildren
intergenerational trauma trauma that gets passed down from those who directly experience it to the next generations. This can negatively affect the health and wellbeing of the future generations.
interval training periods of work broken up with periods of rest; can be used to train the ATP–CP system or the anaerobic glycolysis system, depending on the intensity of the work period and the length of the rest period
intimacy a feeling of being close, emotionally connected and supported
intimate relationship close relationship with a high level of sharing, trust and understanding
iron mineral found in the body; inorganic substance required to assist in transportation of oxygen in the blood; lack of iron can cause anaemia
isometric when a muscle produces force without changing length
isotonic when a muscle produces force while changing length, either lengthening or shortening
key elements distinct actions that join to make up a movement phase of a skill
kilojoule measure of the energy contained in foods; the standard metric measurement of energy
kinaesthetic feedback feedback about the 'feel' of a movement skill
knowledge of performance feedback about the quality of the performance itself
knowledge of results feedback about the outcome of the performance
LGBTIQA+ an acronym for lesbian, gay, bisexual, trans, intersex,queer and asexual. The 'plus' describes all the other genders and sexual orientations that do not fit into the initial letters.
ligaments straps of slightly elastic tissue that cross over joints, attaching bone to bone and providing stability
line of gravity imaginary vertical line passing downward through the centre of gravity of a body or object
low GI foods foods ranked less than 55; have a gradual and sustained effect on blood glucose levels
marginalised group people, or groups of people, who are pushed to the fringes of society by others in the community, and those who are different from the perceived 'norm'
massed practice practice of a longer duration
maximum heart rate (MHR) approximated by subtracting your age from 220. For example, a 15-year-old would have an MHR of 220 – 15 = 205.

mental health related to emotions, thoughts and behaviours; includes anxiety-related problems, such as phobias, and mood (affective) problems, such as depression

mental health relates to emotions, thoughts and behaviours. It involves the functioning of the mind and ability to cope with daily stresses and decision-making.

mental practice involves imagining or visualising a skill in the mind

minerals inorganic elements found in food that ensure body functions and structures operate effectively

moderate intensity sub-maximum exercise that increases heart rate and breathing rate somewhat above resting levels

modifiable factors those factors you can take measures to change

movement concepts refers to how skills are to be performed (e.g. striking the ball *hard*); also known as elements of movement

movement phases division of a movement or skill into a number of phases or parts, such as the preparation phase, the execution phase and the follow-through phase

movement sequences a combination of fundamental movement skills and movement elements that enables movement to respond in a range of situations;a planned order of movements

muscle pump effect the effect the skeletal muscles have on blood flow in the veins. As the muscles contract, they squeeze against the veins, forcing blood to travel towards the heart.

muscular endurance ability of a muscle or muscle group to sustain or repeat a force over a long period

muscular power a combination of speed and strength. When strength is exerted quickly, it is called power.

muscular strength exertion of a single maximum force by a muscle or muscle group

negative energy balance when the number of kilojoules used during daily activity is greater than those eaten; body weight will decrease if negative energy balance is maintained

non-binary does not identify as exclusively male or female

non-modifiable factors those factors over which individuals have little to no control

objective judgements use methods, techniques or tools for appraising the proficiency of the movement performance

objective methods rely on data or observations

offensive tactics and strategies structured plans or moves that have the primary purpose of scoring or creating a scoring opportunity

official any person who controls the actual play of a sporting competition by applying the rules and laws of the sport to make judgements on performance, time scores and whether any rules have been broken

one-on-one defence involves each player on a team being responsible for marking an opposition player

open skills skills performed in an environment that is variable and unpredictable; usually externally paced and performed in a constantly changing environment

osteoarthritis joint cartilage degenerates and causes pain

osteoporosis calcium deposits in the bone diminish, causing a decrease in bone density, increased risk of fracture and curvature of the spine

part practice breaking down and practising a skill in its 'parts' or sub-routines

pedometer device that measures the number of steps taken during the day and estimates the distance covered in kilometres

peer group group of friends of a similar age with similar interests, often from a similar social background

peer group group of people of a similar age with similar interests, often from a similar social background

performance-enhancing drugs substances that are used to improve the sports performance of humans

performance measures methods, techniques or tools for judging or assessing the level of performance

personal boundaries the limits you set for yourself and for your interactions with others to help you know what you are comfortable with

personal identity the qualities, skills, attitudes and beliefs that make each individual unique

physical activity guidelines the daily physical activity guidelines state that children and young people should do at least 60 minutes of moderate to vigorous exercise each day

physical health physiological functioning of the body

physical practice practice in which the skill is actually performed physically

plasma clear fluid contained in blood that transports red and white blood cells, nutrients and waste

platelets cells in blood that cause it to clot when blood vessels are damaged; produced in bone marrow
plyometrics used to train for power through activities such as bounding and depth jumping
positive energy balance amount of kilojoules used during daily activity is less than the amount eaten; leads to weight increase
power the ability to exercise influence or control over others
prejudice-based bullying bullying behaviour as a result of prejudice that relates to perceived or actual differences
privilege unearned or unacknowledged advantages over others
problem-solving style of coaching in which the athlete is challenged to respond to and solve problems set by the coach
proficiency of movement (or skill proficiency) the achievement or attainment of a movement goal with maximum certainty, minimum energy expenditure and minimum movement time (where speed is essential)
progression or progressive overload training principle that requires the workload to be progressively increased at regular intervals; for example, by increasing the weight lifted, the number of repetitions, the distance run or the time over which the activity is performed
projectile the object propelled into the air as a result of force application, such as a soccer ball or even a body itself
projectile motion the motion of objects such as balls or implements that are thrown, struck or kicked into the air
pro-social a social behaviour that benefits others through methods such as helping, sharing, donating, cooperating and volunteering. Obeying the rules is also seen as pro-social behaviour.
protein made up of amino acids; found in animal and plant foods; essential for most body functions; should comprise 10–15 per cent of daily food intake
pulmonary circulation blood from the heart is pumped to the lungs for oxygenation and then transported back to the heart
qualitative analysis process of observing, analysing and appraising human movement performance
racism when prejudice is accompanied by the power to discriminate against, oppress or limit the rights of others
radial pulse pulse on the thumb side of the wrist used to measure heart rate
reaction time time taken to respond to, or initiate movement after, a given signal or cue; for example, a starter's gun
reciprocal style of coaching in which the athlete takes some responsibility for their own development, with the coach monitoring progress and development
reciprocal inhibition pair of muscles working together; the antagonist muscle relaxes and the agonist muscle contracts to create movement
recommended dietary intake (RDI) provides recommendation for the daily intake of all nutrients; these change for various age groups and stages of growth
recovery position the body position a casualty is placed in to ensure the airway is kept open and clear of obstructions
red blood cells comprise 99 per cent of all blood cells and carry oxygen and carbon dioxide to and from the cells and muscles; contain haemoglobin
repetition also known as a rep; a single effort or performance of an exercise
repetition maximum (RM) the heaviest load that can be successfully completed in a given number of efforts or exercises
rescue breaths given to a casualty who is not breathing; the breath will take one second to deliver and will make the casualty's chest rise
resilience the ability to manage a difficult situation and 'bounce back'; increases the chance of responding well to future challenges
resilience the ability to recover quickly from difficulties; to be able to 'bounce back' from challenges
resistance training a type of training that causes muscles to work against resistance from a body part or weight
respect recognising and appreciating the differences between people and treating them fairly
resting heart rate the number of heartbeats per minute while at rest

RICE management plan used to achieve the immediate treatment of a soft-tissue injury through the application of rest, ice, compression and elevation

RICER a management plan for soft tissue injuries that follows up the immediate treatment with a referral to medical care for longer-term management of the injury

risk meeting challenges that have the potential to cause harm, loss or injury

safer sex protecting the health of both you and your sexual partner

SALTAPS simple checklist to use when diagnosing a sports injury; stands for stop, ask, look, touch, active movement, passive movement and stand

same-sex attraction people who are emotionally and sexually attracted to people of the same sex. They often identify themselves as being gay or lesbian.

satiety a feeling of fullness and absence of hunger

scorers sporting officials responsible for maintaining an accurate record of the scores during a game or event

self-efficacy a person's belief in their ability to be successful across a range of challenging situations

self-esteem the way you feel about yourself; high self-esteem means you feel good about yourself and you are confident in your abilities

septum muscular wall separating the right and left sides of the heart into two pumps

serial skills series of discrete skills strung together to form a more complicated action

sets the number of repetitions in a sequence of exercises

sexting laws sending photos, images, video or text messages of a sexual nature via mobile phones and social media sites

sexual activity sexual behaviour; usually involves contact with the genitalia

sexual behaviour a broad range of behaviours in which we display our sexuality

sexual coercion when someone won't accept 'no' and continues to try to convince you to engage in sexual activity

sexual health a positive approach to sexuality and sexual relationships; having safe and pleasurable sexual experiences, free of coercion, discrimination and violence

sexual identity how you think of yourself in terms of who you are romantically and/or sexually attracted to

sexuality how you see and express yourself sexually

sexually transmissible infection (STI) an infection that is spread via sexual activity

sexual orientation a person's sexual or romantic attraction to another person; can include, but is not limited to, heterosexual, lesbian, gay, bisexual and asexual

sexual relationship a relationship that involves any form of sexual activity

signs of life consciousness, responsiveness, normal breathing, signs of movement

skeletal muscle all the muscles that pull on bones to create movement

skill a learned ability to bring about an expected result with certainty, often with little effort

skill themes action words that describe the motor skills needed to complete a movement; includes locomotor (e.g. walking, running), non-locomotor (e.g. turning, swinging) and manipulative (e.g. throwing, kicking) skills

slow twitch muscle fibres red muscle fibres that are suited to performing aerobic activity

SMART goal goals that are specific, measurable, achievable, realistic and timely

smooth muscle involuntary muscle that contracts and relaxes without conscious thought

social health ability to develop and maintain positive relationships with others, including family, friends, peers and colleagues

socialisation the way we are brought up and expected to behave in society, often based on gender

specialised movement skills movement skills that are required in more organised games and activities

specificity training principle that ensures that activities performed within a training program are directly related to the sport or activity being trained. This includes energy systems, components of fitness, muscle groups and movement patterns.

speed can refer to whole-body speed, where the aim is to move from point A to point B as quickly as possible, or part-body speed, where one or more parts of the body move as quickly as possible to complete a movement

spiritual health encompasses our beliefs, values, morals and ambitions

sporting conduct conforming to the rules of sport; an aspiration or ethos that the activity will be enjoyed for its own sake, with proper consideration for fairness and ethics, and respect for one's opponents
stability an object's resistance to movement from a balanced position. Static stability is when the object is at rest; dynamic stability is when the object is in motion.
starches form of complex carbohydrate found mainly in bread, cereal, pasta and rice
stereotypes conventional views or ideas (not necessarily accurate) about a group of people
stroke volume volume of blood pumped from the left ventricle of the heart in one beat
subjective judgements based on feelings or impressions and which do not involve the use of techniques or tools for appraising the proficiency of the movement performance
subjective methods rely on own perceptions
substance-use disorders type of mental disorder; involves harmful use of, and addiction to, drugs (including alcohol)
sugars simple carbohydrate found in fruit, honey, confectionery and soft drink; sugars have a high glycaemic index
sustainable able to be maintained at a certain rate or level (e.g. does not deplete our natural resources)
synovial fluid lubricating substance found in synovial joints
synovial joints freely movable joints that have cartilage, ligaments and synovial fluid; for example, the knee or elbow
systemic circulation blood from the heart circulates throughout the arteries and veins of the body and then returns to the heart
systolic blood pressure the pressure of blood in the arteries as the left ventricle of the heart contracts
tactical proficiency the ability to weigh up game situations and decide which option to take and when to take it
target heart rate percentage of maximum heart rate an athlete must work at to improve fitness. This is 50–70 per cent of maximum heart rate for moderate intensity activity and 70–85 per cent for vigorous intensity activity.
tendons attach muscles to bones
timekeepers sporting officials who make sure that competition times are kept to, and that periods of play follow the rules of the sport
transphobic bullying discriminating against individuals who are transgender; that is, individuals whose gender is not the same as, or who do not identify with,the sex they were assigned at birth
trauma a response to an event that is so overwhelming it leaves the person unable to come to terms with it
truth telling to record evidence about past actions and share culture, heritage and history with the broader community
type a key principle of training; refers to the kind of exercise performed
umpires and referees sporting officials responsible for regulating the conduct and playing of sporting events
unconscious a condition in which a person is unaware of or does not respond to external influences
upstander someone who sees or knows about bullying or other forms of violence that is happening to someone else and speaks up for the person or acts on their behalf
values beliefs about what is important and what is right or wrong
values beliefs about what is important; guide our attitudes and behaviour
vascular system the network of blood vessels, comprising arteries, capillaries and veins
veins blood vessels that return blood to the heart
velocity of release the single most important factor for achieving maximum distance of a projectile; the greater the velocity of release, the greater the distance achieved
ventricles pumping chambers of the heart. The left ventricle pumps blood into the systemic circulation and the right ventricle pumps blood into the pulmonary system
vigorous intensity high-intensity activity, such as running and playing sport, which raises heart rate and breathing rate significantly
vital capacity maximum amount of air that can be expelled from the lungs after a maximal inspiration
vitamins organic compounds needed in small quantities to promote growth and maintain body functions
VO_2 maximum maximum amount of oxygen that can be used by the muscles to produce work (usually measured in millilitres per kilogram of body weight per minute)

white blood cells part of the immune system; fight disease-causing organisms by absorbing and digesting them
whole practice form of practice in which a skill is practised in its entirety
World Health Organization (WHO) responsible for leadership of global health matters for the United Nations
zone defence involves players guarding or defending a particular space on the court or field, rather than individual opposition players

INDEX

A

ability-to-talk test 360–1
Aboriginal and Torres Strait Islander Lived Experience Centre 185
Aboriginal heart health 186
absorption of force 258
accuracy 258
active and sustainable lifestyles 210
active transport 289
activism 15
activity analysis 275, 282
addiction 158
adolescence 5, 42, 66, 95, 179
  definition 66
  mental health during 157
aerobic fitness 361, 369, 370
aerobic power 369, 370, 391
aerobic training 384, 391
aerobic training zone 361, 391
aerosol 119
affective disorders 157, 158
agility 371, 373, 391
airway 134, 135, 140–1, 165
alcohol 109–18
  assisting friend under influence 126
  and consent 114–15
  consumption and harm 116–18
  drink spiking 116
  effects on body 113–14
  standard drink labels on 112–13
  types 111–12
alcohol and consent 80–1
amphetamines 123, 165
anaphylaxis 146, 165
  management 146
  signs and symptoms 146
angle of release 259, 282
anxiety disorders 157, 158
appraisal support 301, 326
assertiveness 33, 88, 105–8, 192, 197
  definition 106, 197
assertive communication 87–9, 92
associative stage 248, 282
asthma 145, 165
ATP–CP system 383
attitudes 8, 10, 14, 15, 19, 21, 56, 58, 61
  and beliefs 195
augmented feedback 252, 282
augmented reality 323
Australia New Zealand Food Standards Code 112
Australian Human Rights Commission 70, 321
Australian Institute of Health and Welfare (AIHW) 183
Australian Secondary School Students' Alcohol and Drug (ASSAD) 120
Australia's physical activity 355, 358
authoritarian leadership style 308, 326
automated external defibrillator (AED) 137, 138, 165
autonomous stage 248, 282

B

badminton 340–1
  doubles 341
  singles 341
  tactics and strategies in 341
balance 354, 372, 391
  stability and 259–62
base of support 260–1, 282
basic skill drills 266–7, 282
  definition 266
basic skills 240, 330
  building on 241
behavioural expectations in relationships 27
behaviour patterns 15, 51
beliefs 6–15, 52
  attitudes and 195
  definition 6
  values and *See* values
binge-drinking 111, 165
Binyaarns bush medicine 220
biomechanics 254–63
  balance and stability 259–63
    base of support 260–1
    centre of gravity 261
    line of gravity 261–2
  concepts 254
    defined 254
  force production and application 256–8
  to produce better results 255
  projectile motion 259
  refining skills using 254–63
bleeding and first aid 144
blood alcohol concentration (BAC) 112, 115
blood-borne virus 149
body composition 371, 391
body confidence 11
body image 11, 154, 155
body language 31, 51
  definition 31
Borg rating scale 359
breathing and first aid 135–6, 141–2
breathing rate 362
bush foods 219, 221
bystander 36, 37, 51
  behaviour 36–38
  definition 37

C

calling triple zero 127
cannabis 121, 165
captain, qualities of 309
cardiac arrest 137, 165
cardiopulmonary resuscitation (CPR) 136, 165
  for infants 143
  for small children 143
cardiovascular disease (CVD) 185–6
casual leadership style 308, 326
catch, performance criteria for 275
catfishing 224
centre of gravity 261, 282
CHANGE IT principles 334
changing relationships 5
chest compression 136–7
circuit training 381, 383, 391
closed skills 242–3, 282
clothing and blood 150
coaches 305–7, 315
  roles and responsibilities 305–6
  skills and characteristics 306–7, 309
cocaine 122, 165
coercion 70, 95
cognitive stage 247–8, 282
command leadership style 308, 326
commitment 27, 51
  definition 27
Commonwealth Criminal Code Act 1995 (child pornography) 83

communication 27, 32, 51, 68
definition 27
online 82–5
respecting boundaries 78–9
team leaders and members 301–3
community 201–2, 233
definition 202
marginalised groups in 204–8
support services in 153–63
community benefits of physical activity 289–91
community health services 157
evaluating 160–3
community support services 157–9
evaluating 159–63
concussion 165
conditioning 356, 385
conflict 14, 51, 193–4
conflict resolution 38, 193, 195, 197
in relationships 32
consent 76–86, 95
alcohol and 114–15
alcohol, other drugs and 80–1
definition 77
giving and receiving 79–81
information 84
and law 79–80
and online communication 82–5
sexual relationships and 76–8
consequences 106, 165
definition 106
constructive feedback 252
continuous skills 243–4, 282
definition 244
continuous (aerobic) training 384
contraception 88–9
cool-down 385
coordination 372, 391
Country/place 218–22
First Nations Australians' traditional diets 218–22
Court of Arbitration for Sport 321–3
COWS acronym 134
credible 171, 197
criterion-referenced standards 274–5
critical literacy 170–1, 198
definition 171
cultural factors 59, 204
identity 9
social diversity 9
stereotypes 22
values and expectations 8–11
cyberbullying 225–7, 233

D

danger 139–40
decision-making 35, 269, 282
defensive tactics and strategies 339–40, 344
definition 339
one-on-one defence 339
zone defence 339–40
defibrillation 137–8, 165
democratic leadership style 308, 326
depression 158, 174, 185
diabetes 186
diet 186–8
digital devices and video analysis software 278
digital footprint 82, 95
direction 338–9
direct observation 360
discrete skills 243–4, 282
definition 244
discrimination, types of 19, 23, 57, 58, 70, 71
disease transmission 144, 165
dislocation 147
distributed practice 250, 282
definition 250
diversity 12, 51, 62
domestic violence 70, 75
dreaming 218, 233
drink spiking 116
drop punt kick, performance criteria for 276–7
DRSABCD action plan 134–9, 165
airway 135, 140–1
breathing 135–6, 141–2
compressions 136–7, 142
danger 134, 139–40
defibrillation 137–8, 142–3
response 134–5, 140

E

eating sustainably 213–16
e-cigarette 119
economic violence 75
ecstasy 122, 165
education and sexual health 59
e-mental health (eMH) services 160
emergencies
call for help in 133–4
numbers 134
responding to 130–53
Emergency + app 125
emotional benefits of physical activity 289
emotional health 101, 288
and wellbeing 351
emotional support 301, 326
emotional violence 75
emotional wellbeing 40–8, 51
aspects of 41
definition 41
emotions 26–39
dealing with 40–2
transitions effect 42
empathy 33, 69, 95
energy demand 377
Enhancing Online Safety Act 2015 (Cwlth) 83
environmental impact, sustainable food 211–13
epinephrine injectors 146
eSafety Commissioner 84
ethics, in sport 312–24
exercise guidelines, national 355, 358
expectations, societal 7–8, 29
and mental health 43
external bleeding management 144
external feedback 252

F

'fair go', concept of 312, 317
fairness, in sport 320–3
fair play 312–15, 324
family 28
source of health information 156
Family Planning Alliance 180
feedback 251–3, 282
female participation in major sporting codes 314
femininity 86
fine and gross skills 244–5
fine motor skills 244, 82
definition 244
first aid 130–53, 165
administer 144–9
anaphylaxis 146–7
asthma 145–6
bleeding 144
soft-tissue injuries 147–9
definition 132
five Ps of 132
managing blood using 150–2
practice 151–2
First Nations Australians 9, 22
bush medicine 220
cardiovascular disease 185–6
diabetes 186

First Nations Australians (*cont.*)
diet and 186–8
health 176–7, 183
health and land 218
health care workers 185
kidney disease 186
mental health 185
respiratory diseases 185
rheumatic heart disease 185–6
self-assessed health status 184
in sport 317–20
sportspeople 318, 319
traditional diets 218–22
fitness 349–54, 391
components 368–9
importance 369–72
measuring 368–9, 372–4
definition 349
and exercise plans 178–9
myths associated with 386–7
physical activity for 368–75
tests 372–4
types of 368
and wellbeing 356
fitness profiles 368–75
FITT principle 376–7
frequency 376
intensity 376
time (duration) 377
type 377
flattening the arc, accuracy and 258
flexibility 371, 391
flexibility training 384
food miles 215–17
food sources 187
food waste infographic 209
force production and application
absorption of force 258
accuracy 258
force summation 256–7
impulse 257
force summation 256–7
absorption of 258
accuracy 258
impulse 257
friendships and peer groups 28–9
friendship strengths 37
fundamental movement skills 241, 330–1, 344
definition 330
instruction and effect 241

G

game plans 337, 338, 353, 344
game sense 269
gatekeepers 19
gender
roles 20
and sport 20–1
gender-based violence 74–5
challenging 89–91
story for men and boys 89–91
story for women and girls 89
gender equality 62, 95
definition 62
homophobia 71
and power 69–71
coercion 70
harassment 70
sexual harassment 70–1
and respectful relationships 66–76
gender equality and power 69–71
independence and responsibility 66–7
safe and respectful sexual behaviour 68–9
safe sexual relationships 67–8
and sexual orientation 71
gender identity 12, 51, 62
gender inequalities 60–1, 63
cycle of 70
gender norms 61–2, 95
definition 61
gender stereotypes 12, 20–1
exploring sexuality 56
sexuality and 56–66
values and attitudes 56
general practitioners (GPs) 156
good attitudes 192
good health
benefits 349
and wellbeing 349
good mental health 44
good sporting conduct 315–17
grid games 268–9, 282
gross motor skills 244, 282
definition 244
group pressure 37
groups, collaborating in 298–304
guided discovery leadership style 308, 326

H

harassment 70, 95
HARM method 149
harm minimisation 104–5, 165, 189, 198
definition 105
harm minimisation strategies 189
health 201–2, 350–2
active and sustainable lifestyles 210–11
Country/place and 218–22
factors affecting 184
factors influencing 202–3
First Nations Australians 176–7, 183
and fitness 350–4
negative impacts on 190
physical activity for 354–8
promoting 223–31
sustainable food to 209–18
and wellbeing 352
taking control of 358
of young people 154–5
Health app 125
health behaviours 202–9
cultural factors 203, 204
economic factors 203, 204
social factors 203, 204
healthcare providers 156
health information
First Nations Australians *See* First Nations Australians
learning to navigate 169–70
services and support 170–82
analysing popular culture 173–4
assessing 171
fitness and exercise plans 178–9
health literacy skills 170–1
healthy food choices 177–8
internet and 172–3
mental health 174–6
personal safety 190–2
sexual health 179–82
sources of 155–7
community health services 157
family and friends 156
healthcare providers 156
internet and online organisations 157
online 159–60
school network 156
strategies to increase personal safety 189–96
being assertive 192
conflict 193–4
good attitudes 192
pro-social 194–5
stay safe 189–90
unsafe situations 192

health literacy 165, 170, 198
analysing popular culture 173–4
definition 170
and mental health 176
skills 170–1
critical literacy 170–1
health promotion 292, 326
definition 292
health services 185
healthy food choices 177–8
healthy relationships 38
heart rate telemetry 361
help-seeking 202–9
heterosexual 56, 64, 71, 95
definition 71
heterosexual relationship 71, 88
high-performing teams 299
holistic 183, 198
homophobia 71–2, 95
definition 71
homophobic bullying 73–4, 95
homosexuality 56, 71, 72, 95

I

identity 40–8
identity changes and transitions
beliefs 6–19
emotional wellbeing 40–8
emotions and relationships 26–39
handling changes and 43
independence 6–17
mental health 40–8
societal expectations and 18–24
stereotypes *See* stereotypes
values 6–18
identity fraud 224
illicit drugs 121–5, 165
and effects 121, 122
resisting pressure to 124–5
image-based abuse 82
impulse 257, 282
independence 6–18, 51, 66–7
definition 14
indigenous respiratory outreach care 185
individual movements 269–71
infants, CPR for 143–4
informational support 301, 326
instrumental support 301, 326
intensity 376, 391
intergenerational trauma 95, 184, 185, 198
definition 91
intermediate skill drills 267
internal feedback 252
International Day Against Homophobia and Transphobia 56
internet 223
and health information 172–3
and online organisations 157
interval training 383–4, 391
intimacy 67, 95
intimate relationships 43, 51
definition 29

K

key elements
of high-performing teams 299
of movement phases 277
kidney disease 186
Kidney Health Australia 186
kinaesthetic feedback 252, 282
knowledge of performance 251, 282
knowledge of results 251, 282

L

land management 218
Landy, John 315
leadership, in physical activity 304–12
coach 305–7
officials 307–8
scorers 307–8
timekeepers 308
umpires and referees 307
people involved in sport 304
players 305
styles 308–11
team captain 305
LGBTIQA+ 62, 63, 71, 74, 75, 314
definition 313, 326
LGBTIQA+ participation 314
LGBTQIA+ community 204
line of gravity 261, 282
living museums 218
local muscular endurance (LME) 370, 391

M

managing risks, and safety 100–9
marginalised groups 204–205, 233
in community 204–8
definition 204
masculinity 20, 62, 74, 86, 91
massed practice 250, 282
definition 250
maximum heart rate (MHR) 351, 361, 391
media influences 12
meditation 230
MensLine Australia 20, 177
mental health 40–8, 154 174–6, 185, 198, 351, 391
See also health
during adolecence 157
community help and support services for 157–9
definition 174, 351
expectations and 44
getting help 44–7
health literacy and 176
positive mental health 47
resources 181
strategies to improve 227–31
substance use 176–7
and wellbeing 351
mental health benefits of physical activity 289
mental practice 251, 282
MHR *See* maximum heart rate
mindful drinking 117
mindfulness colouring 227
moderate intensity 359, 360, 361, 362, 385, 391
modifiable factors 202, 203, 206, 233
modified games 334–6
movement concepts and strategies in 333–4
morbidity rates 202
mortality rates 202
motivation 300–1
motor skills, performance appraisal of 275–7
catch 275
drop punt kick 276–7
overhand throw 275–6
sport-specific skills 241, 242, 246, 275, 277
mouth-to-mouth method 142
mouth-to-nose method 142
movement analysis framework wheel 333
movement concepts 330, 332–4, 344
building strategic awareness 337–43
for success 338
tactics and 338

movement concepts (*cont.*)
definition 330
fundamental movement skills 330–1
Physical Education 332
specialised movement skills 331–2
and strategies in modified games 333–4
movement phases 277, 282
movement proficiency *See* proficiency of movement
movement sequences 332, 344
definition 332
multicultural community 9
muscular endurance 370, 391
muscular power 371, 391
muscular strength 370, 371, 391

N

National Sports Tribunal 321
natural environment 294
negative risks 100, 103
non-binary 61, 95
definition 61
non-fat components 371
non-modifiable factors 202, 203, 206, 233
non-sport-related activities 293
norm-referenced standards 274–5
nutritious bush foods 219

O

objective judgements 274, 282
objective methods 360, 391
of assessing physical activity 360–3
ability-to-talk test 360–1
direct observation 360
heart rate telemetry 361
pedometry 362–3
target heart rate 361–2
definition 360
observation 274
offensive tactics and strategies 338–9, 344
officials 287, 305, 307–8, 326
one-on-one defence 339, 345
definition 339
online communication 82–5
online health information 159–60
open skills 242–3, 282
definition 243
opposed drills 268
organised events 294
overcoming low self-efficacy 366–7
overhand throw, performance criteria for 275–6

P

part practice 251, 282
pedometers 362–3, 391
peer groups 29
definition 29, 102
friends and 11
friendships and 28–29
percentile ranks 274–5
performance-enhancing drugs 312, 320, 326
and effects 320
performance measures 274–6, 282
criterion-referenced standards 274–5
norm-referenced standards 274–5
observation 274
performance achievements 274
skill tests 274
statistical information 275
personal boundaries 105–8, 124, 165
definition 105
personal identity 6–7, 15, 28, 51
definition 6
personal safety 190–2
practices 109–130
alcohol *See* alcohol
binge-drinking 111
pre-loading 111
risky behaviours 109–10
smoking 118–21
vaping 118–21
strategies to increase 189–96
personal views 14
physical activity
assessing 358–64
objective methods 360–3
subjective methods 359–60
balance 354
barriers to participation in 364–8
changing behaviour 365
self-efficacy 366–7
SMART goals 366
benefits of 288–292
aspects of wellbeing 288–92
community benefits 289–91
emotional and mental health benefits 289
participate in 288–9
physical health benefits 289
social health benefits 289
campaigns 294–7
charity initiatives 294–5
come and try day 294
running events 295–7
collaborating in groups/teams 298–304
community 296
and exercise guidelines 355
and fitness 355–7
for fitness and fitness profiles 368–75
for health and wellbeing benefits 354–8
in natural setting 293–4
objective methods 360–3
options 293
promoting 292–6, 298
sport and *See* sport
training methods *See* training methods
training principles 375–80
training program 388–9
physical activity guidelines 292, 326
physical boundaries 78
Physical Education 331
movement concepts 332
physical health 351, 391
benefits of physical activity 289
definition 351
and wellbeing 351
physical practice 251, 282
physical violence 75
players 305
plyometrics 382, 391
problem-solving 308, 326
poor sporting conduct 315, 324
positive affirmations 228
positive body language 193
positive communication 31
positive mental health 44, 47
positive relationships, characteristics of 29–35
assertiveness 33
communication 31
conflict resolution in 32
empathy 33
resilience 34
rights and responsibilities in 35
positive risk-taking 103–4
positive risks 100
positive sexuality 88

power 69–71, 95
coercion 70
definition 69
gender equality and 69–71
gender inequality 70
harassment 70
sexual harassment 70–1
practice 250–1
distributed 250
massed 250
mental and physical 251
and training regimes 266
advanced skill drills 267
basic skill drills 266–7
intermediate skill drills 267
opposed drills 268
types 250
whole or part 251
prejudice 61
pre-loading 111
problem-solving leadership style 308
proficiency of movement (or skill proficiency) 273, 282
adapting skills 265–72
appraisal 272–80
measuring proficiency 272–4
performance measures 274–5
qualitative analysis of human movement 277–8
of selected motor skills 275–7, 280
video analysis software 278–80
biomechanics, refining skills using 254–65
classifying skills 240–6
definition 273
measuring 272–4
skills 239–240
See also skills
acquisition 246–50
and proficiency 239–40
training skills 265–72
transferring skills 265–72
progression or progressive overload 378–80, 391
definition 378
projectile 259, 282
projectile motion 259, 282
angle of release 259
velocity of release 259
pro-social 194–5, 197, 198
psychological factors 60
psychological violence 75

Q

qualitative analysis 277, 279, 282
definition 277
of human movement 277–8
and performance appraisal 278
tasks of 277
quandong 219

R

racism 23, 24, 91, 184, 185, 312
definition 23
rate of perceived exertion (RPE) 359
ReachOut 159
reaction time 372, 391
REAL strategy 159, 160
recall method 360
reciprocal leadership style 308, 326
recovery position 135, 136, 140, 165
refusal skills 35–6
bystander behaviour 36–7
regular defibrillators 137
relationships 26–39
conflict resolution in 32
decision-making 35
empathy 33
expectations 27
family 28
friendships 28–9
healthy 38
intimate 29
peer groups 29
positive and respectful 29–35
refusal skills 35–6
role-playing 38
repetition maximum (RM) 381, 391
repetitions 378, 391
rescue breathing 142
rescue breaths 135–7, 165
resilience 34, 101, 165, 351, 391
definition 101, 351
resistance training (or weight training) 381–4, 387, 391
definition 381
respect 68, 95
respectful relationships
characteristics of 29–35
assertiveness 33
communication 31
conflict resolution in 32
empathy 33
negotiating needs in 33
resilience 34
rights and responsibilities in 35
gender equality and 66–76
See also gender equality
through truth telling 91–2
respectful sexual behaviour 68–9
respiratory diseases 185
respiratory rate 360–1
response 140
responsibility 66–7
reward 103–4
rheumatic heart disease 185–6
RICE 148, 165
RICER 147, 165
risk assessment 105
risks 100, 165
asserting boundaries 105–8
assessing 104–5
definition 100
DRSABCD action plan 134–8
negative 103
perceptions 102–3
personal safety practices 109–30
positive and negative 101
risky behaviours 109–10
safe blood practices 149–52
and safety 100–9
strategies to reduce 125–9
types 101–2
weighing 107
risk-taking 101
positive 103–4
rock climbing 240
roleplaying relationships 38
RPE *See* rate of perceived exertion
running events 295–7

S

safe blood practices 149–52
in sporting context 149–50
safer sex 58, 88, 89, 95, 106
definition 58
and respectful sexual behaviour 68–9
safety 100–9
safety apps 125
SALTAPS 147, 166
same-sex attraction 71, 73, 95
scorers 307–8, 326
self-efficacy 366–7, 391
definition 366
overcoming low 366–7
self-esteem 7, 101, 166
definition 101
self-expression 29
self-report 360

send for help and first aid 135, 139, 140
sequential summation 256
serial skills 243–4, 282
  definition 244
sets 381, 391
sexting 82, 224–5
sexting laws 82, 85, 95
sexual activity 51, 68
  definition 29
sexual behaviour 12, 56, 95
  definition 56
sexual coercion 70, 95
sexual consent 79–80
    See also consent
sexual harassment 70–1
sexual health 58, 95
  assertive communication 87–9
  behaviours 58–61
  definition 58
  information 84
  WHO working definition of 58
sexual health information 179–82
sexual identity 56, 95
  definition 56
sexuality 56–8, 95
  and relationships 55–6
  attitudes 56, 58–61
  consent 76–86
  definition 56
  exploring 56
  gender equality 62
    See also gender equality
  gender norms and stereotypes 61–2
  and gender stereotypes *See* gender stereotypes
  sexual health behaviours 58–61
  stereotypes and prejudice 61
  values 56, 58–61
  young people and 64–5
sexually transmissible infection (STI) 96
sexual orientation 56, 60, 71, 95
  definition 56
  gender identity and 73
sexual relationships 67–9, 76–8, 95, 173
  definition 67
  media and portrayal 181–2
  rights and responsibilities 77–8
  support for young people managing 81–2
sexual violence 57, 63, 75, 89
short interval training 383
short-term effects 113
signs of life 135, 136, 166
simultaneous summation 256, 257
singles, badminton 341
single-use plastics 214–15
skills 246, 282
  acquisition 246–50
    factors affecting 250–4
    feedback 251–3
  and proficiency 239–40
  basic 240
  classification 240–6
    basic skills 241–2
    closed skills 242–3
    discrete, serial and continuous skills 243–4
    fine and gross skills 244–5
    specialised sporting skills 242
    summary 244
  definition 246
  fundamental movement 240, 241
  learning stages 247
    associative stage 248
    autonomous stage 248–9
    cognitive stage 247–8
  moving towards game situations 268–71
    game sense 269
    grid games 268–9
    individual movements 269–71
    synchronicity 269
    tactical proficiency 269
  transference 265–6
skill themes 331, 345
  definition 331
skipping 295
SLSNSW *See* Surf Life Saving New South Wales
SMART goals 351, 366, 391
  definition 366
  setting 366
smoking 109–21, 130
  immediate effects of 118
  long-term effects of 118–19
  tobacco use 118–19
sober curious 117
social conditions 43
social desirability bias 359
social health 351, 391
  definition 351
  and wellbeing 351–52
social health benefits of physical activity 289
social influence 43
socialisation 13, 51
  definition 13
social media 173
societal expectations 18–24
societal values 7–8
soft-tissue injuries 147–9
space 338–9
  use of 266
spatial awareness 266
specialised movement skills 331–2, 345
  definition 332
specialised sporting skills 242
specificity 377–8, 391
speed 371, 391
spiritual health 352, 391
  definition 352
  and wellbeing 352
sport
  benefits of 287–8
  fair play and ethics in 312
    performance-enhancing drugs 312, 320
    sporting conduct 315–17
  fairness and ethical behaviour in 320–3
    Australian Human Rights Commission 321
    Court of Arbitration for Sport 322
    Sport Integrity Australia 321
    Sporting Tribunals 321
  First Nations Australians in 317–19
  inclusivity in 313–14
  people involved in 304
  and physical activity *See* physical activity
sporting conduct 315–17, 326
Sporting Tribunals 321
Sport Integrity Australia 321
sport-related physical activities 293
sport-specific skills 242, 277
sprint training program 387
SSTEP parameters 267, 268
stability 259–264, 283
static stretching 385
statistical information 275
stereotypes 8, 18–24, 51, 61, 96
  challenging 86–7, 93
  cultural 22
  definition 61
  gender 12, 20–1, 56–66
  gender norms and 61–2
  and prejudices 61
  racism and 23
  teenage 21–2
Stolen Generations 9, 184, 185

stretching methods 384–6
striking sports 338
subjective judgements 274, 283
subjective methods 274, 392
  of assessing physical activity 359–60
    rate of perceived exertion 359
    recall method 360
    self-report 360
  definition 359
subjective ranking 363
substance use 176–7
substance-use disorders 157, 158
sumo wrestlers 255, 262
support services 46–7
  in community 153–63
    health and wellbeing, of young people 154–5
    health information 155–7
    for mental health issues 157–9
Surf Life Saving New South Wales (SLSNSW) 313
sustainability 201–2
  diet 216
  food to improve health and wellbeing 209–16
    eating 213–14
    environmental impact 211–13
    food choices 214–16
    green your routine 211
  lifestyle 210
sustainable
  definition 201
synchronicity 269

T

tactical proficiency 268–9, 283
tactics and strategies 338
  case study
    badminton 340–3
  defensive 339–40
  evaluating 340
  offensive 338–9
  space and direction 338–9
target heart rate 361–2, 379, 392
  definition 361
team captain 305
teams
  allocation of roles within 300
  building 299–303
  captain 305
  coach 305–7
  high-performing 299
  leaders and members 301–3
  members 300
  motivation 300–1
  players 305
  support 301
  and teamwork 298–9
  training 300
teamwork 298–9, 302
  assessing 302
  developing 299–303
teenage stereotypes 21–2
timekeepers 308, 326
time (duration) 377
  use of 266
traditional diets 218–22
training methods 380–8
  circuit training 383
  continuous (aerobic) training 384
  developing 380–1
  flexibility training 384
  interval training 383–4
  myths associated with 386–7
  plyometrics 382–3
  resistance (weight) training 381–4
training principles 375–80
  progression or progressive overload 378–80
  specificity 377–8
  for sporting events and activities 375
    frequency 376
    intensity 376
    time (duration) 377
    type 377
training program 388–9
  scenario 388
  sprint 387
training regimes 266
  advanced skill drills 267
  basic skill drills 266–7
  intermediate skill drills 267
  opposed drills 268
training session 385–6
  conditioning 385
  cool-down 385
  stretching 385–6
  warm-up 385
transference of skills 265–6
transitions 43
transphobic bullying 73–4, 96
truth telling 91–2
type 2 diabetes 186

U

umpires and referees 307, 326
unconscious 126, 135, 136, 139, 146, 166
UN Refugee Agency (UNHCR) 74
unsafe situations 192
upstander 36, 51
  definition 36

V

values 6–17, 51, 58, 61, 96
  and attitudes 56
  beliefs and 14
    See also beliefs
  body image and body confidence 11
  cultural 8–10
  definition 6, 58
  and expectations 7–8
  friends and peer group 11
  of groups in society 8
  knowing yourself 6
  media influences 12
  personal identity 6–7, 15
    activism 15
  personal views 15
  shape identity 7–13
  socialisation 13
vaping 109, 118–21
  health effects of 120–1
  and illicit drugs 109–30
velocity of release 259, 283
  definition 259
verbal cues 31
video analysis software 278–80
vigorous intensity 359, 360, 392
violence *See* domestic violence, economic violence, emotional violence, gender-based violence, physical violence, psychological violence, sexual violence
  against women 20, 63, 74, 89, 91

W

warm-up 385
website assessment 181
weight training 385
wellbeing 350–2
  aspects of 288
  Country/place and 218–22
  emotional health and 103, 351
  and First Nations Australians 183–9
  fitness and 356
  good health and 349
  health and 352
    See also health
  mental health and 351

wellbeing (*cont.*)
negative impacts on 190
physical activity for 354–8
physical health and 351
promoting 223–31
social health and 351–2
spiritual health and 352
strategies to improve 227–31
sustainable food to 209–18
of young people 154–5
White Ribbon Australia 89
WHO *See* World Health Organization
whole or part practice 251
whole practice 251, 283
World Health Organization (WHO) 58, 96

Y

young people
health and wellbeing of 154–5
issues of personal concern to 155
managing relationships 81–2
and sexuality 64–5
youth community health services 205

Z

zone defence 339–40, 342, 345
definition 339