Food Tech Focus

Lois Aspin Geraldine Blake
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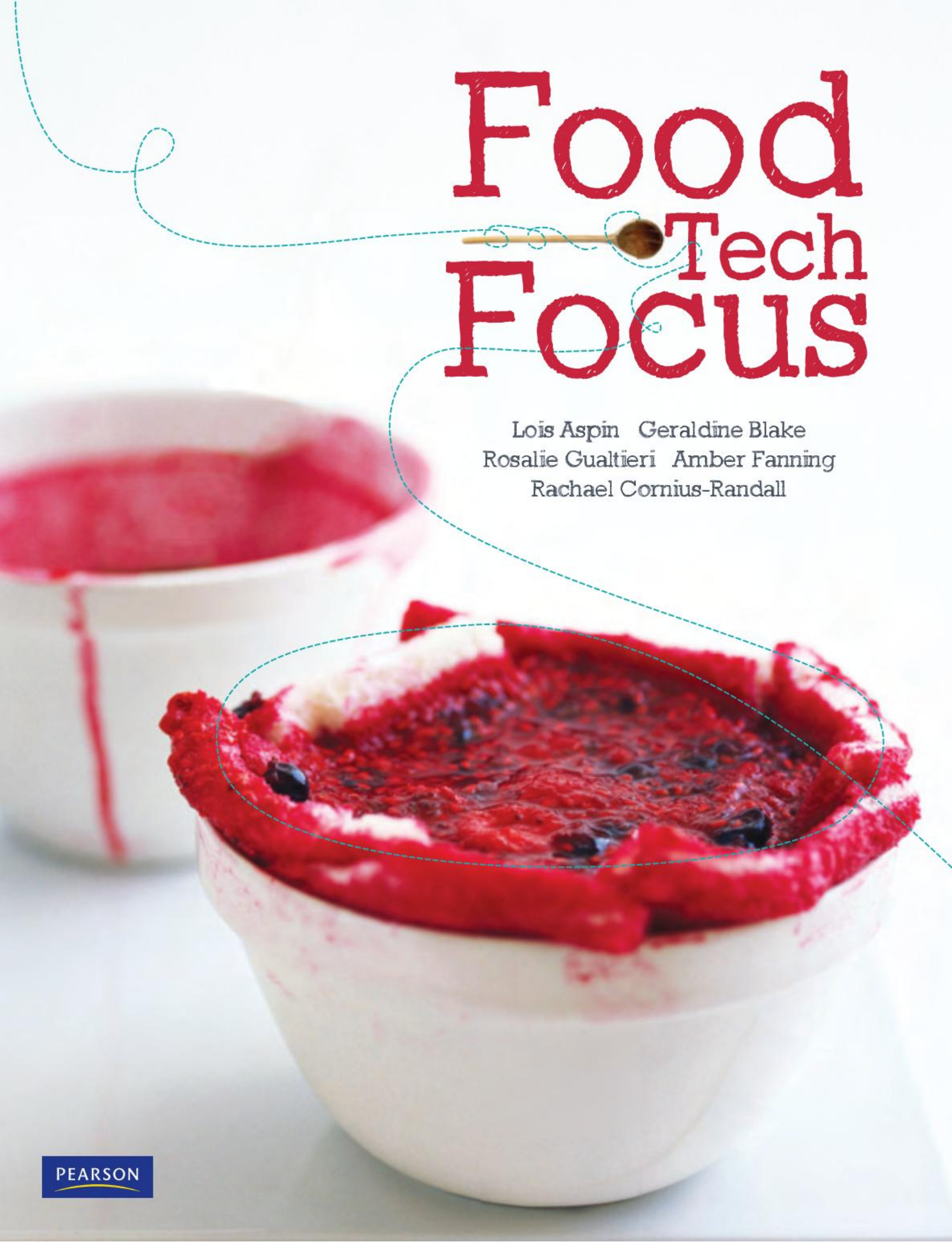
Rachael Cornius-Randall



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Contents

Chapter 1: Just give me the facts 1

Food preparation and processing

1.1 Food safety and hygiene practices 2
1.2 Causes of food deterioration and food spoilage 5
1.3 Principles of food preservation and storage 9
1.4 Reasons for cooking food 12
1.5 Functional properties of food 14
1.6 Basic ingredients in food preparation 16
1.7 Methods and equipment 17
1.8 Physical and nutritive effects 19
1.9 Industrial food processing 20
1.10 Presentation and service of food 24
1.11 Food packaging 26
Chapter review 31

Chapter 2: Eat well, live well 32

Nutrition and consumption

2.1 The food nutrient groups 33
2.2 The role of fibre in the diet 37
2.3 Foods developed to enhance health 39
2.4 Under- and overnutrition and diet-related disorders 41
2.5 Anorexia 45
2.6 Food consumption in Australia 47
2.7 National guidelines for healthy eating 49
2.8 Nutritional requirements at different stages of life 52
2.9 Selection of nutritious foods 54
Chapter review 57

Chapter 3: Bush tucker to contemporary cuisine 58

Food in Australia

3.1 Use of foods native to Australia 59
3.2 Early European influences 67
3.3 Multicultural influences 71
3.4 Evolution of an Australian cuisine 74
3.5 Influences on food selection 76
3.6 Factors affecting current consumption patterns 83
3.7 Additional content: production and processing 88
Chapter review 89

Chapter 4: Fare's fair 91

Food equity

4.1 The reasons for food inequity 92
4.2 Groups who may experience food inequity 96
4.3 Influences on food availability and distribution 103
4.4 Food production practices 111
4.5 Physical and social cost of malnutrition 114
4.6 Provision of aid 115
4.7 Additional content: support networks for groups 127
Chapter review 119

Chapter 5: New food! 120

Food product development

5.1 Reasons for developing food products 121
5.2 Impact of food product innovations 129
5.3 Steps in new product development design 132
5.4 Role of market research in product development 137
5.5 Promotion of new products 139
5.6 Additional content: emerging technologies and products 141
Chapter review 143

Chapter 6: Is it good for me? 144

Food selection and health

6.1 Function of food in the body 145
6.2 Digestion of food 146
6.3 Function and sources of food components 148
6.4 Nutritional needs 150
6.5 Factors that influence food habits 155
6.6 Nutritional implications of food consumption patterns 159
6.7 Response to general nutrition levels 162
6.8 Using food guides for menu planning and food choices 169
6.9 Additional content: active non-nutrients and health 172
Chapter review 175

Chapter 7: What's on the menu? 176

Food service and catering

7.1 Food service and catering ventures 177
7.2 Employment opportunities in the industry 179
7.3 Employer and employee rights and responsibilities 183
7.4 Consumer rights and responsibilities 185
7.5 Menu planning considerations 188
7.6 Recipe development 192
7.7 Purchasing systems 195
7.8 Food service and catering considerations 197
7.9 Additional content: operations of a small business venture 201
Chapter review 203

Chapter 8: Food for life 204

Food for special needs

8.1 Circumstances that lead to special food needs 205
8.2 Health status 211
8.3 Diet factors 214
8.4 Lifestyle choices 219
8.5 Support networks 228
Chapter review 231

Chapter 9: Great expectations 233

Food for special occasions

9.1 Role and significance of food 234
9.2 Reasons for celebration 237
9.3 Production and preparation 242
9.4 Menu planning considerations 246
9.5 Workflow plan 253
9.6 Presenting and serving food 255
9.7 Using convenience foods for special occasions 258
Chapter review 260

Chapter 10: What's in? 261

Food trends

10.1 Trends in food 262
10.2 Trends in dining and food service 268
10.3 Trends in food presentation and food styling 271
10.4 Food styling and photography 273
10.5 Accepting new food trends 276
10.6 Marketing and food trends 278
10.7 Additional content: marketing and current food trends 280
Chapter review 281

Recipes 283

Index 363

Recipe index 368

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How to use this book

Chapter openers

Every chapter opens with a strong visual image and provides stimulus material for discussion and to pre-test student knowledge. The introduction contextualises the chapter for the students and is written in student-friendly language. Chapter outcomes help students and teachers monitor their progress through the course of study.

Units

All chapters are divided into units. The units provide a content-based approach to the knowledge and skills required by the Food Technology syllabus. A range of data, graphs, photographs, illustrations and articles support the content of the unit, as do the 'Food in focus' and 'Practitioner in focus' features.

The unit reviews and 'Hands on' activities help students to develop the skills required by the Food Technology syllabus.

Other elements of the units are:

- 'Food facts', which are interesting facts and information related to the key content
- a margin glossary, in which key terms are explained
- 'Core' alerts, which refer students to the relevant core material.

Unit reviews

Graded activities and questions are provided at the end of each unit, categorised as 'Looking back', 'For you to do' and 'Taking it further'.

Food in focus

The 'Food in focus' features support unit content in a case study approach. 'Food in focus' topics range from advances in technology, historical information, best practices in food to government guidelines and practitioner information. They are supported by questions to consolidate and extend the students' knowledge.

Hands on

'Hands on' activities are structured practical tasks that deepen and broaden students' practical experiences. 'Hands' on activities range from practical activities such as 'Using garnishes with care' to experiments such as 'Blind taste test' and food design activities such as 'Design your own high-fibre breakfast cereal'.

Practitioner focus

'Practitioner focus' features are provided in each chapter. They provide students with an opportunity to make real-life connections between the content and skills they are learning, and those of food and related industries.

Chapter reviews

Chapter review activities are classified as 'Looking back', 'For you to do' and 'Taking it further'. 'Looking back' activities help students revise and consolidate the information in the text. 'For you to do' activities engage students in reflection, application and analysis. 'Taking it further' activities develop skills in creativity, research and evaluation. All of these activities are designed to consolidate what students have learnt in the chapter.

Recipes

All recipes referred to in the text are provided in the final chapter of the book.

Recipes icons, placed throughout the book, direct students to relevant recipes in the last chapter. The icon helps students contextualise recipes while providing teachers with flexibility in delivery of content and practical work. All recipes have been tested in the classroom. They provide opportunities to develop students' skills in food preparation and processing.

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For a full list of relevant websites, go to the web destinations for *Food Tech Focus* via the Student Lounge at www.pearsonplaces.com.au.

Chapter 1

Just give me the facts

Core: Food preparation and processing

The study of food is a fascinating exploration of science, industry, history, law and eating! This chapter provides information about safe practices, basic knowledge of the Food Technology room and equipment, and a quick overview of the processing of food in industry.

Chapter outcomes

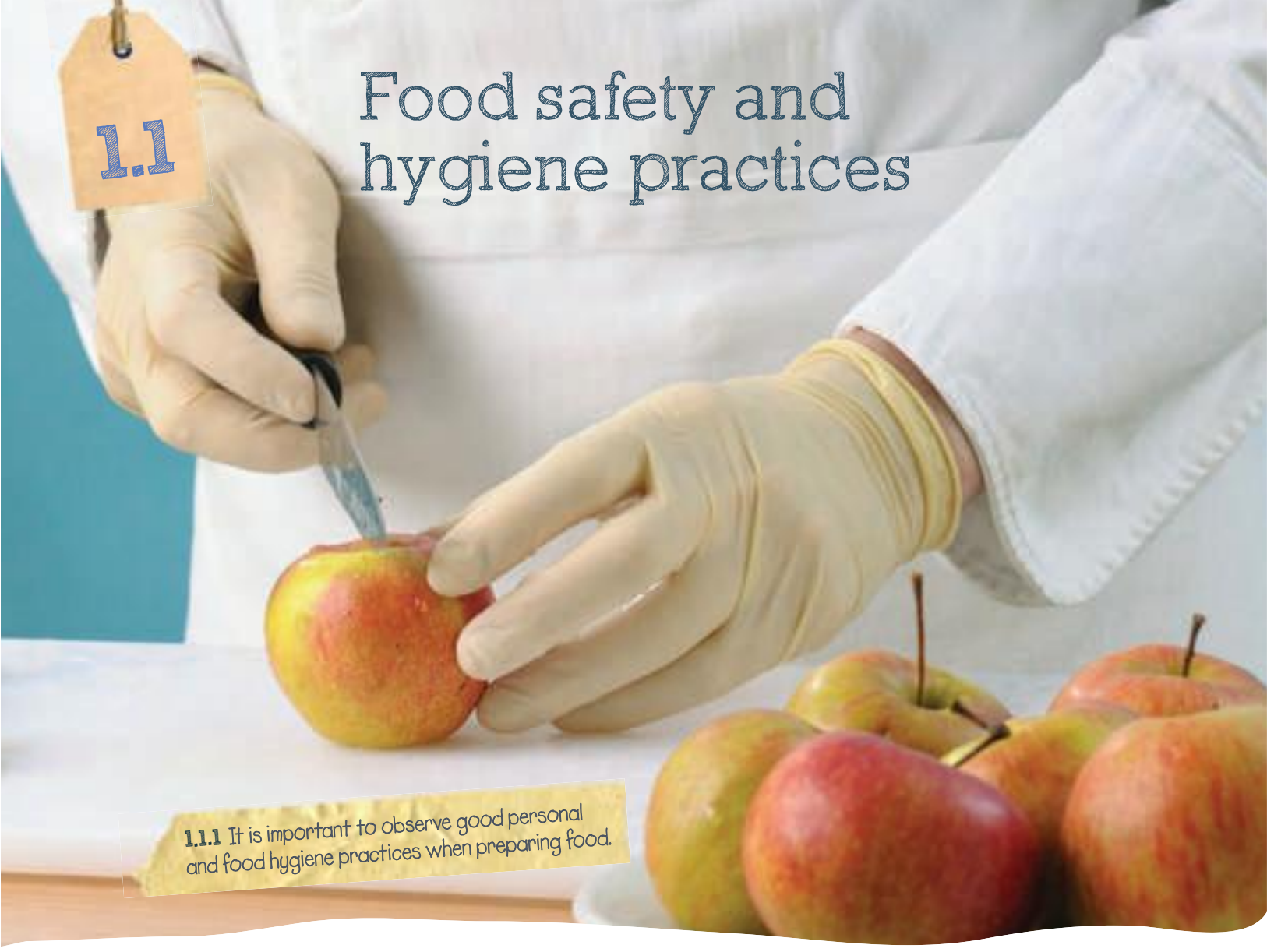
In this chapter you will learn about:

- food safety and hygiene
- causes of food spoilage and the principles of food preservation
- reasons for cooking food
- properties of food
- ingredients in food preparation and the equipment used to prepare food
- the role of technology in food preparation and its social effects
- the physical and nutritive effects of food preparation and processing
- levels of industrial food preparation
- food presentation and service
- food packaging.

In this chapter you will learn to:

- demonstrate safe and hygienic work practices
- identify ingredients that are a high spoilage risk and investigate methods to minimise this
- apply the principles of food preservation in food preparation and storage
- appreciate the sensory properties of food
- prepare foods that demonstrate their functional properties
- create food items for different cuisines using appliances and technology
- prepare and cook foods to prevent nutrient loss
- explain the role of food additives in processed food
- discuss the impact of food processing on the environment, the economy, society and health
- experiment with food presentation and garnishing
- explore the functions and diversity of packaging.

1.1 Food safety and hygiene practices



1.1.1 It is important to observe good personal and food hygiene practices when preparing food.

Safety in the kitchen is everyone's responsibility. You are responsible for the cleanliness of your hands, apron and workspace, and your work practices. You are also expected to behave in a manner that will not cause harm to others.

Personal hygiene

Imagine you are in a restaurant and about to eat a delicious meal. Would you eat the meal if the chef had not washed her hands after visiting the bathroom? What about if she blew her nose, then picked up a stray chip to put on your plate before it was served to you? The trouble is that you would not know if any of these things had happened, and the germs that could be passed onto your meal could make you very sick indeed.

A restaurant in China was closed down in 2003 when health inspectors discovered that workers were cleaning the cutlery using old underwear!

Food hygiene

There are three principles of food hygiene:

- prevent contamination of foods
- kill the bacteria by cooking properly
- prevent the growth of food-poisoning bacteria.

Foods will be safe from contamination if correct personal hygiene is maintained, but this is not enough to keep food safe. Cross-contamination occurs when raw foods come into direct or indirect contact with cooked foods. Raw foods should be treated as if they contain food-poisoning bacteria, and handled carefully. Separate equipment should be used for raw and cooked foods; for example, chopping boards and knives used for raw meat should be washed before being used for cooked meat. Raw foods should be stored separately from cooked foods. Food should be properly covered.

In the refrigerator, cooked food should be stored on higher shelves and raw food on lower shelves. Washing up must be thorough. The water in the sink should be as hot as you can handle and detergent should be used.

1.1.2 Washing up in a logical order—from 'cleanest' to 'dirtiest'—will save time and water.

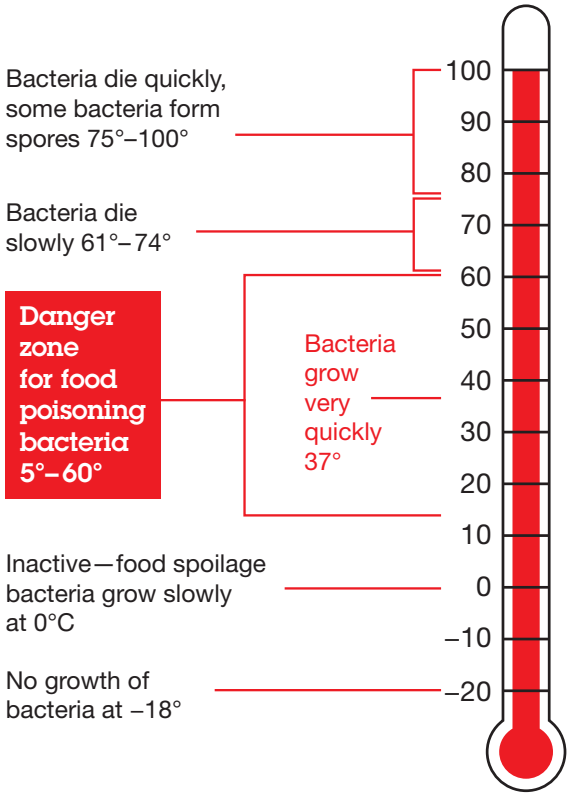
Remove food scraps first and wash, in a logical order (from cleanest to dirtiest), glassware, cutlery, crockery then cookware. Remember to wipe down all work areas and cook tops as well.

Most food-poisoning bacteria will be killed by cooking—provided the cooking temperature is high enough. The cooking temperature depends on the type of food and the cooking method. The crucial factor is the internal or inside temperature of the food. For example, rare roast beef should reach an internal temperature of 60°C, while chicken and hamburger patties should have a minimum internal temperature of 75°C. The temperature in these cases is measured using a meat thermometer.

The growth of food-poisoning bacteria is greatest in the temperature danger zone. The danger zone is between 5°C and 60°C. All raw and cooked food must be stored outside the danger zone. This means the refrigerator must keep foods cooler than 5°C and the oven, microwave or **bain marie** should hold warm foods at above 60°C.

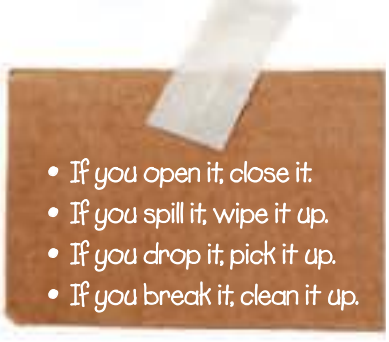
Frozen foods should be thawed in the refrigerator (large objects such as frozen chickens may take up to two days) or the microwave. Leftovers should be reheated quickly to a temperature of 75°C to ensure that bacteria do not have time to grow when they are passing through the danger zone. This is done easily in the microwave.

bain marie: container in which food is heated over a bath of hot water. Bain maries are often used in shopping centre food halls that sell takeaway food.



1.1.3 Temperatures of foods are measured on the inside of cooked foods and the outside of raw foods.

1.1.4 Which features of this kitchen present hazards? Which features encourage good hygiene?



Safe work practices

Generally, commonsense and good judgement should determine how you behave in the classroom, but there are some special rules for the Food Technology room.

- Beware of utensils with sharp edges. Walk with knives pointing downwards, your arm by your side and the blade facing away from you. Do not place knives into a sink of soapy water as they can be hidden from view and may injure the person washing up.
- Work efficiently. Clean as you go, close cupboard doors and drawers as you use them, mop up spills immediately so there are no slips or trips, and never run.
- Think safety. Watch out for pot handles hanging over the edge of cook tops, knives on the edge of benches and other potentially dangerous situations.
- Be careful when working with steam, gas, hot oil and electricity. Do not use appliances with damaged cords. Be particularly careful with electrical appliances around water.
- Follow all instructions. If in doubt, ask questions rather than guess.

Food safety legislation

Australia has a set of national Food Safety Standards designed to reduce the incidence of food-borne illness. The Standards outline requirements for all food businesses including:

- training staff in food hygiene and safety
- providing facilities to store food and protect it from contamination
- providing washing facilities on the premises.

The Standards were introduced after statistics revealed that people were eating more meals not prepared at home (restaurant, takeaway and convenience foods) and that the incidence of food poisoning was increasing.

RECIPE

CHOCKY ROCKS
p. 284

UNIT REVIEW

Looking back

1 List and explain the three principles of food hygiene.

2 Explain the link between the temperature of high-risk foods such as chicken and food safety.

3 Suggest why staff training in food handling is required for employees in food businesses.

For you to do

4 Write a short article for your school newsletter about the temperature danger zone, making it relevant to school lunches.

Taking it further

PP Web Destination

5 Using an online catalogue from a kitchen supplies outlet, research the different types of knives that are available and the uses for which they are intended.

6 Using the website link, visit the WorkCover website. Access the 'virtual kitchen' and try the safety test.

Causes of food deterioration and food spoilage

1.2

Microbial activity

Micro-organisms occur naturally in the environment. While some can spoil food, others are useful in food production, for example the manufacture of beer, cheese, yoghurt and wine.

Micro-organisms can be:

- bacteria
- yeasts
- moulds.

Bacteria

Bacteria are microscopic organisms that cause food poisoning when they are consumed live in food or when they produce **toxins** in the stomach.

The optimum conditions for bacteria are:

- moist environment
- warmth (between 5°C and 60°C: the danger zone)
- time to grow
- food supply
- low-acid environment.

Note, too, that many bacteria also require oxygen.

Under ideal conditions, bacteria double in number every twenty minutes.

Yeasts

Yeasts are single-celled plant organisms that can produce slime on fruit juices and vinegar products, and can cause other foods to ferment and thus spoil. The **fermentation** process produces bubbles on the surface of the liquid and gives a strong yeasty odour and taste. Foods affected by yeasts can give a tingly sensation to the tongue and a slightly acidic flavour. While these are not pleasant, they are not harmful.

Moulds

Mould is different from the other micro-organisms in that it can be seen by the naked eye. Moulds are a form of fungi and reproduce by forming **spores** on the surface of foods such as bread, fruit and cheese.

1.2.1 What causes of deterioration and spoilage are these biscuits exposed to?

Mould appears as a dark cottonwool-like mass on the surface of food. The spores are carried in the air. Moulds enjoy a warm, moist and nutrient-rich environment, where they grow rapidly. Some moulds found in grains and nuts produce dangerous toxins if consumed. Heating to above 60°C for ten minutes can destroy them.

The appearance of moulds makes food undesirable, and while they do not cause as much illness as bacteria, mouldy foods can damage a food outlet's reputation. Moulds are used in food processing in the production of blue-veined cheeses such as Stilton and Blue Castello.

Enzymatic changes

Enzymes are proteins that help to speed up reactions. Some enzymes found naturally in food can cause food spoilage. These natural chemicals cause foods to ripen and age. This action does not 'switch itself off' and continues past the optimum ripening stage, for example enzymes continue to convert starch in fruits to sugar, causing increasing softening in overripe fruit. Heating foods above 60°C or storing them below 5°C slows the action of enzymes considerably.

In perfect conditions, one bacterium could multiply to produce approximately 17 million bacteria within eight hours.

toxin: poison generated by micro-organisms that can cause illness

fermentation: production of acid or alcohol by micro-organisms that changes the texture, flavour or aroma of food

spore: organism that produces one or more organisms, similar to a seed

1.2.2 Bacteria most commonly associated with food poisoning

Name	How food is contaminated	Source of contamination	Foods involved	Symptoms
Salmonella	Salmonella causes an infection when food that contains live bacteria is eaten. It is the most common cause of food poisoning in Australia.	Found in the gut of animals, particularly chicken. Cross-contamination is frequently the cause. Flies, mice, birds and pets are other sources of contamination.	Raw meat, poultry and sausages. It is found in food outlets where cross-contamination has occurred, or where foods have not been properly thawed.	Vomiting, diarrhoea, listlessness within 6–72 hours. It can be fatal in the elderly, very young and chronically ill.
Clostridium perfringens	These bacteria cause an infection when food that contains live bacteria is eaten. The bacteria also release a toxin into the intestine once consumed.	Raw meat, vegetables coated in soil or dirt, unhygienic food handling.	Commonly associated with cold and reheated meat, especially casseroles or other foods cooked in bulk, for example large roasts, stew leftovers.	Onset occurs usually within 8–24 hours of consuming contaminated food, causing nausea, diarrhoea, abdominal cramping. Symptoms last 12–24 hours.
Staphylococcus	Staphylococcus is a toxin. Food poisoning occurs when the food that contains this toxin is eaten. Cooking does not destroy the toxin.	50% of the population carry this bacteria in nasal passages, mouths and infected skin, wounds and pimples. Coughing, sneezing and contact via hands spread the bacteria.	Foods eaten cold such as custards, cold meats, pre-prepared **smorgasbord** fare.	Vomiting, diarrhoea, abdominal cramps within 1–8 hours of eating contaminated food. Symptoms can last 1–2 days.
Escherichia coli (known as E. coli)	E. coli causes an infection when food that contains live bacteria is eaten. Its presence indicates poor food-handling practices.	E. coli lives in the bowels of humans and animals. It is transferred by poor hygiene in the workplace. Many raw foods contain E. coli so cross-contamination through infected food preparation surfaces and equipment is common.	Raw and processed meat and poultry.	Abdominal upset with severe diarrhoea. It can be fatal in babies and young children.
Listeria	Listeria is very resistant to extremes in temperature and can both grow in refrigerated environments and survive high temperatures of pasteurisation.	Main sources are dust, water, fish, shellfish, birds and insects.	Milk products and cheese. Soft cheeses (such as brie and camembert) are likely sources, as well as manufactured meats (such as ham, corned beef and salami) and soft-serve ice-cream.	Nausea, vomiting and diarrhoea within 24 hours. It has been linked to stillbirth and miscarriage.

PP Web Destination

Milk, soft cheese, cream, chicken, red meat, fish, ice-cream, cooked pasta, cooked rice, coconut, pastries and gelatine are the most likely foods to cause food poisoning.

smorgasbord: buffet meal of various hot and cold dishes (Swedish word)

Hands on

Foods produced with bacteria, yeasts and moulds

Purpose

To observe the part that micro-organisms play in the production of some foods.

Materials

food samples such as blue-veined cheese, soft cheese such as brie or camembert, AB bacteria-enhanced yoghurt, fermented milk drinks such as Yakult

toothpicks, variety of disposable cups and plates

Steps

1. Your teacher will distribute samples of each product for you to try.
2. Note your reactions to the foods.

Activities

1. List the foods you tasted that you had not tried before.
2. Explain the difference that the addition of the bacteria, yeast or mould made to the taste, texture or smell of the product.
3. Examine the package of each product. How does the manufacturer explain the presence of the bacteria, yeast or mould?

Physical and chemical reactions

Correct food storage is important. It reduces the opportunity for foods to be exposed to conditions that will affect their physical and chemical properties.

Non-perishable foods can be stored in the pantry for long periods of time. The pantry should be clean and well-ventilated and at room temperature (between 10°C and 20°C). It should be dry (free from moisture) to prevent mould from developing. Dry goods should be stored in airtight containers to stop contamination by weevils, insects and rodents.

Canned foods can be stored in the pantry for many months, but the quality of the goods purchased is important. Dented or swollen cans should be avoided, as they may be misshapen by gas produced due to microbial activity or chemical action.

Cold storage includes refrigerated and frozen storage areas. Refrigerators should operate at or below 5°C, while freezers usually keep foods below –18°C.

All foods in the refrigerator should be well covered and organised to avoid cross-contamination. Poultry and red meats should be stored and wrapped separately and cooked foods stored on higher shelves. Foods should never be placed directly on refrigerator shelves.

Frozen foods can suffer 'freezer burn' if not packaged correctly. Removing as much air as possible from the package before freezing and sealing the food well prevents the build-up of ice crystals, which cause the drying effect of freezer burn. Many foods may be successfully frozen but, once reheated, must be eaten or the remainder thrown away. Thawed and reheated food should never be refrozen.

RECIPE

GINGER BEER
p. 285

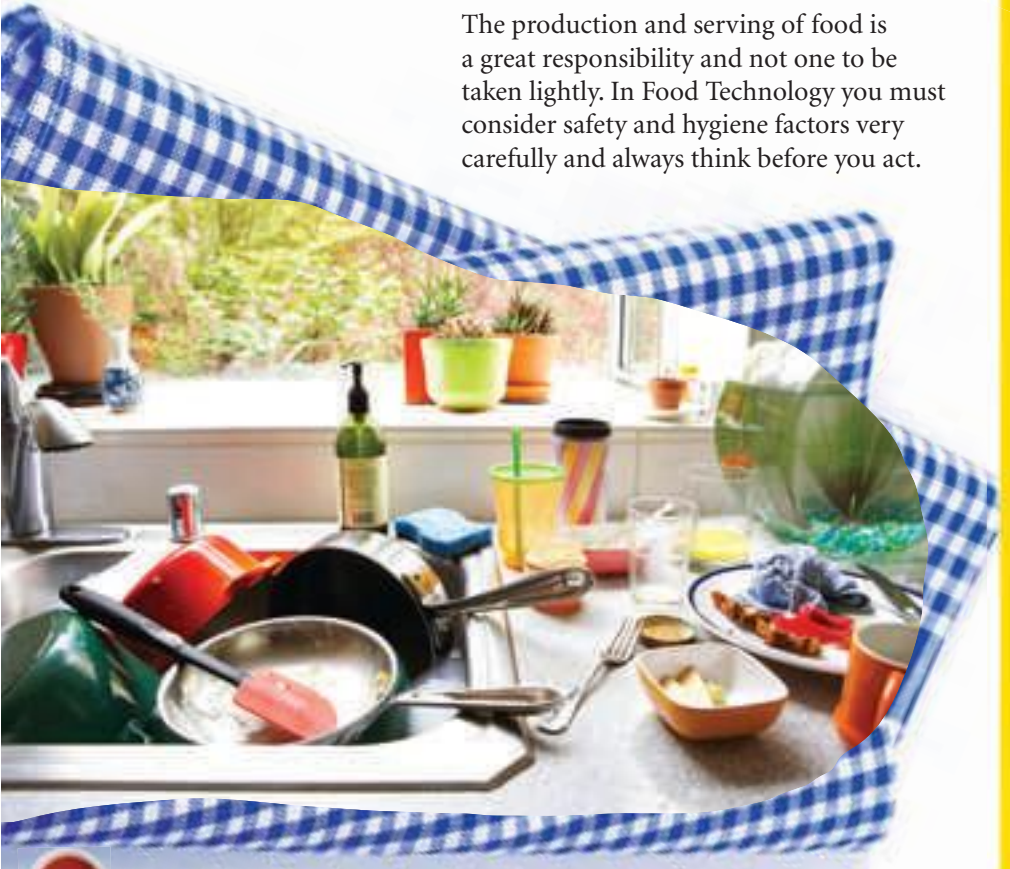
sanitise: make clean and free from germs and dirt

Environmental factors

A number of environmental factors can cause food contamination. These may be as obvious as dirt and dust or as a result of less obvious occurrences, such as:

- insect spray being used in the kitchen when food is uncovered
- foods being exposed to the air
- damaged packaging
- a food handler using a gloved hand for both serving food and handling money
- rough handling
- vegetables or flowers being used as table decoration coming into contact with food
- display labels on a buffet coming into contact with food
- food being stored in the temperature danger zone
- wait staff accidentally putting their fingers on the plate while serving meals
- food being placed on crockery that has been inadequately cleaned or **sanitised**.

The production and serving of food is a great responsibility and not one to be taken lightly. In Food Technology you must consider safety and hygiene factors very carefully and always think before you act.



UNIT REVIEW

Looking back

1. Which are more dangerous: bacteria, yeasts or moulds? Explain your answer.
2. Explain the significance of the temperature danger zone to bacteria.
3. List the optimum conditions for the growth of bacteria.
4. List foods whose production involves the use of bacteria, yeasts and moulds.
5. Explain the meaning of the term 'enzyme', and give a common example of an enzymatic reaction.
6. Describe the optimum storage conditions for pantry, refrigerator and freezer storage.
7. List some everyday activities that could cause food contamination in your home.

For you to do

8. Analyse the table in 1.2.2 on page 6. Write a newspaper article describing the type of bacteria you consider to be the greatest risk to public health—don't forget to explain why.
9. Design an experiment to demonstrate the action of enzymes and how their action may be slowed.
10. Store a slice of bread, loosely wrapped in plastic, in the freezer for one week. Describe the effects of freezer burn.

Taking it further

11. As a class, start a blog compiling news articles related to food safety and food poisoning. Comment on the issues related to each article.

Principles of food preservation and storage

1.3

RECIPE
DRIED APRICOT JAM p. 287

For centuries, food has been preserved so that it can be stored for long periods of time at an acceptable quality. Food is preserved to:

- prevent wastage, for example making marmalade when there are lots of oranges and lemons available
- ensure provision in a later time of shortage or to improve choice
- maintain its nutritive value and make food preparation easier and quicker.

There are many methods of food preservation. Each method involves controlling the following factors.

Moisture levels

The rate of growth of micro-organisms depends on the amount of water available. Dehydration, or drying, is an old method of preservation. It involves removing 5 to 25 per cent of the moisture in the food, because bacteria will not survive in these conditions. Foods that have been dried are not as heavy and, when kept in an airtight container, have a long shelf life. Drying is a relatively simple procedure and does not necessarily require special equipment. Traditionally, drying was carried out in the open air in the sun, but it can be successfully done in a microwave or home oven on a very low temperature. Fruits and vegetables can be successfully dehydrated, as can beef. Dehydrated beef is commercially known as 'beef jerky'.

Salt draws moisture from food cells. Salting is commonly done using brine (a salty water solution). The salt draws moisture from the meat and is dissolved in it. The meat then reabsorbs the salty juices, which inhibits bacterial growth. Meat will keep for several weeks in a mild brine. Meats such as corned beef are prepared in this way. Salting was the method used to preserve meat for early settlers travelling to Australia. Many vegetables are also suitable for salting and then bottling.

Sugar is the key ingredient in the preservation of fruits in the form of jams, jellies, marmalades and fruit butters. Sugar has a dehydrating effect similar to that of salt. In strong concentrations it increases the food's natural sugar levels so that micro-organisms cannot grow. It is important that the amount of sugar is just right to ensure the preservation qualities. A general rule of thumb is that equal parts of sugar and fruit (by weight) are required. The keeping qualities of the product are improved if it is refrigerated after opening.

Addition of chemicals

Traditionally, the main chemicals used to preserve foods were salt and sugar. Chemical preservatives have been developed to replace these but the principles are the same. Used in commercial food preservation and processing, they can be identified by their product labels. Food additives are identified by code numbers.

Preservatives are numbered in the 200s, for example sorbic acid (200) is used in the preservation of cheese, as it prevents the growth of yeasts and moulds.

Potassium nitrate or sodium nitrate (250) may be added to a brine (salt) solution to enhance the colour of salted meat, as a salt solution on its own turns the meat grey. This chemical also helps to prevent bacterial growth.

Antioxidants are numbered in the 300s. Ascorbic acid (300) stops browning in unprocessed fruits, while butylated hydroxytoluene (321) prevents deterioration of the flavour in fats and oils due to the action of enzymes.

Smoking, one of the oldest methods of preservation, is used to extend the shelf life of meat and fish, eggs, nuts and cheese. While the smoking process has a drying effect, the chemicals in the wood smoke also act as a preservative. Some chemicals are poisonous to the bacteria, while other

1.3.1 This preserved meat is for sale on the footpath of the city of Macau, China.

1.3.2 Smoked fish like this can be made at home on a barbecue.

compounds stop meat from oxidising and going bad. In domestic smokers, the food is removed from a brine solution and is placed on a rack above a burner. Different woods, brine flavourings and herbs create different flavours in the preserved food. Smoke contains carcinogenic (cancer-causing) substances, so smoked foods should not be eaten in large amounts.

Temperature

Freezing prevents the growth of some bacteria and moulds, so the rate of food spoilage is reduced. Freezing does not prevent enzyme action, so foods such as vegetables must be **blanched** before freezing to deactivate the enzymes.

A large variety of fruits, vegetables, breads, meats, fish and cooked meals are suitable for freezing. Freezing stops all the chemical activity in the cells of the food. Water crystals are formed during the freezing process and rupture some cells in the food. This explains why foods with a very high water content, such as strawberries, lettuce, celery and watermelon, are damaged severely during freezing.

To ensure high quality of frozen foods when thawed, the ice crystals that form during freezing must be small. This is achieved by freezing the product very quickly.

Bottling preserves food by heating it in a container, usually a glass bottle or jar. The heat kills the micro-organisms and then creates a vacuum to store the food in an airtight environment. Bottling is frequently used to preserve fruit, as well as some vegetables. The heating process sterilises the food and kills the yeasts and moulds already present. The addition of acid to some fruits helps control the growth of micro-organisms.

The process usually involves heating the bottled food (which may or may not be already cooked) in a water bath to between 74°C and 100°C. The heating time required depends on the food, the size of the bottle and the acidity of the food. Firm fruits are best preserved in pieces, whereas soft fruits are best preserved as syrups or purées.

blanch: plunge into boiling water for a short time, then into cold water

1.3.3 Have you ever wondered how good fruit was preserved? Bottled fruits and vegetables like this feature in the district exhibits of the Sydney Royal Easter Show.

pH level

Vinegar is a product of the fermentation process. Acetic acid is produced when the alcohol from the fermentation process is converted. This process gives various vinegars their distinctive flavour. The addition of vinegar to preserve foods is commonly known as pickling. The high level of acidity of the vinegar prevents the growth of micro-organisms. The natural liquids in the foods are replaced by the vinegar, which also gives the food flavour. Vinegar may be used for preserving food in three ways:

- raw food is packed in jars then vinegar is added
- food is placed in brine, brine is drained, then food is immersed in vinegar to remove excess moisture, keep vegetables crisp and prevent the formation of bacteria
- food is cooked in a solution of vinegar and flavourings, commonly known as chutneys or relishes.

Oxygen

Foods can be spoiled by the absorption of oxygen. Oxygen is often removed or eliminated when preservation methods such as bottling and freezing are used. Expelling most of the air from a plastic bag of sausages before freezing prevents the trapped cold air from turning the fat in the sausages **rancid**.

One method of preservation, vacuum packaging or cryovac packaging, involves removing oxygen without changing the nature of the food. This method is usually done in conjunction with refrigeration, and is commonly used for red meats, smallgoods such as ham and other cured meats, and cheese.

RECIPE

TOMATO RELISH
p. 288

UNIT REVIEW

Looking back

1. Explain the principles of food preservation used in the production of sun-dried tomatoes, sultanas, marmalade and smoked ham.
2. What method of preservation is used to make corned meat?
3. Why should smoked foods be eaten in moderation?
4. What is cryovac packaging? How does it preserve food?
5. Use the correct terms to explain what happens to watermelon if it is frozen.

For you to do

6. Design an experiment to find out the most appropriate method of making homemade sun-dried tomatoes comparing natural methods (the heat from the sun) and technology (the microwave). Be sure to consider hygiene factors, time taken and the quality of the end-product.
7. Explain how bottling effectively preserves fruit and vegetables.

Taking it further

8. As a class, create a set of recipe cards for preserved fruit and vegetable recipes. Each person should find their own recipe, test it and then type the title, ingredient list and method on an A5 card, adding a photo of their finished product. Laminate the card for display in your classroom, or swap and test others' recipes.

PP Web Destination

9. Investigate the additive codes listed on processed food. Using the website link, identify the additives contained in a bag of lollies such as jubes, or bubblegum.

rancid: having an unpleasant or stale smell or taste

1.4

Reasons for cooking food

Before using food in any food preparation exercise, the sensory properties must be considered. These are colour, texture, odour and taste.

Heinz in the United States developed chocolate-flavoured, blue-coloured frozen chips called Funky Fries. They were withdrawn from supermarkets after twelve months due to poor sales.

Sensory properties of food

Colour

What do you see when you imagine a crusty bread roll or a juicy tomato? Chances are that your image of this food will have a lot to do with its colour. The colour of food is a useful guide to its freshness and ripeness, how well cooked it is and whether it has been spoiled or damaged. Similarly, colour enhances enjoyment of food. Careful use of colour combinations can make a meal more visually inviting. Sometimes colour can confuse the senses when combined with taste. Perhaps you have eaten an iced doughnut decorated in club colours to show support for a football team in the grand final, or tried a flavoured clear bottled water. These are not the flavours normally associated with these colours!

Hot foods usually have a stronger aroma than cold foods. This is due to the heating of the chemical compounds in the food during the heating or cooking process.

1.4.1 How does colour affect our anticipation of the taste of food?

Texture

Texture is known as 'mouthfeel'. It can be visually detected by the physical structure of the food, for example crisp iceberg lettuce, or by the surface appearance of the food, for example velvety-smooth chocolate mousse. Variety in texture is important in a meal, as it adds interest. Examples include crusty bread served with a creamy soup, or pappadums as a side dish for an Indian curry.

Odour

What is your favourite food smell? Is it bread baking? The coconut cream smell of a Thai restaurant? Sausages and steak on a barbecue? The smell of freshly cut pineapple? Aroma or odour is a very strong sensation that draws people's attention to food and contributes greatly to their eating enjoyment. Sense of smell is also very useful in judging whether a food is 'off'. Taste and smell are closely linked—try holding your nose and tasting different foods. You've probably experienced how difficult it is to enjoy a tasty meal when you have a cold because your sense of smell is affected.

Taste

Do you have a sweet tooth? The tongue detects taste. The taste buds on the tongue are stimulated by different flavours which, in turn, register on different areas of the tongue. The specific taste sensations are sweet, sour, bitter, salty and spicy.

Flavour is said to be the combination of taste and smell, texture and appearance. Flavour gives the total impression of the dish. The flavour of a dish is usually tested before serving to determine whether any flavours are too dominant or the food is too bland. A meal that is balanced in flavour will usually contain a variety of taste sensations, from mild to stronger, with stronger flavours paired with a blander accompaniment, for example a curry served with rice, followed by a sweet dish.

RECIPE

CHICKEN AND HOKKIEN NOODLE STIR-FRY p. 289

UNIT REVIEW

Looking back

1. List the five senses and explain how foods can be made to appeal to each.
2. Using each sensory property as a list heading, provide ten words that could be used to describe each.
3. Which two senses are closely linked? What can you do to test this?

For you to do

4. Using recipe books, design a three-course menu that incorporates all the sensory properties of food. Draw the plating or presentation of each. Label your diagrams to highlight features to note, for example colours, special accompaniments, crockery or glassware chosen.
5. Design an experiment to test the location of the various flavour-detecting tastebuds on the tongue. Try lemon juice, liquid glucose, cold black coffee and soy sauce. Make sure the taster uses a blindfold.

Taking it further

6. Conduct a survey of the class to determine the likes and dislikes of certain foods based on taste. Are sweets or savouries the popular choice?

PP Web Destination

FOOD IN FOCUS

Blind taste testing—the Pepsi Challenge

Phil Harris

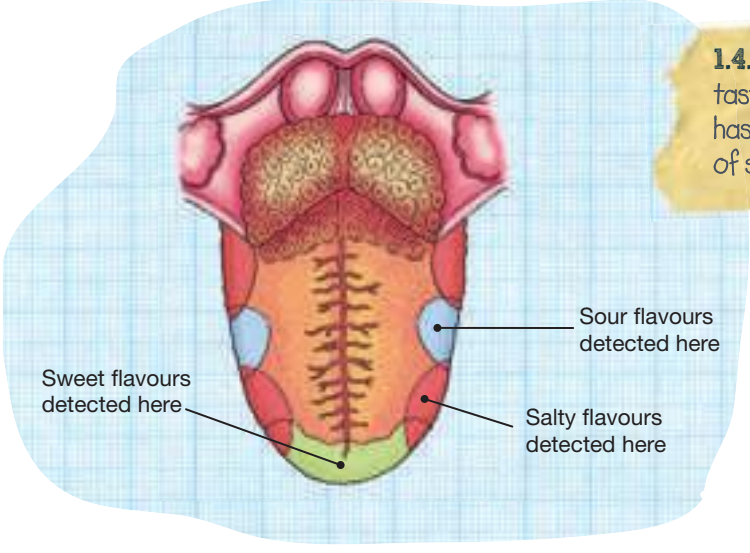
The Pepsi Challenge was a promotion widely implemented by Pepsi in 1975. It involved a blind taste test. At shopping centres, Pepsi representatives set up tables on which were two unlabelled cups. One contained Coca-Cola and the other Pepsi. Shoppers were encouraged to taste both and indicate which drink they preferred. Then the representative would reveal the two bottles so the tasters could see which they had chosen, Coke or Pepsi. The results, which were incorporated into various TV commercials at the time, showed that Pepsi was the preferred taste among 16–24-year-olds.

When the Pepsi Challenge was repeated in 2004, the results were similar when the test was performed under the original 'blind' conditions. However, when the products were labelled, Coke preferences increased.

Source: Adapted from 'Neuromarketing—marketing insights from neuroimaging', *Insights*, vol. 4, November 2008

Activities

1. Why were the cups unlabelled in the initial test?
2. How do you explain the results of the 2004 labelled test?
3. Design a blind taste test for another popular food product. Do the results reflect what you thought would happen?



1.4.2 The tongue has many taste zones. The tongue also has a vital role in the actions of swallowing and speech.

1.5

Functional properties of food

The functional properties of food are the physical and chemical changes that occur during food storage, preparation and presentation.

1.5.1 Toffee apples undergo caramelisation (making the toffee a golden colour) and crystallisation (causing the toffee to become brittle) in the cooking process.

Carbohydrates

Carbohydrates are found in foods containing large amounts of sugar, fibre or starch. Cereal products, vegetables and fruit are the best sources of carbohydrate. Carbohydrates are involved in the following reactions.

- Caramelisation is the browning process formed by the action of heat on sucrose (a simple carbohydrate). Foods containing sugar will brown when heated to about 160°C. A good example of this process is the golden colour of toffees and the browning of gravy.
- Dextrinisation is a slightly different type of browning produced by the action of heat on starch. The best example of this is the golden appearance of bread and baked cakes.
- Crystallisation occurs when sugar is dissolved in a liquid and heated. As heating continues, the liquid evaporates, leaving the sugar to clump together and starting the crystallisation process. The best examples of crystallisation are boiled lollies and toffee apples.
- Gelatinisation refers to the thickening and setting of food. Starch and protein are used to thicken food preparations. When starch is added to water and heated, the grains swell enormously and cause the product to thicken. Examples of this process are the addition of cornflour to thicken gravy and the use of arrowroot in confectionery.

Proteins

There are many different types of protein. Proteins enable foods to become more viscous, or to set. These properties have many applications in food preparation.

Two important processes are denaturation and coagulation. To denature means to change properties; once a protein has denatured, it cannot return to its original form. An example of this is the application of heat to egg. The second step of denaturation is coagulation, whereby protein thickens and changes into a semi-solid mass. Examples of denaturation and coagulation are scrambled egg, baked custard and beaten egg white. The process of denaturation and coagulation is affected by the application of acid, alkalis, sugar and salt.

Syneresis occurs when the coagulation process continues due to heating. This is seen when the protein squeezes out the liquid in the product, for example curdling in custards, the separation of liquid from meat when it is cooked to well done and the weeping of liquid from meringue on top of a lemon meringue pie.

1.5.2 The creation of meringue requires denaturation—turning runny egg white into a light, fluffy foam.

RECIPE

STAINED GLASS BISCUITS p. 290
DREAMY FUDGE p. 291

Lipids

Lipids, or fats and oils, have many properties that make them a useful ingredient in food and a useful component when frying food.

Emulsification is the dispersal of a fat or oil throughout a liquid. Oil and water do not mix, so emulsification requires the use of a third ingredient. If oil and water are beaten for a period of time, the oil is reduced to very small droplets that appear to be distributed in the water. However, if the mixture is left to stand for a while, it will separate. An example of this is clear salad dressing, such as French dressing. Egg yolk, salt, paprika and mustard are emulsifying agents that work by wrapping around the small oil droplets, preventing them from joining back together and separating from the water on standing. Some common examples of food emulsions are milk, mayonnaise, gravy and cheese.

UNIT REVIEW

Looking back

1. Explain the functional properties of toast, brown gravy, toffee, scrambled egg and mayonnaise.
2. Use diagrams to explain the processes of emulsification and gelatinisation.
3. Describe the process of syneresis.

For you to do

4. In groups, design a series of posters to illustrate the functional properties of carbohydrates, proteins and lipids. Use recipes, magazine photographs and hand-drawn illustrations to enhance your presentation.

Taking it further

5. Conduct an experiment to demonstrate the denaturation of egg white. Determine the point at which the egg foam is at its maximum volume, and show what happens if the egg white continues to be beaten. Demonstrate your findings to the class.
6. Find a simple recipe for homemade mayonnaise. Test it out. Why does the oil or butter need to be added very gradually?

1.6

Basic ingredients in food preparation

1.6.1 Some areas of NSW are well known for their cuisine specialties and local produce. What is the specialty of your local area?

The jackfruit is the world's largest tree fruit and tastes like banana bubblegum.

Woolgoolga near Coffs Harbour is known for its large Sikh population. The town was the site of the first Sikh temple in Australia.

All recipes use basic ingredient groups in varying quantities. These ingredients are combined in different ways to create distinctive flavours and tastes that are unique to different cuisines.

- Proteins are found in foods such as meats, milk, cheese, yoghurt, fish, eggs, soy beans, nuts, cereals and vegetables.
- Carbohydrates are found in cereal products, vegetables and fruits. They can be in the form of sugar or starches.
- Lipids include fats and oils, margarine, butter, lard, Copha and lipids, and are found in small amounts in cream, egg yolk, dairy foods, some fish and nuts.
- Herbs and spices are used in cookery to add interest and excitement to meals. They include common herbs and spices such as basil, pepper, thyme, parsley, chives, cinnamon, ginger, garlic, vanilla and mint.

Australian cuisine in the past reflected the British and European influences of early European settlement. Influences from Asia and recognition of indigenous heritage have contributed a rich variety of tastes, ingredients and flavours to the supermarket shelves and restaurant tables.

Differences between cuisines and flavours result from the use of certain ingredients or cooking methods. For example:

- Asian cooking uses quick cooking methods such as stir-frying or steaming, and ingredients such as herbs, spices and carbohydrate-rich noodles and rice.
- Indian cooking is known for its use of aromatic spices.
- Greek cooking uses vegetables grown in the Mediterranean region.
- Italian cuisine is famous for pasta and vegetable and meat sauces.
- Sushi from Japan is celebrated not only for its flavour but also its complex preparation process.

RECIPE

VEGETARIAN SUSHI p. 292

UNIT REVIEW

Looking back

1. Why do you think certain foods or flavours are linked with certain countries?
2. Explain the diversity of cuisines available in Australian cities compared to the range available in country areas of Australia.
3. Give five food examples of protein foods, carbohydrate foods and lipids.

For you to do

4. Select and make a recipe using the ingredients familiar to a particular cultural cuisine. Type up the recipe procedure, and add a short section after the recipe showing evidence of research of the culture chosen and indicating how this recipe represents the culture.

Taking it further

5. Many people believe that Asian cuisines are very similar. Choose two Asian countries and research the cuisines of these countries. Make sure you investigate the ingredients used, particularly herbs and spices, cooking methods and equipment, accompaniments and serving. Present your work as a two-page spread suitable for use in a food magazine.
6. As a group of four, prepare a mystery box containing four ingredients typical of a dish of a cuisine of your choice. Swap your box with another group and plan a dish around the ingredients you receive.

Methods and equipment

1.7

In Food Technology, just as in other specialist subjects, there are certain tools of the trade with which you should be familiar. These include utensils, cookware, small appliances and large appliances.

1.7.1 How many of these utensils do you recognise? How many have you used?

Utensils

Utensils are small hand-held tools designed to perform particular tasks. It is important that the right tool is selected for the job required.

- Cutting, peeling and slicing
  Knives (cook's, paring, filleting, cleaver, bread), zester, **mandolin**, apple corer, vegetable peeler, bean slicer, poultry shears and biscuit cutters.
- Mixing
  Spoons (wooden, slotted, metal, skimmer) and whisks used in bowls (ceramic, plastic or stainless steel) or saucepans.
- Sieving and straining
  Colanders, sifters, **chinois** and salad spinners.
- Mashing and grating
  Mouli, grater, potato masher, and mortar and pestle.
- Weighing and measuring
  Measuring spoons, cups and jugs, thermometers (meat and candy) and scales.

PP Web Destination

Cookware

Cookware is the equipment used for cooking or baking. Some types of cookware have specific uses, for example omelette pans, fish poachers and muffin tins. Cookware includes:

- saucepans, fry pans, stockpots, woks
- bakeware such as cake tins of various shapes and sizes, roasting pans, casserole dishes, soufflé dishes.

RECIPE

DREAMY FUDGE
p. 291

Small appliances

Small appliances are labour-saving devices and are generally electric, for example microwave ovens, toasters, electric beaters ('stick' blenders and fixed dual-beater mixers), food processors, deep-fryers, blenders, sandwich toasters or presses, rice cookers and electric fry pans, woks or skillets.

Large appliances are fixed in the Food Technology room and may be powered by electricity or gas. They include ovens and cook tops, refrigerators and freezers.

Advances in technology have meant that food preparation has become less labour-intensive. Mixmasters have replaced wooden spoons in cake-making and microwave ovens have made reheating of food much faster. Such advances have meant that people need fewer skills to prepare meals and have more time to dedicate to other tasks.

mandolin: rectangular device on which fruit and vegetables are sliced by pressing and sliding them against cutting blades

chinois: cone-shaped perforated metal strainer

mouli: round, bowl-shaped equipment used for mincing and processing soft foods and operated by turning a central handle

RECIPE

CHOCOLATE FUDGE SLICE p. 293

Recipe terminology

Equipment and appliances are used in combination with methods of preparation and cookery to prepare food. Terminology used in the method section of a recipe indicates the action to take and the equipment that may be required. Some common terms used include:

- bake: cook food using dry heat from the oven
- beat: mix an ingredient or batter vigorously to incorporate air and make it light and smooth
- boil: cook in liquid to a temperature of at least 100°C
- chop: cut food into very small pieces
- dice: cut food into cube-shaped pieces
- fold: combine a whisked ingredient carefully into another mixture
- fry: cook food in hot oil by immersion (deep frying) or shallow frying on both sides
- peel: remove the outer skin or shell
- poach: cook in a liquid heated to 96°C or less
- sauté: fry lightly in a little butter and/or oil
- sear: brown the outside of meat quickly in a hot pan before baking in oven
- shred: cut food finely
- sift: shake a dry ingredient through a sieve or sifter to remove lumps and incorporate air
- steam: cook food using the steam of boiling water
- stew: cook meat slowly at simmering point
- whip: beat a mixture until it is light and fluffy.

UNIT REVIEW

Looking back

1. Give an example of a recipe and ingredients (where appropriate) that would require the use of the following utensils:
   - apple corer
   - balloon whisk
   - mortar and pestle
   - measuring cups
   - measuring jug.
2. Explain why the following appliances are described as labour-saving: toaster, microwave, blender and electric mixer.
3. Give examples of recipes that might include the following terms in the method: poach, sift, whip, dice and fold.

For you to do

4. Design a recipe card for Chocolate Fudge Slice (page 293) without using specific cooking terms. Include diagrams for each step and label the utensil or equipment used.

Taking it further

5. Devise a utensils and equipment list for Chocolate Fudge Slice.

Physical and nutritive effects

1.8

Some foods can be eaten raw. Others have their flavour, texture and general appeal enhanced by alteration through processing or cooking. These processes alter the physical and nutritive properties of the food.

The shapes of foods can be altered in preparation through cutting, grating and shaping. The colours of foods can be enhanced by removing the skin, for example from kiwi fruit, and blanching, for example plunging snow peas in hot water briefly before placing them in iced water to bring out the green colour. Flavours can be enhanced by the use of marinades and spices. The textures of foods can be changed by using utensils such as a meat mallet or a blender, or by the process of cooking. Aroma is enhanced by various methods of cooking—just think of the smell of baking bread, compared with the bland smell of raw dough; or the aroma of onions being barbecued, compared with the smell of raw onions!

These processes can also alter the nutritive value of the food. Vitamins may be dissolved in either water or fat. Water-soluble vitamins such as Vitamin C are almost completely destroyed during cooking. Vitamin C is also affected by oxygen, so when vegetables are peeled or cut, the oxygen in the air contributes further to its destruction. B Group vitamins are found in green leafy vegetables and are also water soluble. Cooking methods such as boiling will destroy them.

Fibre is a type of carbohydrate that cannot be digested, but is essential to the good functioning of the gastro-intestinal tract. Fibre is commonly found in fruits and vegetables and certain processes reduce the amount of fibre available. Peeling an apple or straining the pith from orange juice removes valuable fibre. Frying may add undesirable amounts of fat, as fat is absorbed during the cooking process. If the oil used to deep-fry is not at a high enough temperature, the absorption will be even higher.

1.8.1 Some foods, such as these exotic fruits, need little preparation to look interesting.

Looking back

1 Provide examples of the following:
   - the flavour of the food is enhanced by cooking
   - the appearance of the food is improved by peeling
   - the shape of the food is improved by cutting or slicing.

2 List some methods by which the texture of a food may be altered.

For you to do

3 Aroma of food can evoke many memories. Describe a memorable food experience, based on the smell of the food.

4 Fat-soluble vitamins will be found in foods that contain fat. Suggest cooking processes that may cause fat-soluble vitamins to be lost.

Taking it further

5 In a small saucepan, boil a piece each of pumpkin, potato and carrot until very soft. Drain the water into a glass and allow to cool. When cool, try drinking the vegetable water—it will have more water-soluble vitamins in it than the vegetables! How does it taste? What does it look like? Use this activity to explain the nutritive value of making soup with vegetables high in water-soluble vitamins.

UNIT REVIEW

1.9

Industrial food processing

Most foods go through a series of treatments before they are ready to be eaten by consumers.

1.9.1 Primary processing involves little more than harvesting and preparing for sale.

Levels of processing

There are two levels of food processing in industry: primary and secondary.

Primary processing

Primary processing is the changing of raw foods after harvest or slaughter into ingredients that can be consumed individually, or further used in the production of manufactured food products. Primary processing results in very little change to the physical form of the food. Some examples of primary processing are milling wheat into flour, packaging potatoes into 1.5 kilogram bags, or refining rice to remove the outer husk.

Secondary processing

Secondary processing changes primary processed food into other food products. The physical appearance, texture and flavour of the food changes dramatically, for example flour and other ingredients made into noodles; potatoes peeled and cut before being fried as chips; peaches peeled, pitted and canned in syrup.

1.9.2 Ice-cream is a good example of secondary processing. The more a product is changed from its original form, the more highly processed it is.

Additives

Food additives are ingredients that would not normally be eaten as foods by themselves. Industrial food processing uses many additives for a variety of purposes:

- Anti-caking agents are used to keep dry, powdery products from clumping together, for example cake mixes.
- Artificial sweeteners make a product sweet without using sugar, for example diet soft drinks.
- Colours add or restore colours to foods, for example sauces, sweets and snack foods.
- Flavourings and flavour enhancers improve the taste or flavour of a food or restore flavour lost during processing, for example MSG (monosodium glutamate).
- Humectants prevent food from drying out.
- Preservatives protect food against the action of micro-organisms.
- Thickeners and vegetable gums give a food product a uniform consistency and texture, for example some confectionery and savoury sauces.

Additives often have very long chemical names. Processed foods must be labelled with all ingredients. Additives are identified by their classification (colour, humectant, vegetable gum, etc.) and assigned a three-digit number. These coded numbers can be deciphered using the Food Additives Shoppers Guide. Using the website link, check out their website.

PP Web Destination

RECIPE

FRUIT ROLL
p. 294

FOOD IN FOCUS

How is ice-cream made commercially?

There are seven steps in the making of commercial ice-cream:

1 Milk, cream, milk solids, sugars, modifying agents and flavourings are blended together in stainless steel vats.

2 The mixture is homogenised, under high pressure. This involves forcing the mixture through a fine nozzle in a stainless steel valve, helping to create the desired texture as milk fat globules become uniform in size.

3 The mixture is then pasteurised by heating at 82°C to 85°C for 15 seconds and then rapidly cooled to eliminate potentially harmful bacteria.

4 The mixture is left to stand for 4 to 24 hours so that ageing occurs. In this process, the fat globules solidify and the viscosity increases. Flavours or colourings are added during this time.

5 The mixture is then frozen at about –7°C and beaten (or agitated, to use the technical term). The process adds air in small cells while it creates a texture similar to whipped cream.

6 The ice-cream is then moulded and packaged.

7 The packaged ice-cream is frozen at around –25°C to allow the ice-cream to harden.

Source: Adapted from information on the Dairy Australia website

Activities

1 Use a dictionary to define the following terms: homogenised, pasteurised, globules, viscosity.

2 Why do you think much of the equipment used in commercial food processing is made from stainless steel?

3 Draw a flow process diagram to explain the process of making ice-cream, and insert or add the steps you imagine would be needed to make an ice-cream on a stick.

4 Explain the importance of the freezing, beating and refreezing steps for the final texture of the ice-cream.

Nestlé Pty Ltd Pakenham food processing plant—industrial refrigeration

Nestlé Pakenham produces a variety of lasagne, frozen meals and pizzas, with household brand names including Maggi and Lean Cuisine.

Nestlé Pakenham's largest refrigeration system was operating at below optimum levels, with significant efficiency and cost improvement opportunities. More compressors were running than were required, there were many unnecessary start/stop operations and some compressors were running only part loaded. This meant below optimum energy efficiency, increased running hours and more start/stop operations.

The solution involved upgrading the energy management and control system of the main refrigeration plant at Nestlé's Pakenham site. The existing step-based control was replaced with a control system capable of implementing mathematically based optimal control logic.

The cost of implementing the new control system was $265 000. Based on energy cost savings alone, this resulted in a project payback of six years. Funding of $100 000, provided by the Department of Innovation, Industry and Regional Development, assisted the project.

The project demonstrated that an old refrigeration plant can be optimised to save energy as well as improve process operating temperatures if system operating parameters are analysed and appropriate modifications planned in a whole-systems approach.

About 840 tonnes of greenhouse gas per annum has been abated.

The overall power use at the site has been reduced by 6 per cent.

The refrigeration plant uses 16 per cent less electricity.

The run hours of the compressors have been reduced by 18 per cent, increasing the potential life of the asset and reducing maintenance costs.

Unnecessary start/stop operations of the compressors have been reduced by over 90 per cent.

The new system pays for itself within six years.

Source: Adapted from information found on the Victorian Government's ResourceSmart website

Activities

1 Why did Nestlé want to improve the refrigeration efficiency at its Pakenham plant?

2 What were the environmental and economic effects of the changes made?

Environmental, social and economic effects of industrial food preparation

Environmental effects

Environmental issues of industrial food preparation include litter creation and food wastage, and the recycling of by-products of the production process. Processed foods generate a great deal of packaging, which, in turn, generates waste. Previously, much of this packaging was used as landfill. Now recycling provides the opportunity to reuse paper, plastics, glass containers and packages. Food waste includes the leftover portions of meals and trimmings from restaurant food preparation, and from large-scale food preparation. In commercial food processing, the product left over from one process can often be turned into another. For example, apples that do not meet the criteria to be sold fresh may be processed into cans of pie apple, apple sauce or apple juice. Charities and organisations such as food banks receive donations of food that would otherwise be thrown out. Food scraps of meat can be sent to pet food manufacturers or used in the production of fertiliser. Cooking oil and waste from grease traps can be collected and reprocessed into stock feed, fuel and soap.

Social effects

Industrial food preparation allows processes traditionally carried out in the home to be done in the manufacturing plant. Many families lead hectic working and social lives, so prepared or partially prepared foods suit this lifestyle well. Quick cooking and minimal preparation mean more time to spend on other things. The cost, however, is that prepared foods do not require much skill, so traditional food preparation skills may be lost. There is also less control over the consumption of additives when processed foods are eaten regularly.

Economic effects

Increasing employment in the manufacturing and hospitality sectors is the result of a booming food manufacturing industry. Processed foods are more expensive than their unprocessed counterparts, so the consumption of foods prepared outside the home costs the householder more money.

UNIT REVIEW

Looking back

1. Explain how different methods of food preparation affect the physical characteristics of food.
2. Describe methods of cooking that maximise the nutrient value of the food. Use examples to support your answer.
3. List five roles that additives play in food processing.

For you to do

4. Working in groups of four, design a production line process for the Fruit Roll recipe (page 294). Make sure each group member has a task.

Taking it further

5. Using the Food Additives lists, decipher the additive codes on a snack food packet.

Web Destination

Practitioner focus

Stephanie Alexander—restaurateur and author

Stephanie Alexander is a well-known restaurateur, and author of the very popular book *The Cook's Companion*. She was inspired by a Californian program called the Edible Garden, which aimed to address the eating habits of young children. She developed the Stephanie Alexander Kitchen Garden Program, in which children across Years 3 to 6 spend a minimum of 40 minutes a week in an extensive vegetable garden, which they have helped to design, build and maintain on the school grounds according to organic gardening principles. They also spend one and a half hours each week in a kitchen classroom, preparing and sharing a wonderful variety of meals created from their produce.

The aim of the Kitchen Garden Program is pleasurable food education for children. The program develops lifelong skills in the kitchen and garden and encourages children to enjoy all the benefits of growing, harvesting, preparing and sharing.

Why have a kitchen garden program?

Not all kids eat well. A disturbing number go to school each day without breakfast. Many others are overweight or obese. These symptoms of the busy world in which we live are likely to become habits of a lifetime for our children and lead to serious health issues in the future.

Obesity is the public health issue of the not-too-distant future—diabetes, heart disease, strokes, joint problems, dental decay, chronic constipation, depression—to name a few consequences of an unhealthy diet and lack of exercise. The fruit and vegetable intakes of Australian children and adolescents fall well below recommendations and have continued to decline in the past ten years. Their consumption of packaged, salty, sugary, fatty snack and convenience foods grows, while their consumption of fresh, seasonally available food lessens. 'Convenience' food is too easy and is being made easier—with vending machines, 24-hour retailing and junk food outlets at every corner.

In many cultures, eating together around a table is the centre of family life. It is the meeting place, where thoughts are shared, ideas challenged, news is exchanged and the participants leave the table restored in many ways. In the Kitchen Garden Program, equal importance is given to time around the table sharing the meal that has been prepared from produce grown in the garden.

Source: Adapted from information on the Kitchen Garden Foundation website

1.9.3 Stephanie Alexander emphasises the importance of growing and cooking with fresh ingredients.

Activities

1. Outline the features of the Kitchen Garden Program that would be appealing to primary school children.
2. List the reasons given for implementing a Kitchen Garden Program.
3. Suggest how the Kitchen Garden Program can address the environmental, social and economic effects of food processing.
4. Why is equal importance given to sitting at a table sharing a meal made from the kitchen garden produce?

1.10

Presentation and service of food

The presentation of food is like a 'first impression' and is very important in food service.

1.10.1 Elegant, simple presentation. What characteristics of the presentation of this berry tart make it attractive?

Visual appeal

- Food should be attractive to the eye and stimulate the palate.
- The senses of sight, smell and taste should be considered in the presentation of food.
- Colours should be contrasting but also what is expected. For example, a creamy pasta on a white plate is boring, soup should not be blue. Colour highlights can be introduced with crockery, accompanying foods or garnishes.
- Textures should be appropriate. For example, fried food should be golden and crisp, vegetables should not be soggy. A variety in texture in a menu is desirable.

Garnishes

Garnishes are used to add interest and enhance the presentation of a dish.

Some traditional garnishes can indicate an ingredient of a dish. For example, fish is often garnished with lemon. Some popular garnishes are:

- lemons: zest, wedges, slices
- tomatoes: **van-dyked**, rose, diced
- celery or shallot curls
- **croutons**
- fresh herbs such as basil, parsley, mint
- fanned strawberries
- piped cream or flavoured butters, sauces such as raspberry coulis, olive oil.

van-dyke: decorative zigzagged edge made using a knife, usually reserved for fruit and vegetable presentation

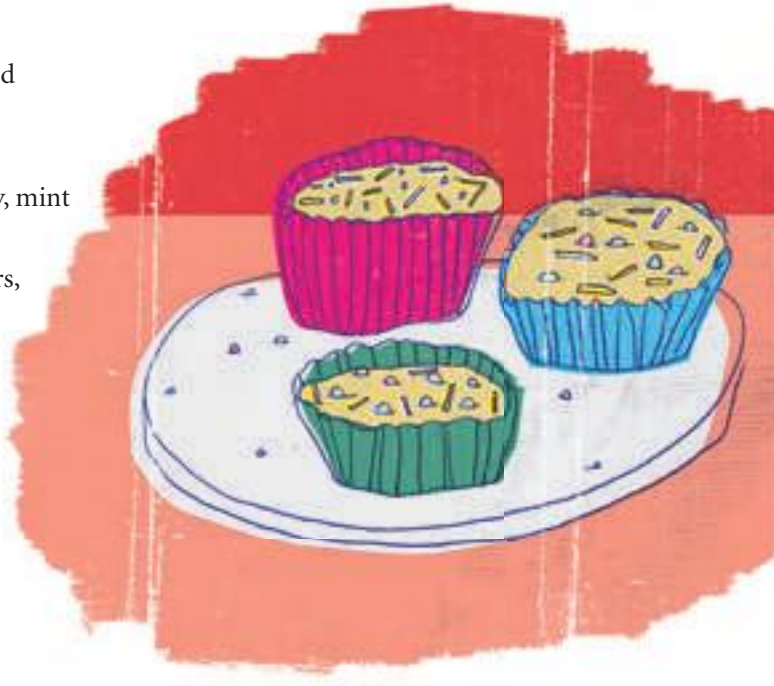
crouton: small cube of bread crisply fried or toasted

PP Web Destination

Styles of service

Many factors influence how food is served. These include the number of people being served, the type of establishment where the food is eaten, the type of menu, the cost or price, and the time available for the meal. Following are descriptions of some of the more common styles of food service.

- A buffet is a type of self-service. Customers help themselves from a range of dishes from a table. This style of service is also known as smorgasbord.
- À la carte means 'according to the card', which indicates that dishes are ordered from a written menu or chalk board. The customer can choose the number and type of dishes and the meal is cooked to order.
- At silver service restaurants customers sit down to empty plates. The waiter serves all the food to each customer. The vegetables are served from a separate container with a fork and spoon in a manner similar to tongs. The meat may be carved at the table and placed on plates by the waiter. Each customer is asked individually what he or she would like, and the food is then placed attractively on the plate. The waiter is responsible for the presentation of the food on each plate.



Hands on

Using garnishes with cake

Purpose

To present a slice of chocolate cake to coffee-shop standard, using garnishing and presentation principles. Even the plainest chocolate cake can be something special when given deluxe treatment.

Materials

slice of un-iced chocolate cake (from a round cake)

selection of fruit such as strawberries, passionfruit and kiwi fruit; cream; raspberry topping; chocolate; cocoa; icing sugar

paring knives, piping bags and nozzles, paper to cut stencils, shakers for icing sugar and cocoa, skewers

Steps

1. Place the slice of cake on a plate.
2. Garnish using fanned strawberries, runny cream and raspberry topping to create spider webs, hearts or wave effects; curls made from melted chocolate; or cocoa or icing sugar dusted onto the plate or cake through a paper stencil.
3. Present your slice to the class.

Activities

1. Which slice of cake looked the best? Why?
2. Which effects were easy to create?
3. Explain why a piece of chocolate cake might sell in a cafe for more than $4 per slice.

UNIT REVIEW

Looking back

1. Explain the role of garnishes.
2. Define the three styles of service.
3. Speculate on the role of restaurant staff for each style of service.

For you to do

4. Design a menu card for an à la carte restaurant. List three entrées, six mains and four desserts. Include prices and a short description of each dish.

Taking it further

5. Observe a demonstration of silver service dining. Practise laying a table for three courses and serve each other using silver service techniques.

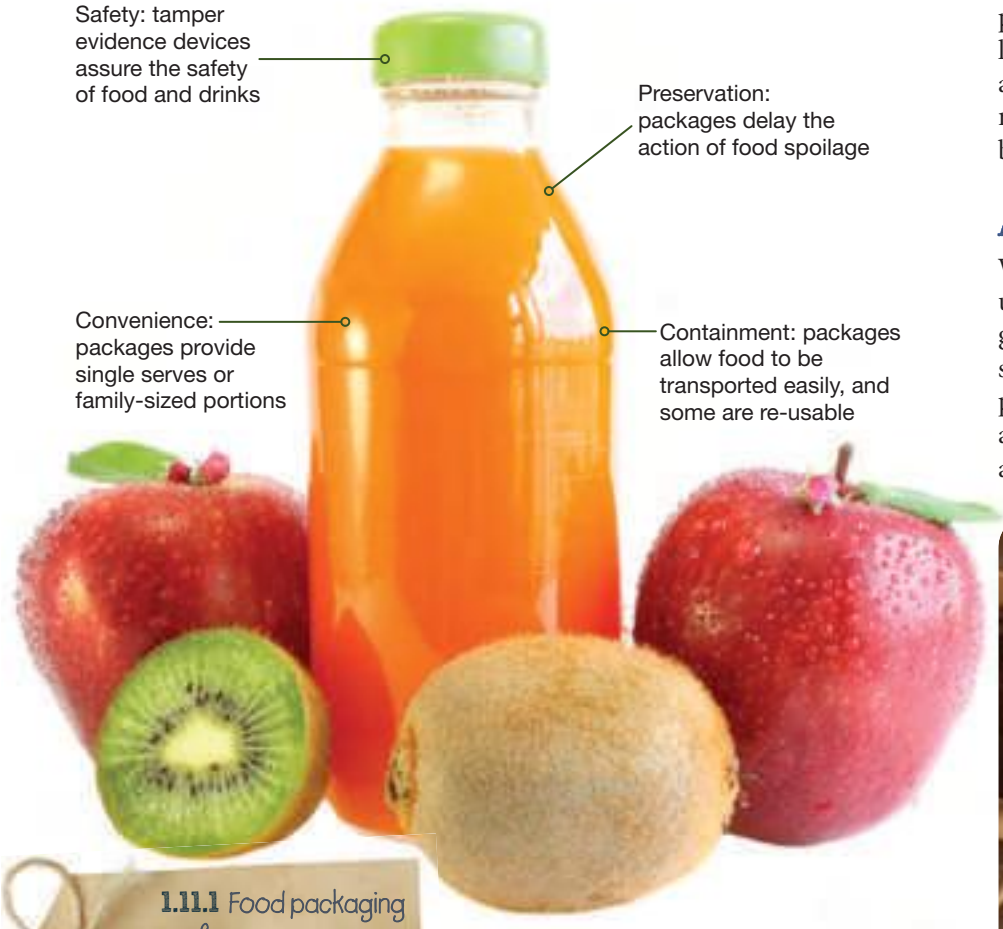
1.10.2 Attractively presented, well-garnished food is an example of good presentation.

1.11

Food packaging

Forms, materials and functions

There is a variety of traditional forms of packaging (see 1.11.3).



1.11.1 Food packaging performs numerous functions and is an essential part of food processing.

Technological developments

As technology develops, so too does packaging technology. Many new and innovative forms of packaging have been designed to meet the needs of consumers. These new designs have proved to be very useful in the food industry.

Modified atmosphere packaging (MAP)

In this type of packaging process the air inside the package has been either changed or removed completely.

Barrier packaging

Some foods, such as fruit and vegetables, give off gases that help to ripen the food. However, manufacturers don't want food to ripen too quickly, especially during transport and storage, so they use a special plastic that lets out ripening gases and lets in other helpful gases. This is known as barrier packaging. Fruit and vegetable refrigerator storage bags are a type of barrier packaging.

Active packaging

When foods are packaged, oxygen is still used up and carbon dioxide and other gases produced. Manufacturers now place small sachets called 'scavengers' into food packages. These help to absorb moisture and other gases that may spoil food. They are used in wet or dry noodle packs.

1.11.2 How many types of packaging feature in a typical gift box of chocolates? Which elements are recyclable?

Modified gas packaging

Certain gases, such as oxygen, contribute to spoiling in food. Manufacturers have discovered how to remove oxygen from packaging and replace it with another gas, such as carbon dioxide or nitrogen, that helps to slow food decomposition. Fresh pasta can be packaged in plastic tubs with peel-back lids using modified gas packaging.

Vacuum packages

Oxygen contributes to spoiling in food. Manufacturers can remove all air by sucking it out with a special type of vacuum. Meat such as bacon can be packaged in vacuum packages.

RECIPE

EASY-AS APPLE PIE p. 295

THREE-INGREDIENT PARTY PIES p. 296

1.11.3 Packaging characteristics and disadvantages

Packaging type	Characteristics	Disadvantages
Paper and cardboard Paper is one of the most widely used forms of packaging in the world.	• easily folded into different shapes and sizes • lightweight but relatively strong • made into various thicknesses or laminated • able to be recycled • a renewable resource (timber plantations) • easy to print on • very cheap to produce	Lack of resistance to moisture, odours, insects and rats, and the high possibility of damage by crushing or squashing during transport.
Glass Glass packages are very popular for various reasons.	• resealable • able to be printed on • able to be recycled and re-used • transparent so food can be seen easily • able to be coloured or tinted • non-reactive with other foods • very strong and durable • able to be heated to high temperatures so is hygienic and safe	Can be cracked or broken, may be heavy to transport and is relatively costly to recycle.
Metal Standard cans are made from aluminium, tinplate and steel. Aluminium can also be rolled into a fine sheet and sold as aluminium foil. Aluminium foil can be used to coat or line packages such as muesli bar wrappers or potato crisp bags.	• sterile and safe • easily opened with a ring pull or can opener • relatively lightweight • protects against moisture, light and air • strong and durable • easy to stack • heat resistant • easily labelled • versatile	May rust when poorly handled, may dent if dropped, causing damage to the seal. Not a renewable resource, although it can be re-used and recycled, but can be difficult to recycle (especially when aluminium is mixed with other metals such as tinplate and both metals must be separated).
Plastic Plastic packages can be either: • flexible, like those used for cakes, biscuits and cling wraps, which are thin plastic films that are made into a reel or sheet • rigid, like those used for ice-cream, margarine, yoghurt and sauce containers, which are solid, moulded plastics that are very strong and heat-resistant.	• able to be formed into many different shapes • safe • easy to carry • relatively cheap • strong and stable • sometimes able to be recycled (such as PET plastics) • lightweight • resealable • easily labelled	May be made from non-renewable resources (coal, oil and gas) and in many cases is not recyclable.

A glass milk bottle has to be re-used almost ten times before it is as environmentally friendly as a plastic milk bottle.

biodegradable: able to decompose because of the activity of living organisms such as bacteria

Australians use more than 6 million plastic bags every year.

Blind taste test

Purpose

To compare the same product from different packages to determine whether they taste different.

Materials

soft drink from three different packages: glass, plastic, aluminium can

glasses and blindfolds for each student

Steps

1. Your teacher will have three samples of soft drink for you to taste. One will have come from a glass bottle, one from a plastic PET bottle and the third from a can.
2. Taste each one and try to identify the package that each sample came from.

Activities

1. Compare your answers with those of others in your class. Did they agree? What led you to these conclusions?
2. When your teacher revealed the sources, were you right? Were you surprised?

Environmental impact

Many consumers are concerned with the quantity of packaging that is produced, then thrown out as waste. Governments, together with food manufacturers, are working to minimise the impact that packaging has on the environment. The main issues are:

- **biodegradable** versus non-biodegradable packaging—some packages break down quickly, while other take years or may never completely break down
- re-using and recycling packaging—some packages can be recycled and re-used and not just taken to the rubbish dump for landfill
- reducing unnecessary packaging (many food companies make packages inside packages)—this may be convenient but it puts great pressure on the environment
- pollution from packaging—discarded packaging, a common feature of streets and waterways, is hazardous to birds, fish and animals, which can easily become suffocated or strangled by dumped packaging
- wastage of resources (especially non-renewable resources such as coal, oil and gas)—plastic packaging is made from non-renewable resources, and eventually supplies will be depleted
- reduction in space available for landfill—as rubbish dumps and tips fill up and more land is needed for building homes and workplaces, communities must consider how waste can be reduced.

Food packaging waste will always have an impact on the environment. It is up to governments, food companies and consumers to do what they can to improve the situation.

RECIPE

VIETNAMESE RICE PAPER ROLLS p. 297

Food labels: what do they mean?

1 Date marking

Foods with a shelf life of less than two years must have a 'best before' date. It may still be safe to eat those foods after the best before date, but they may have lost quality and some nutritional value. Those foods that should not be consumed after a certain date for health and safety reasons must have a 'use by' date. Bread can use a 'baked on' date if its shelf life is less than seven days.

2 Percentage labelling

Packaged foods have to carry labels which show the percentage of the key ingredients in the food product, enabling you to compare the food's components. The characterising ingredient for this fruit salad yoghurt is fruit, which comprises banana 8%, strawberry 8%, grape 4% and peach 2%. Some foods such as cheese have no characterising ingredients.

3 Ingredient list

You will usually find the ingredient list on the back of the product. Ingredients must be listed in descending order (by ingoing weight). So if fat, sugar or salt are listed near the start of the list, the product contains a greater proportion of these ingredients.

12 Food recall information

Considering the number of foods available, recalls of unsafe or unsuitable foods are uncommon. Food labels must have the name and business address in Australia or New Zealand of the manufacturer or importer, as well as the lot identification of the food (or date coding). This makes food recalls more efficient and effective. In Australia each year there are about 70 food recalls, most of which are precautionary.

4 Food additives

Food additives have many different purposes, including making processed food easier to use or ensuring food is preserved safely. All food additives must have a specific use, must be assessed and approved by FSANZ for safety, and must be used in the lowest possible quantity that will achieve their purpose. Food additives must be identified, usually by a number, and included in the ingredients list.

11 Country of origin

In Australia, packed and some unpackaged foods must state the country where the food was produced. This could just be a label identifying the country where the food was packaged and a statement that the food is made from wholly or partially imported ingredients (where applicable). In New Zealand, country of origin requirements apply only to wines.

5 Nutrition information panel

Most packaged foods must have a nutrition information panel, which must be presented in a standard format, showing the amount per serve and per 100 g (or 100 ml if liquid). There are a few exceptions:

- very small packages, about the size of a larger chewing gum packet
- foods with no significant nutritional value (such as a single spice, tea, and coffee)
- foods sold unpackaged (unless a nutrition claim is made)
- foods made and packed at the point of sale, e.g. bread from a local bakery.

10 Directions for use and storage

Where specific storage conditions are required in order for a product to keep until its 'best before' or 'use by' date, manufacturers must include this information on the label. For example, 'this yoghurt should be kept refrigerated at or below 4°C'.

6 Legibility requirements

Any labelling requirement in the Food Standards Code must be legible, prominent, distinct from the background and in English. The size of the type in warning statements must be at least 3 mm high.

9 Name or description of food

Foods must be labelled with an accurate name or description, for example fruit yoghurt must contain fruit. If it were to contain fruit flavouring rather than real fruit, the label would need to say 'fruit flavoured yoghurt'.

8 Information for food allergy sufferers

Some foods can cause severe allergic reactions. These foods include various nuts, shellfish, finned fish, milk, eggs, sesame and soybeans and their products. These ingredients must be declared on the label. Foods containing sulphite preservatives must be labelled if they have 10 mg per kilogram or more in their product, as it may trigger asthma attacks.

7 Labels must tell the truth

Suppliers must label food products with accurate weights and measures information, which are regulated by Australian State and Territory and New Zealand Government fair trading agencies. Fair trading laws and food laws in both countries require that labels do not misinform through false or misleading representations. For example, a food with a picture of strawberries on the label must contain strawberries.

Source: Food Standards Australia and New Zealand.

1.11.4 Food labels—what do they mean? As a consumer, do you know how to decode them?

tetrapak: multi-layered paperboard package shaped like a brick; often used for liquid products such as fruit juice and milk

Food labelling

There is a legal requirement that aspects of the contents of a food package must be stated on the label.

Not all food has to be labelled. Some of the best foods may be unlabelled. These include:

- unpackaged foods, for example meat fruit, vegetables and restaurant meals
- food made on the premises where it is sold, for example bread from a bakery
- food packaged in the presence of a consumer or at the request of a customer, for example takeaway food or pizza
- food sold at a fundraising event, such as a school fete.

UNIT REVIEW

Looking back

1 a List five reasons for packaging food.

b For each reason, give an example of a packaged food.

2 How does packaging encourage you to buy a product?

3 Define the terms 'barrier', 'modified atmosphere packaging' and 'active packaging'.

For you to do

4 Interview an elderly neighbour or relative about what grocery shopping was like when they were children. What changes do they notice now?

5 Devise an experiment to test the protective properties of an egg carton.

6 Find a package you suspect to be made from a variety of materials or to have many layers or coatings (such as a **tetrapak**). Slice the package in half and try to separate the layers. Sketch what you find, try to identify each layer and suggest why it was necessary.

Taking it further

7 a Collect a photograph of a packaged food product from a magazine or newspaper advertisement, or draw your own. Label the picture, identifying the reasons the particular food has been packaged in that way.

b Compile an advantages and disadvantages list for the packaging illustrated for your product.

8 In your own words, describe what you think is meant by the term 'over-packaging'.

Chapter review

Looking back

1. Define 'cross-contamination'.
2. State the temperature range for the danger zone.
3. Suggest two ways in which frozen food may be safely thawed.
4. List the names of five common food-poisoning bacteria and foods they are associated with.
5. With reference to the danger zone, explain how bottling and freezing are effective preservation methods.
6. List four reactions involved when carbohydrates are heated.
7. With reference to mayonnaise, explain the process of emulsification.
8. Identify four elements crucial to a recipe.
9. Define the following terms: boil, fold, sauté, sear, stew.
10. Explain the significance of cooking foods containing water-soluble and/or fat-soluble vitamins.
11. Suggest two food preparation methods to increase fibre in the diet.
12. Describe the two levels of food processing. What do you imagine tertiary processing to be?
13. Name two negative environmental effects of food processing.
14. Explain two economic impacts of food processing on families.
15. List four types of food packaging materials. What are the advantages of each?
16. List twelve pieces of information found on a food label.

For you to do

17. Describe the difference between food hygiene and personal hygiene. Use photographs from magazines to illustrate your answer.
18. Using movie-making software, create a sixty-second television commercial informing consumers of some simple food safety issues in the home.
19. Design a menu for a two-day camping trip. Try to incorporate a range of foods processed by different methods.
20. Conduct a detailed survey to determine the most and least liked foods in the class. Include questions that determine which sensory properties lead to each preference.
21. Using digital photography, create an information poster explaining denaturation and coagulation of egg protein.
22. Write and record a radio advertisement encouraging listeners to take up cooking. Explain why using fresh ingredients is important.
23. Create a class collection of takeaway menus. Which could be improved in presentation? Develop a new version using Microsoft® Publisher®, or a similar program.
24. Collect a food package such as a label from a can, or a cardboard or plastic wrapper from a packet of biscuits. Create a poster similar to that on page 29, identifying all the required information.

Taking it further

25. Research the use of colour-coded chopping boards. Why are certain colours allocated to certain foods?
26. Draw the floor plan of your Food Technology room. Label the location of fire fighting equipment, fire blankets and first aid kit.
27. Investigate the origins of an unusual ingredient found in your local supermarket. Use the internet to help.
28. Design a production line for the mass production of vegetarian sushi (page 292). Allocate jobs for efficiency. How many people would be involved?
29. Investigate a charity that accepts unsold food or donated non-perishable foods, such as OzHarvest or Food Bank. Write a one-page report on how this organisation works.
30. Using the website link, go to the Clean Up Australia website and locate the latest statistics on litter from Clean Up Australia Day. How much of each type of food packaging is represented?

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Chapter 2

Eat well, live well

Core: Nutrition and consumption

There is an Italian saying, 'mangia bene, vivi bene', meaning 'eat well, live well'.

Food supplies nutrients, which allow the body to function and develop from infancy to adulthood. Poor food selection may result in problems that can affect your way of life. Making good food choices can be difficult, as there is an abundance of food available. In this chapter you will examine the factors that contribute to good nutrition and learn to make healthy food selections.

Chapter outcomes

In this chapter you will learn about:

- food nutrient groups and fibre
- foods developed to enhance health
- over- and undernutrition, including anorexia
- food consumption in Australia
- influences on food selection
- national guidelines for healthy eating, including nutrition and labelling
- nutritional requirements of different stages of the life cycle
- selection of nutritious foods.

In this chapter you will learn to:

- explain the role of food and fibre in the body
- discuss nutritionally modified foods
- outline conditions of over- and undernutrition, including anorexia
- conduct internet searches to identify food consumption trends and their effects on health
- outline how dietary disorders can be prevented and managed
- identify guidelines for healthy eating, including labelling symbols
- analyse the nutritive content of foods
- outline requirements of different life cycle stages
- design, plan and prepare diets for the different stages
- tabulate and analyse data using spreadsheets and graphs.

The food nutrient groups

2.1

Nutrients are chemical substances found in food. There are six nutrients—proteins, carbohydrates, lipids, vitamins, minerals and water. Each nutrient has a specific role in the body.

Proteins

Proteins are found in every body cell and perform the following functions.

- They allow the body to grow and to repair. As our cells are worn down, protein is used to build new cells, such as hair, nerves and skin.
- They form the basis of many of the body's chemical substances, such as enzymes, hormones and haemoglobin.
- They provide energy (17 kilojoules per gram). The body will use protein only if there are no other sources of energy. The use of protein for energy is at the expense of growth and repair.

Proteins are complex substances made from carbon, hydrogen, oxygen and nitrogen, which combine to form amino acids. There are twenty-two amino acids that combine in various ways to form different proteins. Each day, food must supply eight of these amino acids (ten for children), as the body cannot manufacture them. These are called essential amino acids. Proteins that contain all the essential amino acids are called complete proteins, while those lacking one or more essential amino acids are classed as incomplete proteins.

When some incomplete proteins are combined they may produce a complete protein if the amino acid lacking in one is present in the other. An example of this is baked beans on toast, which is useful for vegetarians and **vegans**.

One or two servings of complete protein foods are required daily. When you consume more protein than is required, the remainder is converted to body fat.

2.1.1 Sources of protein

Complete proteins	Incomplete proteins
Milk	Legumes, for example dried beans
Yoghurt	Pulses, for example split peas and lentils
Cheese	Nuts
Eggs	Seeds, for example sesame
Meat	Cereals, for example rice and wheat
Poultry	Cereal products, for example bread and pasta
Fish	
Soy beans	
Soy milk	
Tofu	
TVP (textured vegetable protein—a meat substitute)	

Carbohydrates

Though the processes of **photosynthesis**, plants produce and store carbohydrates.

There are two types of carbohydrates:

- simple carbohydrates or sugars—these are usually sweet and found in a variety of fresh and processed foods, for example fruits, milk, sugar and sugary foods
- complex carbohydrates or starches—these take longer to digest and are found in grains, for example rice, bread, pasta, vegetables, wheat, corn and cereal products.

The function of carbohydrates is to supply **energy** to the body. After digestion, all sugars and starches are broken down to the simplest carbohydrate—glucose. The body converts glucose to energy, which can then assist the body to undertake work. Even when you are asleep your body is busy working and using energy. Each gram of glucose can provide 17 **kilojoules** of energy. If the body receives more energy from food than it needs, the excess is converted to body fat and stored until required again for energy.

2.1.2 No single food has all the nutrients in the quantities required by the body, so a variety of foods should be consumed daily.

RECIPE

CAFÉ-STYLE SCRAMBLED EGGS p. 298

vegan: vegetarians who eat no animal products at all

photosynthesis: process whereby leaves of a plant use the energy of the sun to change carbon dioxide and oxygen into carbohydrates, which are then stored in the plant

energy: fuel we need from food to function and be active. Energy requirements vary depending on your age, body size and physical activity.

kilojoules: standard unit of energy measurement

Many foods provide sugars. Fructose and glucose are found in fruits and honey, lactose in milk, maltose in malt and sucrose in sugar.

Sulphur is an element found on some protein molecules. It contributes to the smell of rotten egg.

The word 'carbohydrates' is often abbreviated to CHO because carbohydrates are made from the elements carbon, hydrogen and oxygen.

Margarine, which is made from vegetable oil, is grey until the yellow colour is added to make it resemble butter.

Lipids

Lipids are also known as fats or oils. Fats are solid at room temperature, while oils are liquid. Lipids help the body to function by providing:

- a concentrated source of energy (37 kilojoules per gram)
- warmth, as most fat is found under the skin
- protection from injury for bones and other organs
- transport for Vitamins A, D, E and K around the body
- fatty acids, which are used to help form the walls of body cells.

Lipids are found in fats and oils. They are also found in foods such as lean meats, nuts, poultry and eggs. These foods supply other valuable nutrients as well as fats, and so make a sensible choice as a means of including lipids in the diet.

There are three different types of lipids:

- saturated fats—these are in animal products such as butter, cream, full-cream milk, cheese, eggs, coconut and many snack foods. They are linked to high levels of bad cholesterol in the blood, which can thicken blood vessels and increase the risk of heart attack.
- monounsaturated fats—these are in olive oil, canola oil, olives, peanuts and avocadoes. These are less likely to raise blood cholesterol levels.
- polyunsaturated fats—these are in vegetable oil, margarine and fish oils. They are less likely to raise cholesterol levels in the blood and some food sources have omega-3 fatty acid, which can reduce blood cholesterol levels.

Importantly, when more lipids of any source are consumed than the body needs for energy, weight gain results.

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2.1.3 Butter, sour cream, cream and oil are added to foods to enhance the flavour of food.

Testing for the presence of lipids

Purpose

To assess whether a food is high in lipids.

Materials

butter
coconut
crushed potato crisps
custard powder
grated cheese
instant potato
mayonnaise
oats
sugar
sunflower or sesame seeds
sheet of greaseproof paper

Steps

1. Place a tablespoon of each food on greaseproof paper.
2. An hour later remove the food from the paper.
3. Observe whether a grease mark has been left.
4. Assess which foods are high in lipids.

Activities

1. Which foods did you think would be high in fat before conducting the experiment? How did your initial results compare to the results of your experiment?
2. Which foods surprised you by being high in fat?

Hands on

Ice-cream in a bag

Purpose

To create a dessert that is low in fat.

Homemade ice creams and desserts do not have to be high in fats and kilojoules and they can be fun to make.

Materials

ice cubes
6 tablespoons rock salt
½ cup milk
¼ teaspoon vanilla
1 tablespoon sugar
1 large zip lock bag
1 sandwich-size zip lock bag

Steps

1. Fill the large bag half full of ice, and add the rock salt. Seal the bag.
2. Put milk, vanilla and sugar into the small bag and seal it.
3. Place the small bag inside the large one and seal it again carefully.
4. Shake until the mixture becomes ice-cream, which takes about 5 minutes.
5. Wipe off the top of the small bag, then open it carefully. Enjoy!

Activity

How does the ice-cream in a bag compare in taste and texture to commercially available ice-cream?

Vitamins

Only small amounts of vitamins are required daily to protect and regulate the body. Vitamins can be referred to by their alphabetical or chemical names.

There are two types of vitamins:

- fat-soluble vitamins (A, D, E and K)—these vitamins accumulate in fat stores and the liver. If you consume too much of these they can be toxic.
- water-soluble vitamins (C, B complex and folate)—these vitamins are absorbed quickly and need to be consumed daily. Water-soluble vitamins are easily destroyed by cooking. Excess amounts of these vitamins are excreted by the body.

2.1.4 Sources and roles of vitamins

Vitamin	Role in body	Rich food sources
A	Necessary for growth, healthy skin and eyes.	Dairy foods, margarine, eggs, oily fish, green and orange fruits, and vegetables.
B1, B2, B3 (thiamine, riboflavin and niacin)	Helps the body to obtain energy from food.	Bread, flour, breakfast cereals, liver, kidney, meat and potatoes.
Folate	Contributes to the healthy development of babies in pregnancy.	Bread, flour, breakfast cereals, liver, kidney, meat and potatoes.
C (ascorbic acid)	Keeps the skin, bones and muscles healthy. Increases resistance to infection and helps the body absorb iron.	Green vegetables and fruit, especially citrus fruits.
D	Needed to form strong bones and teeth. Helps the body absorb calcium.	Butter and margarine, milk, eggs and oily fish. The action of sunlight on the skin also forms Vitamin D in the body.

Minerals

The body requires over twenty mineral elements daily in very small amounts. The function of minerals is to protect the body against disease and regulate body processes.

- Calcium works with other minerals, such as phosphorus, to strengthen bones and teeth. The best sources of calcium are milk, yoghurt, cheese, canned fish with bones, and nuts.

Carrots really can help you see in the dark! Vitamin A is known to prevent 'night blindness' and carrots are loaded with Vitamin A.

2.1.5 Fresh water has no kilojoules, sugar or fat, and can contain fluoride.

The mineral fluoride, which helps strengthen teeth, is added to public drinking water in most parts of Australia.

dehydration: lack of water in the body

Babies become easily dehydrated, so parents and caregivers should ensure that that they receive sterilised water on a very hot day.

Web Destination

- Iron is required to form haemoglobin, which transports oxygen in the blood. Red meats are rich in iron, while poultry, fish, legumes, wholemeal bread, green leafy vegetables, breakfast cereals and eggs are also good sources.
- Sodium helps to regulate the amount of fluid in and around the body cells. It also helps the contraction and relaxation of muscles. Salt is a combination of sodium and the mineral chloride. Most Australians consume too much sodium, not just because salt is used in cooking, but because it is used in many processed foods.

Water

The human body is 70 per cent water. While humans can survive without food for a few weeks, they will die of **dehydration** if they are without water for a few days. This is because the functions of water are to:

- maintain body temperature
- remove wastes from the body
- carry nutrients around the body
- help cushion joints and organs
- assist digestion
- act as medium for reactions to take place in cells.

The body requires about two litres of water a day to carry out its roles and prevent problems such as constipation and kidney stones. Good sources of water are fresh drinking water, fruits, vegetables, milk and juices. It is best to limit intake of drinks that are high in sugar, minerals and caffeine.

RECIPE

TANDOORI CHICKEN WRAP p. 299

UNIT REVIEW

Looking back

1 Answer true or false to each of the statements below.

a Proteins are found in all body cells.

b Amino acids make up carbohydrates.

c When the body consumes more protein than it needs, the excess turns to body fat.

d Starches take less time to digest than sugars.

e Fats are liquid at room temperature.

2 How many kilojoules (energy value) per gram do each of these nutrients provide?

- proteins
- carbohydrates
- lipids
- water

For you to do

3 Examine the following ingredient list from a packet cake mix:

sugar, wheat flour, milk solids, vegetable oils, glucose syrup, egg powder, salt, baking powder, oats, coconut.

Identify ingredients rich in proteins, carbohydrates, lipids and sodium.

Take it further

4 Prepare a three-minute speech covering the following points about a vitamin or mineral allocated to you by your teacher:

- the role of the vitamin or mineral in the body
- rich food sources of the nutrient
- what occurs if you have an inadequate intake of the nutrient.

Visual aids may be used in the report to assist your presentation.

The role of fibre in the diet

Fibre

Fibre is complex carbohydrate found in cereals, legumes and pulses, fruits and vegetables. Fibre cannot be digested, but is important in maintaining a healthy digestive system and preventing problems, such as:

- constipation
- **haemorrhoids**
- **diverticulitis**
- **irritable bowel syndrome**
- obesity
- coronary heart disease
- diabetes
- colon cancer.

Most Australians do not eat enough fibre. While fibre supplements are available, it is best to obtain fibre from food sources that also provide other valuable nutrients.

There are three types of fibres: soluble fibre, insoluble fibre and resistant starch.

Soluble fibre

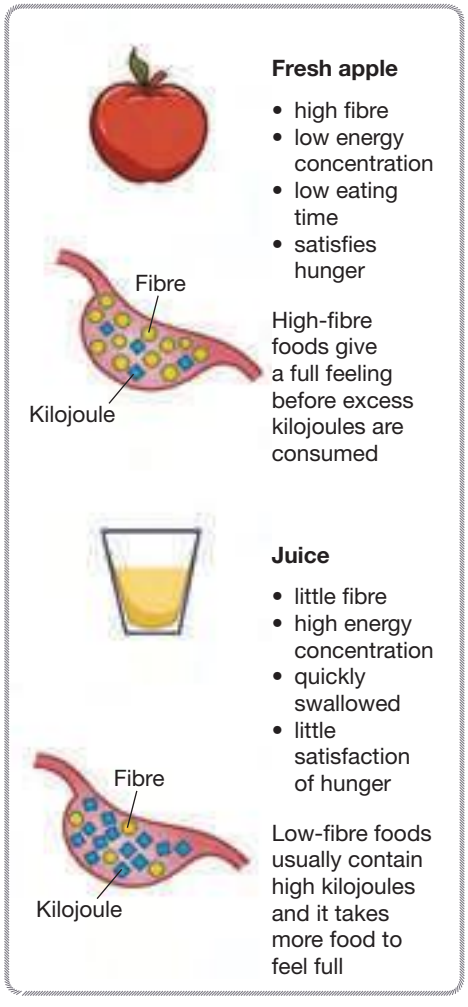
Soluble fibre, such as pectin and gums, slows down stomach-emptying, making you feel full longer. It helps to control weight, blood sugar levels and lower cholesterol levels. Good sources of soluble fibre are fruits, vegetables, oat bran, barley, seed husks, dried beans, lentils, peas, soy milk and soy products.

Insoluble fibre

Insoluble fibre, such as cellulose, hemicelluloses and lignin, absorbs water, so helping to move the contents of the digestive system. It therefore prevents constipation and makes you 'regular'. Good sources are wheat bran, corn bran, rice bran, the skins of fruits and vegetables, nuts, seeds, dried beans and wholegrain foods.

Resistant starch

Resistant starch is a type of starch that is difficult to break down in digestion but is useful in maintaining a healthy digestive system. Foods containing resistant starch are firm bananas, chick peas, many unprocessed cereals and grains, potatoes and lentils. Fibre is added to bread and breakfast cereals such as Hi-Maize®.



2.2.2 The effects of removing fibre from food

2.2.1 Simply changing to wholegrain products can increase your fibre intake.

haemorrhoid: varicose vein in the anus

diverticulitis: small hernias of the digestive tract caused by long-term constipation

irritable bowel syndrome: pain and bloating of the abdomen

You need around 25 grams of fibre a day. Three dried figs provide 10 grams of fibre, an apple 4 grams, half a cup of peas 9 grams, a cup of dried beans 19 grams. Make sure to drink plenty of water when you include fibre in your diet—otherwise you may get stomach pains.

RECIPE

MINESTRONE SOUP p. 300

Hands on

Design your own high-fibre breakfast cereal

Purpose

To create a healthy, high-fibre breakfast cereal. Muesli has many ingredients high in fibre.

Materials

Select ingredients from: rolled oats, desiccated or shredded coconut, wheat flakes, crushed Weet-bix, Corn Flakes, wheatgerm, sesame seeds, sunflower kernels, pumpkin seeds (pepitas), sultanas, wheat bran, dried chopped dried apricots, dried chopped dried apples, banana chips, raw sugar.

Steps

1. Select a minimum of five ingredients you would like in your muesli.
2. Combine the ingredients.
3. Place cereal in a plastic container.
4. Produce a label, giving the cereal a name and listing the ingredients in descending order.

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UNIT REVIEW

Looking back

1. What is dietary fibre?
2. List five health problems that can be prevented when a diet is adequate in dietary fibre.
3. Name three foods rich in insoluble fibre.
4. Answer true or false to each of the statements below.
   - Fibre is found in animal foods.
   - White rice has more fibre than brown rice.
   - Lignin is a dietary fibre.
   - You need to drink plenty of water when on a high-fibre diet.
   - Dietary fibre has no kilojoules because it is mainly indigestible.
   - Popcorn is higher in fibre than chocolate.

For you to do

5. Change the following menu so that it is higher in fibre:

   sugar frosted cereal with milk, toasted white bread with jam, orange juice.
6. Plan a high-fibre school lunch for children to take to school.
7. Fresh fruits and vegetables provide a rich source of fibre. For each letter of the alphabet, think of a fruit or vegetable that starts with that letter.

Taking it further

8. Make a Friendship Fruit Salad. In groups, organise for each team member to bring in a piece of fruit suitable for fruit salad. Prepare the fruit in class and enjoy it with some yoghurt or ice-cream supplied by the teacher.

Foods developed to enhance health

2.3

Many foods have been developed or modified to improve the health of Australians.

Probiotics

Probiotics contain live bacteria. Probiotic foods include yoghurts and fermented milks that have good bacteria such as lactobacillus and bifidobacteria.

The intestines contain both good and bad bugs. The good bugs help make Vitamin K, Vitamin B12 and folate. Eating a variety of healthy foods aids in keeping a balance of good and bad bugs in the digestive system. Poor diets, stress, ageing or antibiotics, however, can lead to a situation where there are more bad bugs than good bugs, causing problems such as diarrhoea and stomach ulcers. Probiotic foods therefore aim to introduce good bacteria to ensure a healthy digestive system.

Functional foods

Functional foods are those that provide extra health benefits beyond the traditional nutrients they already contain. These products are similar in appearance to conventional foods, but they have been modified or **enriched** with ingredients to provide added health benefits

2.3.1 Many milks are now functional foods; breakfast cereals are required to be enriched with Vitamin B.

enrich: add nutrients to improve nutritional value

2.3.2 Examples of functional foods and their suggested benefits

Functional foods	Benefits
Fermented milk drinks Yoghurts with healthy bacteria cultures Products with extra dietary fibre Gluten-free products	Improve the immune response and promotes intestinal health
Margarine with plant sterols Products containing omega-3 oils	Reduce cholesterol levels, protecting against heart disease
Milks and fruit juices enriched with calcium and iron Cereals enriched with vitamins and minerals such as Vitamin B	Reduce the risk of osteoporosis and anaemia
Artificially sweetened products and diet products Low-fat, low-sugar, low-salt products	Reduce the risk of disorders such as obesity, heart disease, Type 2 diabetes and hypertension

2.3.3 Yoghurt contains bacteria that assists digestion. Yoghurt is a common ingredient in Middle Eastern and Indian cooking.

Human breast milk is a probiotic food as it contains good bacteria to help prevent digestion problems in infants.

Low-fat cream will not whip successfully as it does not have enough fat content, but do use it for recipes in which whipped cream is not required.

FOOD IN FOCUS

Country Life Bakery

Country Life Bakery is a leading Australian producer of health breads that meet consumer needs for special dietary products.

The brand caters for a range of allergies and intolerances, and has developed gluten-free and functional breads, including low GI.

Established in the late 1980s, the brand bakes a range of loaves, rolls and pita breads made from wholegrains and flours including organic rye, spelt, rice, tapioca, mung bean, linseed and corn.

Breads are available throughout Australia from health food stores and major and independent supermarkets.

Country Life Bakery classes its breads as functional foods, as they provide extra health benefits, and cater for diseases such as heart disease and diabetes with gluten-free, heart-wise and low-GI breads. Indeed, they are associated with the Coeliac Society of Australia and they believe that they understand the needs of people with coeliac disease. Country Life Bakery also seek confirmation from their suppliers that all their ingredients are GM-free.

Source: Adapted from information on the Goodman Fielder website

Activities

1. How would you define a functional food?
2. Who would use this functional food?
3. What organic ingredients does the company use?
4. What does 'organic' mean?
5. Of the gluten-free breads, which would be the highest in fibre? Give a reason for your choice.
6. What do the initials GM stand for?

2.3.4 Breads available

Heart wise	Gluten-free	Digestive health
Heart wise mixed grain with oats Heart wise soft white with oats	Gluten-free white Gluten-free multigrain Low-GI gluten-free	Country grain and organic rye Country grain wholegrain spelt Country life organic rye Country life square rye

UNIT REVIEW

Looking back

1. Define the term 'probiotic food'.
2. Give two benefits of consuming probiotic foods.
3. Define the term 'functional food'.
4. Give an example of a functional food and describe the health benefits of this food.

For you to do

5. Identify the functional and probiotic foods in the following story.

   David sits down to breakfast. He pours a bowl of cereal containing added fibre to aid his digestion and hopefully reduce the risk of colon cancer and heart disease. Over the cereal he pours low-fat milk high in calcium to control his weight and prevent osteoporosis. He spreads his toast with margarine containing plant sterols, which the packaging claims will reduce cholesterol, and before he leaves for work he picks up his strawberry yoghurt containing millions of live bacteria for bowel health.

Taking it further

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6. Examine a package for a functional or probiotic food and indicate the benefits claimed on the package.
7. Milk is now available in many functional varieties. Using the website link, visit a supermarket website to find all the functional varieties of milk you can purchase and determine who the product has been designed for and why.

Under- and overnutrition and diet-related disorders

2.4

In Australia, there is an abundance of food, and advances in technology have meant that our lifestyles are less active than those of past generations. Increasingly, Australians are suffering diet-related disorders that indicate overnutrition or undernutrition. Overnutrition results from consumption of an excess of nutrients, while undernutrition is the result of nutrient deficiency.

Type 2 diabetes

A person who has diabetes has too much glucose in the blood. This occurs because the person does not produce enough of the hormone insulin, or the insulin does not work well. Insulin moves glucose from the blood into the body cells, where the glucose is converted to energy. Therefore diabetes can be life-threatening and can contribute to other problems, such as heart disease, kidney disease, eye disease and infections.

About 10 per cent of diabetics have Type 1 diabetes, whereby for some unknown reason the pancreas stops making insulin. Type 1 diabetes usually affects young people. They need daily insulin injections in addition to regular blood glucose tests and a controlled eating and exercise plan.

The most common form of diabetes in Australia is Type 2 diabetes. It occurs generally in people over the age of 40 but is now increasingly affecting younger people. The pancreas produces less insulin or the insulin is blocked because of excess fat. Unlike Type 1 diabetes, Type 2 can be avoided. A healthy body weight, regular meals and a balanced diet help. It is also best to choose low-GI foods that slowly release energy, such as wholegrain breads and cereals, fruit, vegetables, legumes and pulses, and limit sugary foods that release glucose quickly into the blood.

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Coeliac disease

People who suffer coeliac disease are sensitive to the protein gluten found in wheat. The gluten damages the lining of the small intestines, making it harder to absorb nutrients from food and commonly causing stomach pains.

A person with coeliac disease needs to avoid foods containing wheat and often rye, barley and oats as well. This can be difficult, as gluten is present in many products, such as bread, biscuits, cakes, pastries, breakfast cereals, pasta, sausages, soups, sauces and puddings. Potato, rice, soy bean and some cornflours are good substitutes for wheat flour. These are commonly used in the gluten-free products that are available commercially.

Obesity

A person is considered obese when the body is 20 per cent over its ideal weight. Obesity is the most common nutritional disorder in Australia and can contribute to other conditions, such as heart disease, diabetes and gall bladder disease.

While there can be medical and genetic reasons for obesity, it usually results from consuming more energy from food than the body needs. The extra energy is converted to fat and stored on the body, resulting in weight gain. In order to lose weight, the body needs to take in fewer kilojoules than it uses for energy.

To prevent obesity it is best to:

- eat more fresh fruit and vegetables, as they are low in energy and filling
- cut down on foods rich in sugar and fat, as they are high in kilojoules
- drink more water, as it has no kilojoules
- eat more wholegrain and high-fibre products, as they make you feel full
- keep active to use up energy.

Diabetes is world's fastest growing chronic disease.

Gluten is found not only in breads and cereals but also in many additives in processed foods, such as thickeners.

RECIPE

LAMB RISSOLES WITH MINT PEA MASH
p. 301

FOOD IN FOCUS

Diabetes Australia—NSW

Diabetes Australia—NSW is a charity that works to make a positive difference to the lives of people living with and at risk of diabetes.

Established in 1937, the mission of Diabetes Australia—NSW is to improve health and in the process enhance lives by being the primary point of reference for people living with and at risk of diabetes. They achieve this by delivering advocacy, products, programs, information and services.

Diabetes Australia—NSW provides a range of health initiatives for people with Type 1, Type 2 and gestational diabetes including information, education, exercise and healthy lifestyle programs/resources. Along with this they conduct Type 2 diabetes prevention programs, healthy shopping tours, camps for children with Type 1 diabetes, and diabetes education for staff at schools; provide support for health care professionals and families; and have a range of multicultural and multilingual resources.

Diabetes Australia—NSW also administers the National Diabetes Services Scheme (NDSS), a federal government funded initiative. The scheme delivers diabetes-related products at subsidised prices and provides information and support services to people with diabetes. Registration is free and open to all Australians diagnosed with diabetes.

As a charity Diabetes Australia—NSW relies on the support of members of the community, donations from the public and collaborations with stakeholders.

Diabetes Australia—NSW conducts a variety of fundraising events, including Diabetes Buzz Day, Great Australian Bite and NSW Corporate Games, which raise money and awareness for diabetes awareness, research and education programs and advocacy.

The two major awareness events for diabetes in Australia are Diabetes Awareness Week and World Diabetes Day. These are supported by Diabetes Australia—NSW and play an important role in educating people about diabetes.

Source: Adapted from information on the Diabetes Australia—NSW website

Activities

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1. How does Diabetes Australia—NSW make a positive difference to people living with and at risk of diabetes?
2. How is Diabetes Australia—NSW a primary point of reference for people with diabetes?
3. Explain how the NDSS supports people with diabetes.
4. How does Diabetes Australia—NSW create awareness and support for the work it does?
5. Look up a dictionary to define the meaning of 'advocacy'.

A single can of soft drink contains eleven teaspoons of sugar. To burn up the energy from a can of soft drink you would have to walk 3 kilometres.

chronic: constant, continuing for a long time

Anaemia

In red blood cells, iron combines with protein to form haemoglobin, which carries oxygen in the blood. A lack of iron, therefore, reduces the amount of oxygen carried in the blood. A **chronic** shortage of iron in the diet can lead to anaemia. The symptoms include:

- pale skin
- fatigue
- breathlessness
- irritability
- always feeling cold
- lower attention span.

Anaemia is more common in women, particularly those between 11 and 50 years of age, because of menstruation, and because woman often restrict their food intake of iron-rich foods such as red meat when dieting or when too busy to eat a balanced diet. Demand for iron increases during pregnancy, growth stages and participation in endurance sports.

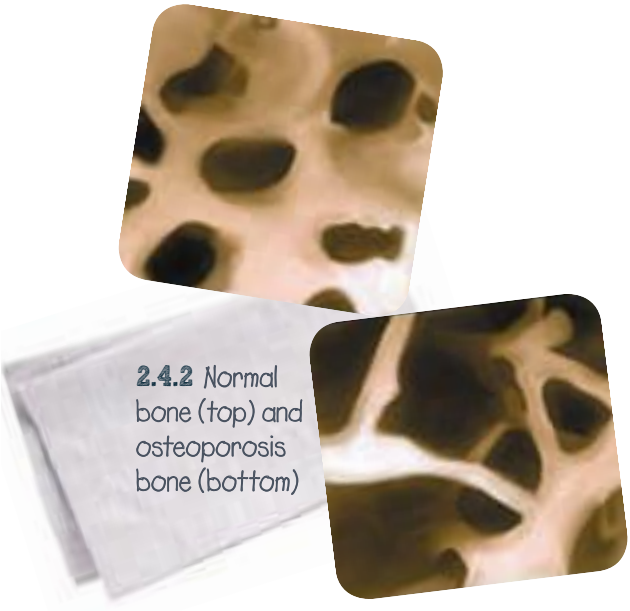
Osteoporosis

Osteoporosis is the loss of calcium from the bone resulting in:

- fragile bones
- loss of height
- pain
- curvature of the spine.

In Australia, osteoporosis affects one in two females and one in three males over the age of 60. The greater the bone mass achieved during childhood and adolescence when the body is building bones, the better the chance of preventing osteoporosis later in life. But eating enough calcium is essential throughout life to maintain strong bones and to help slow down the bone loss that occurs with ageing. Regular physical activity throughout life also helps to keep bones strong and healthy, as do adequate supplies of Vitamin D and phosphorus, which help calcium to work.

Dairy foods, particularly milk, cheese and yoghurt, are the best dietary source of calcium. Canned fish eaten with the bones, green leafy vegetables (except spinach), almonds, cereals and legumes also contribute some calcium to the diet.



2.4.2 Normal bone (top) and osteoporosis bone (bottom)

Coronary heart disease

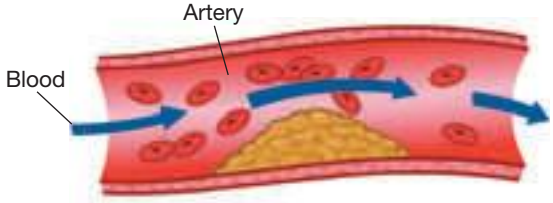
Coronary heart disease occurs when the arteries become narrow from fatty deposits that cling to the artery walls. This can trigger a blood clot in the artery, which may cause a heart attack.

The following factors increase the risk of heart disease:

- cigarette smoking
- a **sedentary** lifestyle
- family history of the disease
- a diet high in saturated fat
- obesity
- high blood pressure
- diabetes.

As saturated fats are linked to the disease, it is best to limit the foods that contain this type of fat, as well as limit the total fat content of the diet. Therefore it is recommended to:

- avoid fried foods and high-fat foods such as pastries and chocolate
- switch to low-fat products
- choose lean meats and remove the skin from chicken
- read labels for their fat content
- cut down on butter, and substitute vegetable oils when cooking
- eat more plant foods, particularly fibre-rich plants
- eat oily fish at least once per week—for example sardines, tuna and salmon—as the omega-3 fatty acids present can help to lower levels of fat in the blood.



Hardened cholesterol deposits in the arteries limit blood flow to the heart. A blood clot could seal off the artery and cause a heart attack.

2.4.3 Fat deposits build up in the arteries and restrict blood flow.

Have a tomato with your burger! When a source of Vitamin C (orange, lemon, capsicum, tomato etc.) is eaten with meat or cooked dry beans, the body makes better use of the iron in the protein food.

sedentary: involving little exercise, a lot of sitting

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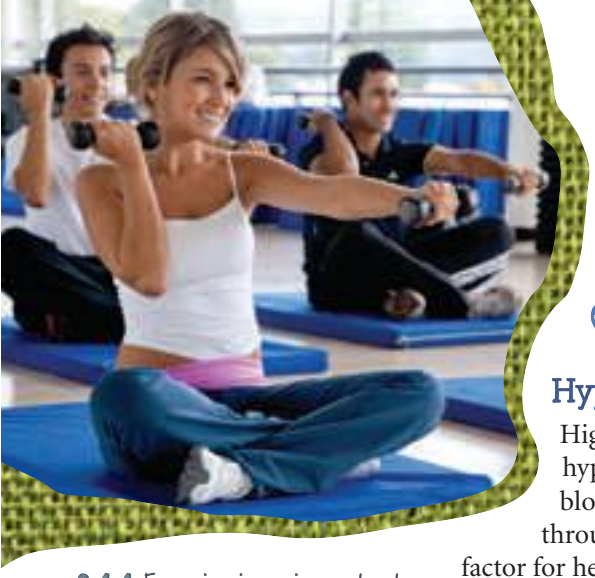

2.4.4 Exercise is an important part of a balanced life.

The word 'salary' comes from 'salt'. In the days of the Roman Empire, salt was given to soldiers as wages. Today, salt is common and is used in so many packaged foods that we consume more salt than we need.

tumour: abnormal swelling or lump in the body

Clogged arteries

Hypertension

High blood pressure, or hypertension, means that the blood pumps harder than normal through the arteries. This is a risk factor for heart attacks and strokes.

Too much salt in the diet, as well as family history of the disease, can contribute to hypertension. So can obesity and smoking. A low-salt and low-fat diet, as well as regular exercise, is recommended to avoid hypertension.

To avoid a high salt intake, it is best to:

- read food labels to establish their sodium content
- limit the intake of salty foods such as takeaways, snack foods and packet soups.
- substitute herbs and spices for salt
- remove the salt shaker from the table.

Colon cancer

Bowel or colon cancer is a common cancer, primarily affecting adults. Abnormal cells on the wall of the large intestines (colon) multiply to form a **tumour**, which can spread to other parts of the body.

High intakes of alcohol and red meat appear to increase the risk of colon cancer. Maintaining a healthy weight and consuming a diet that includes a variety of vegetables, a fruit, legumes, grains and some oily fish with omega-3 fatty acids appears to protect against the cancer.

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UNIT REVIEW

Looking back

1 Complete the following table in your notebook:

Disorder	Dietary cause	One prevention option
	Too much glucose in blood	
Obesity		
		Increase red meat consumption
	Lack of calcium	
		Cut down on saturated fats
Colon cancer		

For you to do

2 Reply to these readers' questions from in a magazine.

a I've been told I have hypertension and I need to watch my diet. I love salted snack foods but can you suggest some alternatives?

b My family all have a sweet tooth but my husband has Type 2 diabetes. What suggestions do you have for desserts?

c Can you suggest some interesting lunches for my teenage grandson, who has coeliac disease?

Taking it further

3 You have been commissioned by the government to produce material to inform the public about common diet-related disorders in Australia. Research one diet-related disorder and include in your material:

- the symptoms of the disease
- the causes of the disease
- how the disease can be prevented and or controlled
- support groups and agencies that deal with disease
- a recipe that can be used to help prevent or control the disease.

Anorexia

There is societal pressure for people to be slim. For some people, dieting can get out of control and lead to eating disorders.

Anorexia

Anorexia nervosa is a psychological disorder whereby people become very underweight due to deliberately limiting their intake of food. It is more common in teenage girls, but does occur in teenage boys and adults.

The condition places strain on body organs, which can lead to life-threatening conditions such as kidney failure, dehydration and seizures. Many girls also stop menstruating and experience an increase in body hair, as their hormone levels are affected.

Behaviours associated with anorexia include:

- excessive exercising
- obsession with food and kilojoules
- excuses for not eating
- a belief they are 'too fat' even when thin
- frequent weighing
- use of laxatives and diet pills
- irritability or mood swings
- wearing baggy clothes to hide weight loss.

Why some people become anorexic is difficult to say. It may result from a stressful situation, from losing control after some initial weight loss or from a low self-esteem. People with anorexia are often perfectionists. Therefore, treatment for anorexia involves counselling and family support, and hospitalisation is commonly required.

2.5.1 Anorexia is a form of malnutrition.

FOOD IN FOCUS

New body image code for media outlets

A NATIONAL 'body image' code will require media outlets to portray women of all shapes and sizes. And magazines would have to tell readers if photos of women have been digitally altered to make them fit a particular physical type.

Glamorising extremely underweight models and celebrities would also be opposed under the Federal Government code.

Yesterday Youth Minister Kate Ellis announced the conduct protocols to help fight what she called 'the devastating effects of eating disorders and body image issues'.

The code would also put a 16-year age limit on models used in adult fashion shows, magazine shoots and TV programs.

It would be voluntary, but most media groups were expected to sign on after deliberations of a national advisory group of industry representatives and health advisers finished next year.

'The advisory group will consider matters such as the disclosure of altered and enhanced images, the representation of a diversity of body shapes, fair placement or diet, exercise and cosmetic surgery advertising,' Ms Ellis said.

It would also be aimed at 'avoiding the glamorisation of severely underweight models or celebrities'.

Ms Ellis criticised her older male parliamentary colleagues for not giving Australia's body image issue the attention it deserved.

'As a rule, Parliaments reflect the upbringing and world outlook of its members,' she said. 'With the make-up of our Parliaments, should we then be surprised that issues important to youth have been under-represented?'

Ms Ellis said issues such as equal pay, childcare and work-and-family balance once were considered extreme issues but are now mainstream.

She said that in the same way body image problems had been a 'silent epidemic' which had to be acknowledged. Young women lost self-esteem and confidence, felt ashamed of their bodies and some descended into dangerous eating disorders.

'The consequences of poor body image affect real people in powerful ways, leaving families, mates, schools and our community to feel the pain and pick up the pieces,' Ms Ellis said.

continued...

Yesterday a parliamentary committee considered another aspect of care for young Australian bodies—advertising of junk food.

At issue is a bid by the Greens to legislate to limit advertising for fastfoods on TV, while the industry wants self-regulation.

The Australian Beverages Council told the committee in Canberra 'there is no proof there is a cause and effect' between ads and obesity in the young.

The food industry wants to introduce a voluntary code banning commercials for unhealthy snacks which are directed at children aged under 12 during children's programs.

However, the Australian Psychological Society said children under eight couldn't distinguish between advertisements and programs.

Source: Malcolm Farr, *Daily Telegraph*, 20 November 2008

Activities

1 Summarise the main points of the new code.

2 Do you think the code will achieve its aims? Explain your answer.

FOOD IN FOCUS

Men's eating disorders hit record levels

Caroline Marcus

AUSTRALIA has one of the highest rates of anorexia in boys in the world with research showing that one in four children battling the illness is male.

Almost one in three male Year 9 students used fasting, skipping meals, diet pills, vomiting after meals, laxatives and smoking cigarettes to keep off weight, figures released by eating disorders organisation the Butterfly Foundation found.

Among adults, one in 10 diagnoses of anorexia is for men, while binge eating disorders have risen among males by up to 5 per cent in the past decade.

The foundation's chief executive Christine Morgan said boys were becoming increasingly focused on what they looked like because of a greater emphasis on male body image. Trends in the fashion industry, which increasingly demand male models look emaciated, were also to blame, she said. Many boys also formed unhealthy attitudes towards food and exercise after being bullied, often about being overweight.

Anorexia in males is similar to that in females, in that highly restricted eating and excessive exercise are the two main components of the disease but, in boys, there is more of an emphasis on the latter, Ms Morgan said.

Research by *Girlfriend* magazine found that almost half (46 per cent) of teenage girls reported that they would feel better about themselves if they lost weight. Of 653 girls aged between 10 and 18 surveyed this month, 39 per cent said they were 'unsatisfied or not at all satisfied' with their bodies.

Source: Adapted from *Sydney Morning Herald*, 22 March 2009

Activities

1 How do people with anorexia lose weight?

2 Can you determine why boys and girls may want to lose weight?

3 Research the role of the Butterfly Foundation.

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UNIT REVIEW

Looking back

1 What is anorexia?

2 Identify four common behaviours associated with anorexia.

For you to do

3 What psychological attributes do you think are needed to be a successful model in today's society?

4 A magazine article has the heading 'Your dieting is making you fat'. Explain why this may be so.

5 Reply to the following questions on an internet forum.

I think my sister is out of control with her dieting. She is now too skinny. Do you think I am just jealous or could she have a problem? If she does have a problem, what can I do?

Taking it further

6 Watch a movie or documentary on anorexia and assess the causes and dangers of the disease.

Food consumption in Australia

2.6

Changes in consumption patterns

What we eat, when we eat, where we eat and with whom we eat have all changed greatly over the last few decades. Changes in the patterns of our food consumption have occurred because of:

- the influences of different cultures. For instance, Asian cuisine commonly uses rice, poultry, seafood and pork. European and American cultures also drink more coffee. We are eating not only more of these foods but also more varieties of these foods.
- health concerns. We now eat less red meat, eggs, white sugar and butter because of concerns about disorders such as heart disease and diabetes. Meals have become lighter, with more emphasis on salads, chicken, seafood, pasta, stir-fries and vegetarian dishes.
- changes in family structures and roles. Families are smaller and commonly both parents work. This has meant more eating of convenience foods, eating out more and more snacking as families spend less time together eating as a family. Many convenience, takeaway and snack foods are high in sugar, salt and fat and low in fibre.
- technology, which has increased the range of packaged foods available. Today there are many more forms of chilled, frozen, dried, canned and long-life products available for consumers to purchase. Technology has also made it easier to obtain and store food; for example, you can order a pizza by phone and then have it delivered.

2.6.1 Food consumption trends

Fallen	Risen
Bread	Packaged breakfast foods
Oats	Rice
Sugar for home cookery	Sugar in manufactured products such as confectionery
Beef	Chicken
Lamb	Pork and bacon
Eggs	Seafood
Milk	Soft drink
Cheese	Coffee
Butter	Wine
Beer	Oil
Tea	Margarine
	Fruit
	Vegetables

2.6.2 Spaghetti bolognese is believed to be the most frequently cooked meal in Australian homes.

Half the world's population live on a staple diet of rice. Australia's rice consumption has increased because of its multicultural society.

Impact on health

There has been an increase in the incidence of diet-related disorders because Australians now consume:

- too much energy (kilojoules) as fat, alcohol and sugar
- too much salt
- not enough complex carbohydrates and fibre
- not enough of some vitamins and minerals, for example calcium and iron.

Heart disease and diabetes are in the top ten causes of death of Australians. Obesity and hypertension are contributing factors to heart disease while childhood obesity has become a major concern for health authorities in Australia.

2.6.3 Examine a supermarket trolley or people dining out and observe their food selections.

RECIPE

GARLIC PIZZA
p. 302

2.6.4 What would influence these people to eat this meal? What is the effect of this meal on their health?

Temperature can affect your appetite—you're more likely to be hungry if you're cold!

RECIPE

WARM CHOCOLATE PUDDINGS
p. 303

Influences on food selection and subsequent effects on health

2.6.5 Food selection and health

Influences	Effects on health
Physiological—what food does to the body	Adults encourage children to drink milk for strong bones, but often forget the importance of milk in preventing osteoporosis themselves. Some foods are avoided because of allergies that affect the body.
Psychological—beliefs about food	Eating chocolate makes you feel good, but can lead to obesity if excessive.
Geographical—location and climate	Urban areas often have an abundance of food available that is high in fat, sugar and salt. In summer you eat more salads to cool you.
Social—friends, family, cultural or other	Eating in a group is fun, but often party and snack foods are high in salt, sugar and fat.
Technological—technology and media	Processed foods are everywhere, but many processed foods are high in salt, sugar and fat.
Economic—money and time	Poor people may be missing out on some important nutrients because of limited income. When we have extra money or lack time we tend to treat ourselves to foods that are often high in sugar, salt and fat.

UNIT REVIEW

Looking back

1. List four foods that have decreased in consumption.
2. List four foods that have increased in consumption.
3. What nutrients do Australians consume to excess?
4. What nutrients do Australians not consume enough of?
5. List the six influences on food selection.

For you to do

6. Australian have increased their consumption of seafood, coffee, sugar (in processed foods) and oil in the last few decades.
   - Make a list of the different forms of seafood that you can purchase and give an example of a recipe or dish they can be used for.
   - Make a list of different types of coffee you prepare or purchase in a café.
7. Plan a school lunch for a 10-year-old. What has influenced your selection of food?
8. Plan a low-cost dinner for a student who has just moved out of home to attend university. What has influenced your selection of food?

Taking it further

9. Australia's oat producers want to increase their sales of oats. They want to place a recipe that appeals to teenagers in teenage magazines.
   - In small groups, research some recipes using oats and then produce a recipe you feel teenagers would like.
   - Evaluate the recipe, asking the opinions of your peers.
10. 'Eating the crust of the bread makes your hair curly.' Make a list of other beliefs people have about food.

National guidelines for healthy eating

2.7

The National Health and Medical Research Council developed the dietary guidelines for Australians to help them make wise food choices. As children and adolescents have special needs, guidelines were developed specifically for them.

2.7.1 The dietary guidelines

Dietary Guidelines for Adults in Australia (2003)

Enjoy a wide variety of nutritious foods:

- Eat plenty of vegetables, legumes and fruits.
- Eat plenty of cereals (including breads, rice, pasta and noodles), preferably wholegrain.
- Include lean meat, fish, poultry and/or alternatives.
- Include milks, yoghurts, cheeses and/or alternatives. Reduced-fat varieties should be chosen where possible.
- Drink plenty of water.

And take care to:

- Limit saturated fat and moderate total fat intake.
- Choose foods low in salt. Limit your alcohol intake if you choose to drink.
- Consume only moderate amounts of sugars and foods containing added sugars.

Prevent weight gain: be physically active and eat according to your energy needs.
Care for your food: prepare and store it safely.
Encourage and support breast-feeding.

Dietary Guidelines for Children and Adolescents in Australia (2003)

Encourage and support breast-feeding.
Children and adolescents need sufficient nutritious foods to grow and develop normally:

- Growth should be checked regularly for young children.
- Physical activity is important for all children and adolescents.
- **Enjoy a wide variety of nutritious foods.**

Children and adolescents should be encouraged to:

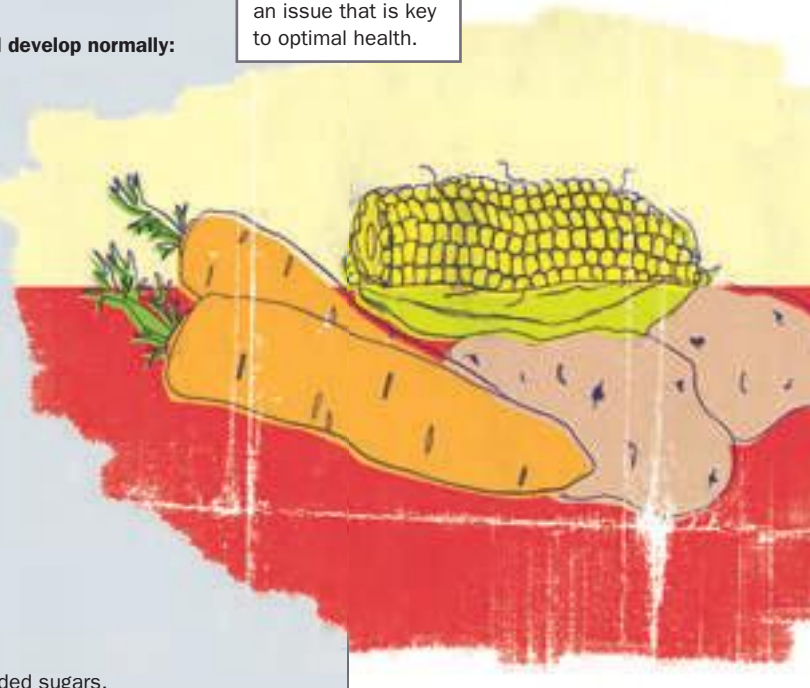
- Eat plenty of vegetables, legumes and fruits.
- Eat plenty of cereals (including breads, rice, pasta and noodles), preferably wholegrain.
- Include lean meat, fish, poultry and/or alternatives.
- Include milks, yoghurts, cheese and/or alternatives.
- Reduced-fat milks are not suitable for young children under 2 years, because of their high-energy needs, but reduced-fat varieties should be encouraged for older children and adolescents.
- Choose water as a drink.

Alcohol is not recommended for children.

And care should be taken to:

- Limit saturated fat and moderate total fat intake.
- Low-fat diets are not suitable for infants.
- Choose foods low in salt.
- Consume only moderate amounts of sugars and foods containing added sugars.

These guidelines are not in order of importance. Each one deals with an issue that is key to optimal health.



Source: National Health and Medical Research Council

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Many breakfast cereals claim to have Vitamin B1, B2, B3 and iron. These vitamins were in the grains originally but processing destroys them. Food laws require that these nutrients be replaced in the cereal.

In UK, the 'traffic light' food labelling system is used to indicate how much fat, salt and sugar a food contains. Green is a good, everyday food, orange is for moderate onsumption and red for occasional consumption.

Nutrition labelling

Food packages are designed to attract consumer attention but under Australian and New Zealand food standards there are strict rules that govern how nutritional information about a food is labelled.

Health claims

Only certain claims are permitted to be used on food labels. It is still important, however, to check the nutritional information panel, as a label may claim that the product is low in fat, but it may be high in sugar.

2.7.2 Health claim meanings

Health claim	Meaning
Light	Low in fat, salt, sugar kilojoules or cholesterol or light in taste or colour
Reduced fat/salt	25% less fat or salt than the original product
% fat free	For example 97% fat free means the food is 3% fat
Fat free	No more than 0.15 g fat per 100 g
Low fat	< 3 g fat per 100 g
Low sugar	< 5 g sugars per 100 g
Low salt	< 120 mg of sodium per 100 g
Low cholesterol	< 20 mg cholesterol per 100 g
No added salt or sugar	No added sugar or salt of any type but may contain natural sugar or salt in the food
Diet	liquid < 80 kJ/100 mL solid < 170 kJ/100 g
High fibre or fibre added	≥ 3 g of dietary fibre per serve
Source of fibre	≥ 1.5 g of dietary fibre per serve

2.7.3 This symbol indicates that the product is a healthy low-GI food and meet criteria for energy, saturated fat, dietary fibre and sodium (salt).

Legal requirements

By law, all manufactured packaged foods must carry a nutrition information panel.

The nutrition panel states the amount of energy, protein, fat, sodium and carbohydrate in a food. Saturated fats are included on the nutrition panels because of their link to diet-related disorders such as heart disease, obesity and diabetes. Other nutrients, such as fibre, calcium and iron, must be included on the panel if there is a claim about the nutrient on the label.

The quantity of each nutrient is listed under two columns in the panel—per serve and per 100 grams. When comparing two 'like' foods it's best to use the 'per 100 g' column because the size of one serve may differ between manufacturers.

2.7.4 Nutrition information panel

Labelling symbols

The glycaemic index

The glycaemic index (GI) is a ranking from 0 to 100 of carbohydrate-containing foods based on how quickly they make blood glucose rise. The lower the GI rating, the more slowly the food is absorbed and metabolised and so blood glucose levels rise less dramatically. Low-GI foods are useful in controlling weight as they delay hunger as well as preventing diabetes and cardiovascular disease. It is difficult to predict a food's GI from its ingredient list or nutrition information. If it is high in added refined sugars (particularly glucose or maltose) or starch, it is more likely that the food or beverage has a higher GI.

Healthy Heart Tick

The Healthy Heart Tick program was developed by the Australian Heart Foundation to help prevent heart disease and stroke. Food products displaying the tick have been approved as being relatively low in saturated fat, kilojoules and salt.

UNIT REVIEW

Looking back

1. Outline three ways in which adult Australians can enjoy a wide variety of foods according to the dietary guidelines.
2. What are three practices that should be encouraged, according to the dietary guidelines for children and adolescents?
3. What do these terms mean on a food label?
   - reduced fat
   - low fat
   - 97% fat free
4. List three nutrients that must appear on a nutrition information panel.
5. What effect do low-GI foods have on the body?
6. What three aspects of a food are indicated by the Heart Foundation tick?

For you to do

7. Examine the information on the nutritional panels of these two foods.
   a. Which of the two is higher in:
      - total fat
      - saturated fat
      - sodium
      - sugars?
   b. What health problems could arise from a diet high in:
      - energy
      - fat
      - sodium?

Taking it further

8. In small teams, examine a variety of different snack foods and assess them such as high-fat foods, low-sugar foods, etc.

Rice cracker

	Per 100 g
Energy	1586 kJ
Protein	7.2 g
Fat—total	3.4 g
–Saturated	0.7 g
Carbohydrate—total	78.7 g
Sugars	1.8 g
Sodium	620 mg

Chocolate-covered biscuit

	Per 100 g
Energy	2150 kJ
Protein	5.5 g
Fat—total	27.5 g
–Saturated	12.3 g
Carbohydrate—total	63.8 g
Sugars	37.3 g
Sodium	160 mg

2.8.1 After six months a baby needs to be weaned to obtain extra nutrients.

Nutritional requirements at different stages of life

As a person progresses through life, the body undergoes a lot of change. Therefore each stage of the life cycle has special nutritional requirements.

Pregnancy and lactation

A balanced diet before and during pregnancy is essential to allow for the development of the baby. In this stage there is a need for:

- protein for the growth of new tissue
- calcium for the baby's bones and teeth
- iron and Vitamins C and B for the increased blood supply
- folate to reduce the risk of the child having a **neural tube defect**.

neural tube defect: condition that occurs when the central nervous system of the foetus is not correctly developed; commonly referred to as spina bifida

While a weight gain of 10–13 kilograms occurs during pregnancy, it is important to choose foods that are dense with nutrients rather than just kilojoules. This will help prevent excessive weight gain that may be difficult to lose after pregnancy

After birth, many mothers breast-feed. The nutritional requirements of a breast-feeding (lactating) woman are similar to those of a pregnant woman.

2.8.2 Alcohol and smoking should be avoided during pregnancy, as they can affect the baby's development.

Infancy (0–12 months)

In this period babies grow and develop rapidly. Breast milk (or infant formula) contains all the nutrients required by the baby in the first 4–6 months, as it is high in calcium and protein needed for growth. Breast milk is preferred to formula as it contains valuable antibodies to protect against disease and is also easily digested.

After this period, milk is still important, but the baby must also be given foods that contain more iron and Vitamin C than are available from milk. In addition, more energy foods are required as the baby becomes more active. Iron-enriched rice baby cereal is usually the first food introduced to babies, followed by puréed fruit and vegetables and later puréed meat mixtures.

Childhood (1–12 years)

During this period children grow steadily and they become more active. Therefore children require:

- energy-giving foods and foods containing Vitamin B to help release the energy
- protein for growth
- calcium and phosphorus for the strengthening of bones and teeth
- water to prevent dehydration.

It is important that children learn to appreciate a variety of foods during this stage, as this is when many food likes and dislikes are established. It is also best to avoid foods rich in fat and sugars, which could contribute to tooth decay and childhood obesity. Low-fat milks should also be avoided for children under 2 years of age because low-fat milks lack the essential fatty acids for required for the growth and development of the child.

Adolescence (12–18 years)

Teenagers are very active and more independent, but also very self-conscious. Sometimes poor food habits such as dieting and skipping meals are established during this period.

Generally, adolescents require:

- energy-giving foods
- protein for growth
- calcium for strong bones
- more iron, particularly girls, because of menstruation.

Adulthood (20–55 years)

As the body has stopped growing by this stage, the requirements for some nutrients

decrease in adults. A reduction in kilojoule intake is also commonly required, as adults tend to be less active because of family and work commitments. A well-balanced diet is essential during this stage to avoid the onset of diet-related disorders such as obesity and heart disease.

Older age (55 years plus)

As adults get older, they tend to move more slowly and become less active, particularly after retirement. They also tend to lose their appetite. It is also at this stage that the effects of years of poor food habits can become evident through nutritional disorders.

It is recommended that older people continue to be active and choose foods that are:

- nutrient-dense rather than energy-dense
- high in fibre, to encourage bowel health
- high in calcium, to prevent osteoporosis.

2.8.3 It is important that adults find the time to exercise and eat well to avoid health problems later in life.

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Hands on

Quick strawberry jam

Purpose

To make jam using modern technology.

Materials

500 g strawberries, washed, hulled, chopped

1½ cups white sugar

⅓ cup lemon juice

chilled saucer, wooden spoon, 2 sterile glass jars, small label, scrap of woven cotton fabric, string

Steps

1. Place strawberries into microwave-safe bowl. Add sugar and lemon juice. Microwave, uncovered, for 4 minutes on HIGH power. Stir.
2. Microwave for a further 15 minutes on HIGH power. Stir every few minutes until jam reaches setting point. This can be checked by placing 1 teaspoon of jam onto the chilled saucer and allowing it to cool to room temperature. The surface will then start to wrinkle when touched.
3. Spoon hot jam into hot sterilised jars. Seal. Turn jars upside down for 2 minutes. Turn right side up. Cool.
4. Label your jam with the type of jam and date made.
5. Decorate the lid with some fabric and string.
6. Once opened, store in the fridge.

UNIT REVIEW

Looking back

1. List the different stages of the life cycle.
2. Why is an adequate intake of folate important during pregnancy?
3. Why is breast milk preferred for infants?
4. What are the extra nutritional requirements of adolescents?

For you to do

5. The Tran family consists of Vanessa, aged 3, Cameron, aged 15, Dianna, aged 38, David, aged 42, and Nan, aged 72. Determine which member or members have the greatest need for:
   - iron
   - energy
   - calcium
   - protein.

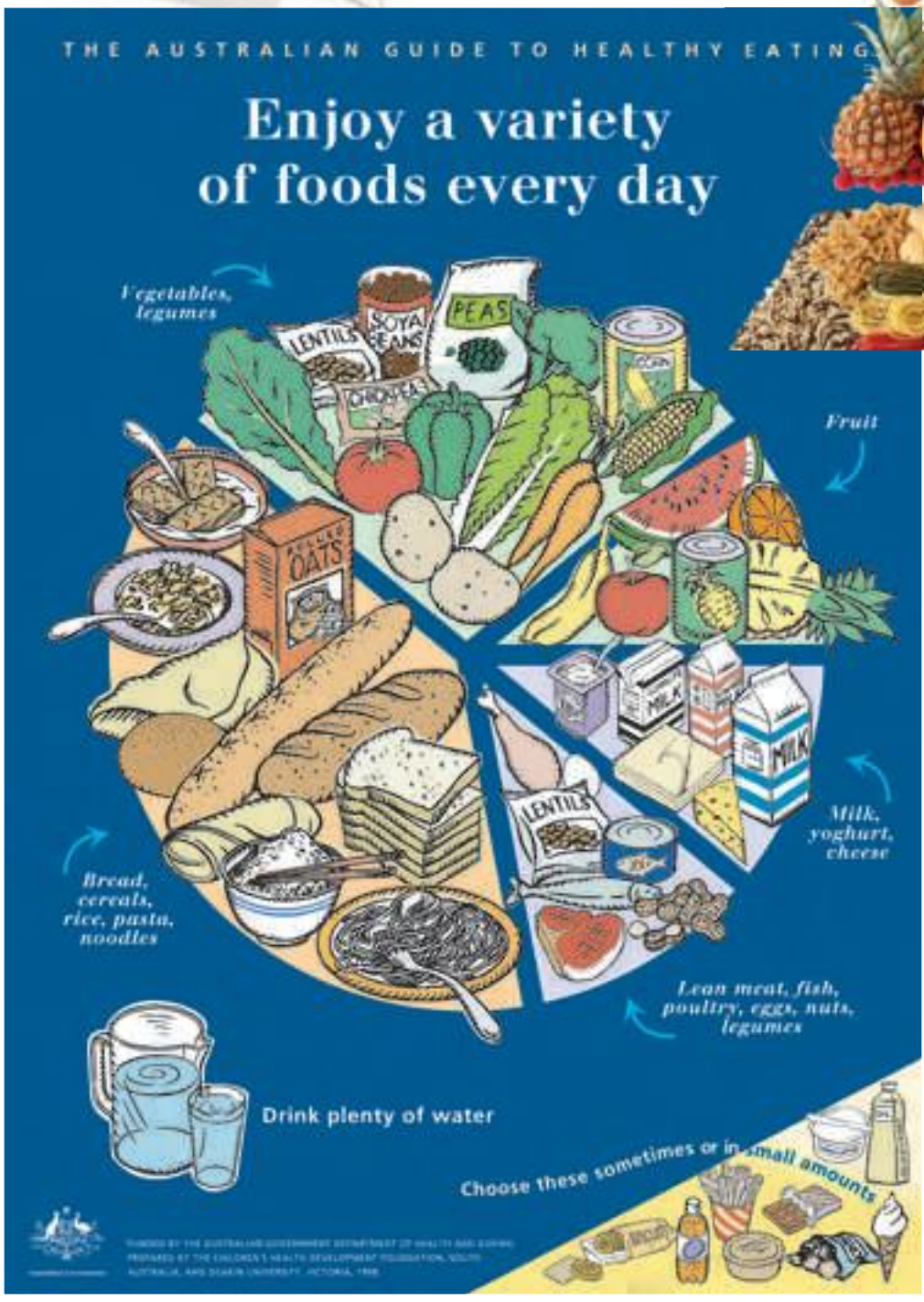
Taking it further

6. Organise a visit to the local preschool and or retirement village. Treat the students or elderly people to some special but healthy and safe foods. Be sure to discuss their requirements with the director of the centre.
7. Select a stage in the life cycle. Produce a leaflet explaining the nutritional needs and tips for healthy eating.

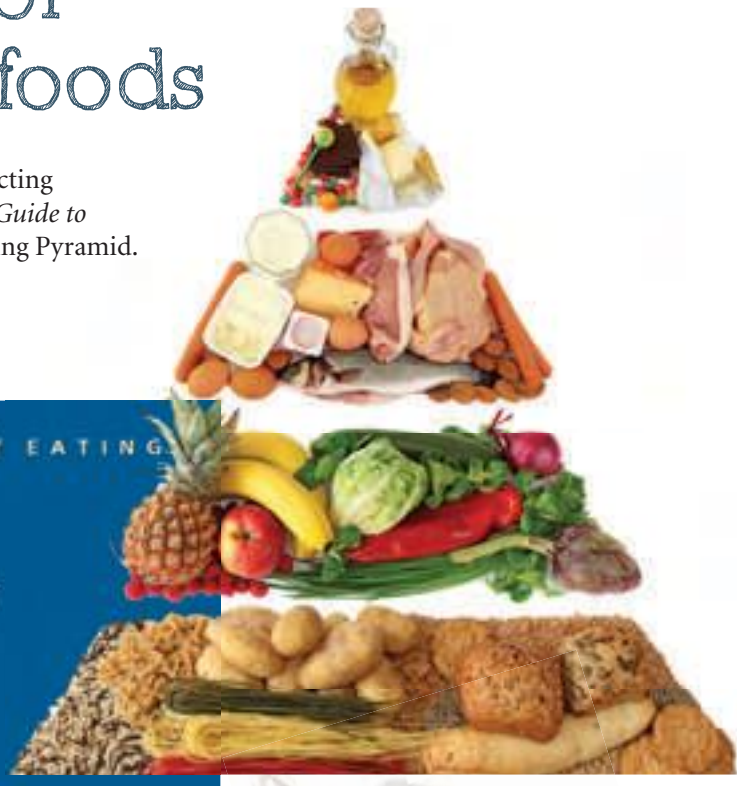
2.9 Selection of nutritious foods

Two tools that can assist you in selecting nutritious foods are the *Australian Guide to Healthy Eating* and the Healthy Eating Pyramid.

2.9.1 Australian Guide to Healthy Eating



2.9.2 Healthy Eating Pyramid



Web Destination

Practitioner focus

Emma Bajgerytsch—
Health promotion officer

Health promotion officers work with various groups to improve the health of individuals and the community through preventative action. Health promotion covers issues such as physical activity, nutrition, injury prevention, mental health, sexual health, cancer prevention, men's and women's health and tobacco control.

Health promotion officers are predominantly employed in the healthcare system and work from Public Health Units. Health promotion officers may also be employed in local government, community health services and non-government agencies such as the Cancer Council and the Heart Foundation.

Health promotion officers may perform the following tasks:

- planning and coordinating health promotion programs for community groups
- informing other health professionals about, and involving them in, community health issues
- designing and developing public information campaigns using radio, television, newspapers, pamphlets, posters and websites
- designing school curriculum material.

Health promotion officers usually have to study health promotion at university, but they can come from other related fields such as nursing and psychology. TAFE institutes run courses in population health. A health promotion officer needs to communicate with and relate well to a diverse group of people. Volunteer work is also useful when considering this career path.

After graduating Emma got a job with the Department of Health in Geraldton as a health promotion officer. She was responsible for the area of tobacco control, her main tasks being to conduct smoking cessation workshops for the general community, as well as school nurses, develop media materials and develop a smoke-free policy for the local hospital.

At the Heart Foundation Emma's role is to work in the Smarter than Smoking Project as well as physical activity programs. Her main tasks are:

- looking after school-related strategies
- working with key agencies to rewrite and update classroom resources
- promoting Smart School Grants and supporting successful applicants
- promoting and distributing school resources
- coordinating activities for National Youth Tobacco Free Day
- developing and maintaining the project website
- ordering and distributing merchandise.

Source: Adapted from information on Job Guide website

Activities

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1 What is the role of a health promotion officer?

2 What issues does health promotion cover?

3 What tasks may be performed by a health promotion officer?

4 a Using the website link, investigate a job seekers website and find a current job opportunity as HPO

b Identify the attributes required for the job and the responsibilities of the HPO in this position.

UNIT REVIEW

Looking back

1. Which beverage is encouraged on the Australian Guide to Healthy Eating?
2. Name four foods that you can have occasionally, according to the Australian Guide to Healthy Eating.
3. To which section of the Healthy Eating Pyramid do these foods belong?
   - potatoes
   - sour cream
   - tuna
   - noodles
   - baked beans
   - chicken salt

For you to do

4. Research indicates that adults do not drink enough water a day, preferring to have soft drinks, coffee and alcohol as beverages. Develop strategies for increasing the amount of water that adults drink per day.
5. As a class, draw the Australian Guide to Health Eating on the playground with some chalk. Each student draws a food that belongs to a particular segment of the guide.

Taking it further

6. Evidence suggests that teenagers want healthier food choices.
   - **a** Design and prepare a bread-based lunch option for teenagers that could be sold at a canteen. Think about using one of the many varieties of breads available today.
   - **b** Explain how you have used the Healthy Eating Guide or the Healthy Eating Pyramid in selecting your lunch menu.

Chapter review

Looking back

Select the correct answer in the following questions.

1 What are proteins made from?
- a fatty acids
- b amino acids
- c sodium
- d glucose

2 Which vitamin is mostly found in citrus fruits such as oranges?
- a Vitamin C
- b Vitamin D
- c Vitamin A
- d folate

3 Which is not a function of fibre?
- a aid digestion
- b make you feel full
- c help reduce cholesterol
- d give you energy

4 Which food is a person with coeliac disease unable to eat?
- a peanuts
- b milk
- c wheat
- d seafood

5 Excess consumption of which food is most likely to contribute to dental caries?
- a fats
- b sugar
- c salt
- d alcohol

For you to do

6 Of the following vitamins, which are water soluble: Vitamin A, Vitamin B complex, Vitamin C, Vitamin D, folate, Vitamin K, Vitamin E?

7 Which of the following are classed as disorders of overnutrition?
- Type 2 diabetes
- coeliac disease
- anaemia
- osteoporosis
- coronary heart disease
- hypertension
- colon cancer

Taking it further

8 Debate the following topic: 'Carbs are bad for you.'

9 Conduct the following experiment.
- Soak one-quarter of a cup of wheat bran in half a cup of water. Wait half an hour.
- Record the results.
- Explain how the results demonstrate the benefits of fibre in the diet.

10 Assess the nutritional value of two snack foods, one sweet and one savoury, enjoyed by teenagers. Use the nutrition information panels on their packaging to compare and contrast the nutritional value of the snack foods in relation to the needs of teenagers.

11 Interview a person who has lived in Australia for over fifty years on how they believe food in Australia has changed in the last fifty or more years. Prepare a list of questions before the interview, such as what did you eat for breakfast when you were a child? What did you take to school? How often did you eat out? What foods did you have when you went out?

Write up the results of your interview in a report.

Chapter 3

Bush tucker to contemporary cuisine

Focus area: Food in Australia

Defining Australian cuisine is not easy. Is it meat and three vegetables, or bush tucker such as kangaroo and macadamia nuts, or foods from other cuisines with a local spin? This chapter looks at the effects of migration on food eaten in Australia. The history of food in Australia will be examined, including the traditional bush foods prepared by Indigenous Australians and the influence of early European settlers.

Chapter outcomes

In this chapter you will learn about:

- the use of foods native to Australia
- early European influences on food habits
- multicultural influences on food habits and methods of cooking
- the evolution of an Australian cuisine
- influences on food selection
- factors affecting current consumption patterns
- development of food production and processing from both historical and contemporary perspectives.

In this chapter you will learn to:

- investigate traditional and contemporary use of native/bush foods
- discuss the impact of early European influences on food habits
- identify the major multicultural influences on contemporary Australian diets
- discuss the defining characteristics of Australian food and prepare food that reflects the changing nature of Australian cuisine
- examine the influences on food selection and changes in eating habits
- relate changes in consumption patterns to their social, economic, nutritional and environmental impact
- investigate the development of the Australian food industry in consideration of food-related technologies that have emerged over time.

Use of foods native to Australia

3.1

Some bush foods grow wild in the backyards of city homes, often unrecognised by the inhabitants. Other bush foods hide in remote parts of the desert and are very difficult to find. Australian **indigenous foods** are commonly known as '**bush tucker**'. Bush tucker comprises a wide variety of herbs, spices, mushrooms, fruits, flowers, vegetables, animals, birds, reptiles and insects that are native to Australia.

indigenous food (bush tucker): food native to Australia that was present before European colonisation

Indigenous Australians have been eating bush tucker for at least 50 000 years. In colonial times the European settlers who learned about local foods from Aborigines survived much better than others who did not. To many non-Aboriginal people, bush plants are still a mystery; the grubs look unappetising and Aboriginal cooking methods are not properly understood. However, many non-Indigenous Australians are developing an interest in foods unique to their environment. There is also a growing interest from world-class chefs seeking 'new' tastes and innovative food combinations.

In some restaurants there is a chance that you will find examples of bush tucker on the menu. For example, wild Australian fruits make excellent jams, sauces and desserts. Nuts are used in pies, breads and sweets. New flavours from the bush are making their way into ice-creams, beverages and spices.

3.1.1 Traditional Aboriginal foods (bush tucker), when available, provide the range of nutrients necessary for growth and survival.

Practitioner focus

Paul Bruneteau—chef

3.1.2 Paul Bruneteau

Paul Bruneteau is a French-born Australian chef with a passion for Australian native foods. He is credited with playing a pioneering role in the development of an authentic Australian cuisine based on indigenous ingredients, and now features the unique flavours of bush foods in his cooking, often developing new methods of working with these unique ingredients.

After an apprenticeship in Europe he became the youngest ever to run a galley on an Australian merchant ship. He then worked in the kitchens of the Sydney Opera House, before opening Rowntrees, The Australian Restaurant, in Hornsby, Sydney. It was the first 'Australian' restaurant listed in the Yellow Pages. Bruneteau experimented with various native ingredients supplied by small-scale regional suppliers and wholesalers of bush foods. This included products such as riberry, Dorrigo pepper, lemon myrtle, wattleseed and Illawarra plum.

In 1988, Bruneteau won a gold medal for 'The Most Original Cuisine', when he created his signature dish, the now world-famous Rolled Wattleseed Pavlova. In 1989, when visiting Australia, French master chef Paul Bocuse paid tribute to Bruneteau's role in developing an Australian cuisine. In 1991, his Riberries—Taste Australia restaurant was opened in Darlinghurst, Sydney. In 1996, Bruneteau published many of his ideas and culinary experiences with bush foods in a popular and award-winning book titled, *Tukka—Real Australian Food* to share his passion with a wider audience.

I became passionate about Australian native foods by ... discovering how beautiful the flavours were. I found it impossible to understand why modern-day Australians could pass up such ingredients in the quest to create a genuine Australian cuisine. By unlocking all the secrets these wonderful indigenous foods offered, I also gained a better understanding of Aboriginal Australia.

The food I prepare is different from that of other chefs because ... when I started to experiment with a lot of native foods, I soon learned that they were not 'European vegetables'. Their cooking and handling were very different. This is why I became so passionate with their preparation, to make them more acceptable.

Some of the flavours were so strong; I also understood straight away that people would mishandle a lot of these plants unless I set out to explain how to best handle their wonderful flavours. That's why I felt I needed to write my book, Tukka—Real Australian Food.

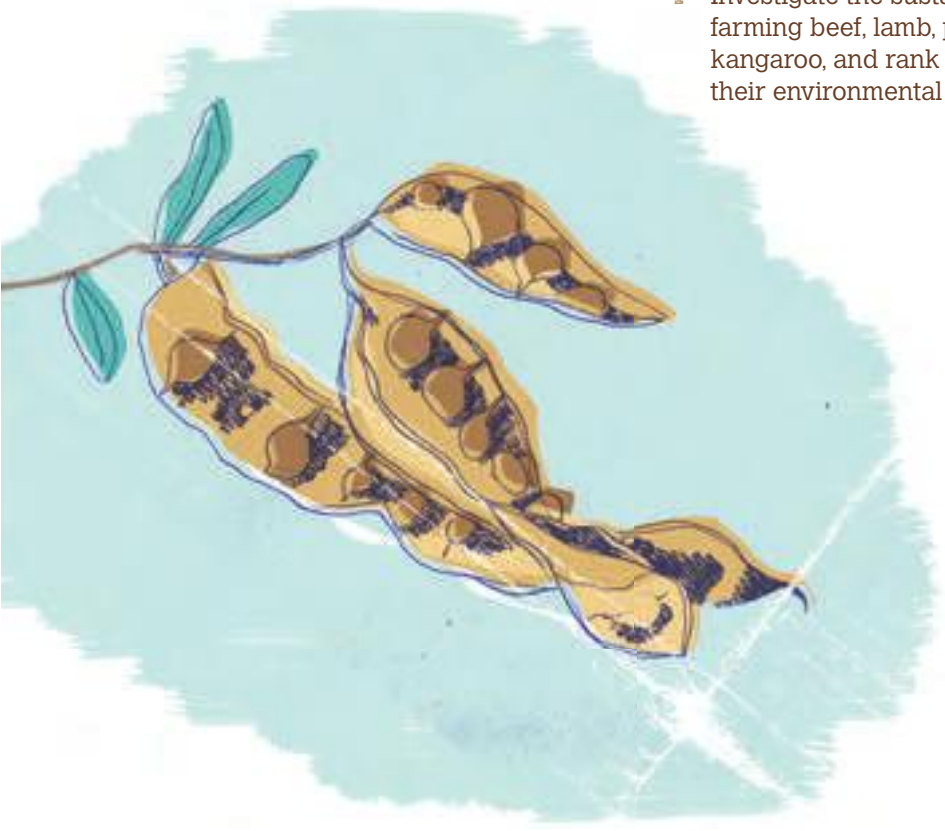
The most satisfying thing about working with Australian native foods is ... to have the ability to create whole menus around them and be able to match them with other ingredients like cheese for example.

My biggest frustration in working with Australian native foods is ... chefs who have mishandled their culinary use, and as a result, put off quite a few Australians and others who, had they been properly instructed, would have fallen in love like I did. Our native foods are quite strong in flavour so they shouldn't be overloaded.

Misunderstanding and misconception of kangaroo and emu is also an on-going frustration of mine. The carbon and water intensive process involved in livestock farming makes our choice of meat a real environmental issue. Kangaroo and emu meat have about a third of the carbon footprint of beef and have been the red meats of choice among Australian consumers for over 80 000 years—only in the past 100 years did it experience a downturn in popularity.

The most important thing about the sustainable food movement is ... to educate Australians on the importance of eating healthy, fresh foods. These foods are very sustainable, we can't ignore what is happening with climate change and the carbon involved in producing foods. It's time to look at the foods we eat and think of alternatives which will reduce our carbon footprint.

Source: http://slowfoodsydney.com.au/2009/10/pp-jean-paul-bruneteau/



Activities

1. Research one piece of legislation that Paul Bruneteau, as a chef, would need to be familiar with. Explain why.
2. Paul Bruneteau is passionate about Australian native foods. What evidence of passion can be seen in this profile?
3. Research the availability of indigenous foods in your local area. Make a list and discuss your findings with the rest of the class.
4. Research one European vegetable and one indigenous vegetable. Compare and contrast each. Why do you think they might need to be prepared differently?
5. Look up the meaning of the word 'sustainability'. Do you think that indigenous foods are more sustainable than other food sources?
6. Compare cuts of beef, lamb, pork and kangaroo. Construct a chart to record their colour, texture, flavour and degree of tenderness.
7. Investigate the sustainability of farming beef, lamb, pork and kangaroo, and rank them according to their environmental impact.

Before 1770, there were more than 300 000 Aboriginal people living in 500–600 tribal groups, each consisting of between 100 and 1000 people. Each tribe had its own territory and language.

PP Web Destination

Traditional use of bush foods

Before European settlement in 1788, Australian Aborigines lived successfully off the land. They travelled great distances in search of the available food supply. When food supplies become limited, an Aboriginal family would move to a new area where the supply was plentiful. These areas were more commonly on the coast, near rivers or where there was high rainfall, as animal and plant food sources were more accessible.

Australian Aborigines were very successful at providing for their needs through hunting and gathering activities. The men were the hunters and went out each day to hunt, but often returned with very little. What they did bring back—larger animals or fish—was then shared among their tribe. It was the women and children who supplied the more substantial part of the food requirements. They gathered and prepared plant foods, caught small animals and collected delicacies such as witchetty grubs, ants, bogong moths and emu eggs. However, the men's catch was always valued more highly than the food the women gathered because it was much more difficult to come by. Australian Aborigines killed only enough food for their immediate needs.

The diet of Australian Aborigines was rich and nutritionally well balanced. Most diets were high in protein, which supplied up to half of their energy needs. This was due to the consumption of fish and shellfish by those tribes living along the tropical coast or near rivers, and goanna and kangaroo for those living in or near open scrub, mountains or deserts. Diets were also high in fibre and vitamins, which was due to the variety of fresh fruits and vegetables available. There was a small amount of sugar from fruit, nectar and honey gathered from wild bees or extracted from honey ants. The intake of fat was low, as it largely came from game or fish.

3.1.3 An Aboriginal man hunting for food

The influence of geography

The geographical location of the tribe and the particular season of the year primarily governed the choice of diet and the way in which food was prepared and cooked.

Animal foods were generally cooked, either over an open fire or steamed in pits. Kangaroo, for example, was laid on a fire and seared for a short period, so that the interior flesh remained practically raw; at other times the kangaroo was placed in a large hole, surrounded by hot coals and sealed from the air.

Sometimes food was wrapped in paperbark or leaf matter to protect the flesh from the open flame. Flying fox, for example, was wrapped in the leaf of the Alexandra palm for cooking. When it was cooked, the leaves were unwrapped, pulling off the skin and fur at the same time.

Plant foods required more careful preparation since many of them were difficult to digest and even poisonous. Aboriginal women spent many hours washing, grinding, pounding, straining, grating, boiling and cooking plant foods. The water used in these preparations and cooking methods was boiled in bark troughs or in large seashells.

Living off the land worked well for the Aboriginal people because their population and needs were relatively small and they moved around seasonally in search of food supplies. This prevented the overuse of any specific food source.

FOOD IN FOCUS

Learning to hunt and gather

Much learning and experience is required to become an expert hunter and gatherer. Children generally started the learning process at an early age.

Traditionally, it was customary for children to go out with adults on hunting and gathering trips so that knowledge and skills could be passed from generation to generation. Children also played games in which they acquired hunting and gathering skills, learned how to work with others and practised using the appropriate equipment. Boys played with toy spears, spear throwers and boomerangs; girls played with toy digging sticks and **coolamons**.

In areas where watercraft was important, toy canoes were used. Children also practised tracking, an important skill. Children used their fingers or special wooden objects to make imitation animal tracks on the ground.

Because of the learning experience required, a man might not become an expert hunter until his mid-twenties. However, as hunting was such a physically demanding activity, he might retire from active hunting in his late thirties.

Activities

1. Why do you think male and female children were encouraged to play with different hunting and gathering equipment?
2. Consider the equipment needed to hunt and gather. Outline what each would be used for and provide an example of a bush food that could be collected using this equipment.
3. The expert hunter has a limited career. Think about the expert gatherer. How long do you think female gatherers continued to work for? Explain your answer.
4. Investigate the variety of skills hunters and gatherers needed to learn before they were known as experts.

3.1.4 Equipment used by aboriginal people to hunt and gather food

coolamon: elongated wooden dish used for gathering plant and animal foods

Contemporary use of bush foods

Bush tucker is presently being seen as an important part of our ever-evolving national cuisine. The contemporary bush tucker industry uses native animals and plants in different ways from the ways used by the Australian Aborigines. For example, plants are used primarily for flavour rather than nutrition. Consequently, many animal and plant food sources are now known as gourmet items and are becoming increasingly available in specialty shops and local delicatessens. Consider the gourmet items below that have foods native to Australia as their main ingredient:

- kangaroo meat balls
- bush tomato salsa
- lemon myrtle cheese
- wattleseed pasta
- buffalo steaks smoked over banksia cones
- witchetty and bunya soup
- rosella jam
- lillipilli chutney.

PP Web Destination

In the tropical north, Aboriginal Australians identify six seasons, where non-indigenous Australians usually see only two—the wet and the dry. The seasons are marked by different phases of weather—winds, rains and tides—and the coming and going of animals and plants.

3.1.5 Aboriginal people often cook animal foods over an open fire.

When you dry big bunches of lemon myrtle in the house you bring the scent of the rainforest indoors. Simply hang the fragrant bunches of leaves in a light, airy spot in your kitchen, or in any room that needs a lift. For an instant natural air freshener, just rustle the drying leaves to release the fragrance.

3.1.6 Traditional Aboriginal food sources (animals)

Animal food sources	Place	Season
Crayfish	Fresh rivers, creeks, lagoons	Winter
Emu	Mallee	All year
Fish	Rivers, lakes	All year except breeding time
Frog	Waterways, swamps	Summer
Galah, pigeon, other small birds	Bush, scrub	All year except breeding time
Honey ant	Mulga scrub, land and plains	After rain in dry areas
Kangaroo	Mallee, river plains	All year
Lizard	Sandhills, scrub, bush	Summer
Possum	Scrub, bush	All year
Snake	Sandhills, scrub, bush waterways	Summer
Water rat	Banks of water holes, rivers	Winter
Witchetty grub	Red gums	Spring to summer
Wombat	Burrows in higher ground	Spring to autumn

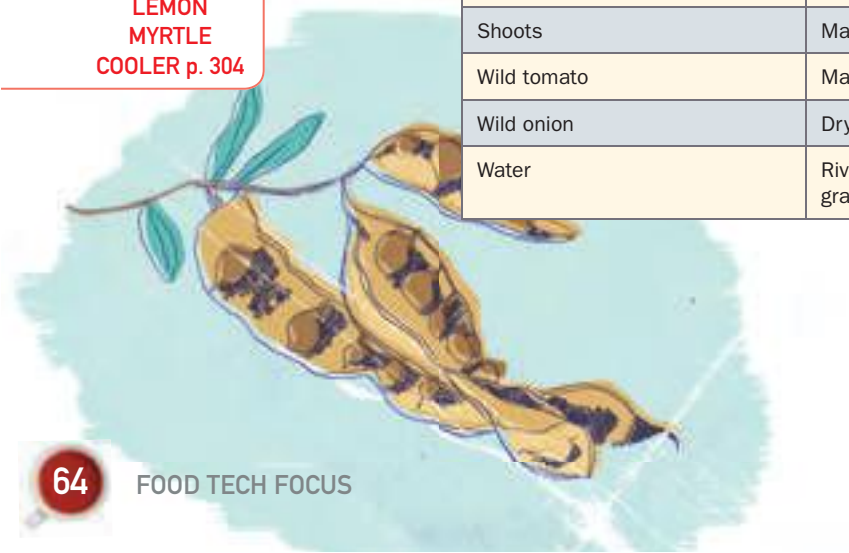
Men and women serving in the Australian army are now trained in how to survive on bush foods in case of combat in Australia.

3.1.7 Traditional Aboriginal food sources (plants)

Plant food sources	Place	Season
Acacia wattle	Scrub	Autumn
Berries	Mallee, bushes	Autumn
Bracken (roots)	Anywhere	Autumn
Bulb and stalk	Billabongs	Spring to autumn
Fungus	Underground	Autumn
Grass seed	Mallee, scrubland	Summer
Honey	Hollow trees	Spring to summer
Nectar	Flowers	All year
Salt	Dry water course	All year
Shoots	Marshes	Summer
Wild tomato	Mallee	Summer
Wild onion	Dry areas	Autumn
Water	Rivers, lakes, tree roots, dew on grass and leaves	All year

RECIPE

LEMON MYRTLE COOLER p. 304



FOOD IN FOCUS

Outback facts: bush tucker

The seemingly stark Australian landscape is like one giant supermarket for those in the know. It has sustained Indigenous communities for thousands of years. Many Aboriginal Australians continue to eat traditional foods, well aware of their health-giving properties.

Bush tucker varies according to particular regions and seasons. Traditionally, Indigenous groups living along Australia's coastline existed on marine animals, roots, fruit, small game and reptiles. Depending on the area, freshwater crustaceans may also have been available. In the Torres Strait Islands, communities also ate dugong, while in the tropical north stingrays were eaten. Some wildflowers, such as grevillea and banksia, were sucked for their sweetness, and the tips of the Western Australian Christmas trees were chewed as gum.

Hunting and gathering was more difficult in the harsh desert climate, where hunters frequently had to travel great distances to find kangaroos or emus. Other game included snakes, small lizards and goannas. In the desert regions, game was thrown on a campfire and cooked whole.

Vegetables were either cooked in coals or eaten raw. If the rivers and creeks had permanent water holes, fish such as mullet and bream were added to the menu.

Communities in the tropical parts of northern Australia enjoy a totally different lifestyle from that of the desert peoples and communities further south. The Kimberley, the Northern Territory and Far North Queensland experience lush growth and tropical downpours. The rivers and lagoons supply yabbies, catfish, barramundi, turtles, crocodiles and wild ducks. Edible water reeds grow in lakes and swamps, while the land offers a plentiful supply of meat, including wild turkey, flying fox and snake.

In the inland non-desert areas of south and south-western Western Australia, there are six distinct climatic changes. Traditionally, inland communities foraged for insects, birds, reptiles and mammals, including kangaroos and possums. They also ate a variety of fruits, flowers, berries and nuts. Various seeds were collected, ground up and mixed with water and either eaten as a paste or baked in coals to make damper.

Source: Adapted from information on the Lonely Planet website

Activities

1. List the types of environments in which Indigenous people lived.
2. Brainstorm the bush foods available in each environment.
3. Design a menu that tells a story of indigenous foods in one environment of Australia.
4. Select one bush food listed above and find a suitable recipe that could be adapted to incorporate this food. Make your adapted recipe and present it in a traditional way. Analyse and evaluate your final product using the following criteria:
   - Appearance: What does it look like?
   - Aroma: What does it smell like?
   - Flavour: What does it taste like?
   - Texture: What does it feel like?

3.1.8 Gourmet bush tucker foods

RECIPE

ROASTED APPLE, MACADAMIA AND WATTLESEED MUFFINS p. 305

UNIT REVIEW

Looking back

1 Define the term 'bush foods'.

2 The traditional diets of Aboriginal people varied across the country. Why was this so?

3 Explain how the traditional food supply of the Aborigines met their nutritional needs. Use the Australian dietary guidelines outlined in Chapter 2 to assist you.

4 Outline what influenced the types of food eaten by different Aboriginal groups.

5 Explain why the men's food supply was valued more highly than the women's.

6 Why did women supply the tribe with more food than men did?

For you to do

7 Using resources in your library undertake the following research tasks.

- **a** Compare the nutritive value of the traditional diet of Australian Aborigines to the diet of Australians today.
- **b** Research the health problems encountered by Aborigines today.
- **c** If you were stranded in the Australian bush, what foods could you eat to survive?
- **d** Write a newspaper article on the main reasons that Australians should include bush tucker in their diet.

Taking it further

8 Select a traditional Aboriginal food from the tables 3.1.6 and 3.1.7 and use your library to investigate:

- where and when you would locate it
- how you would capture or collect it
- how you would prepare it for eating
- an example of a recipe that uses the food.

9 Arrange for a local Aboriginal student or family member to talk to the class about Aboriginal eating patterns and how traditional bush foods are prepared and cooked. As an alternative, you could make contact with your local Aboriginal organisation and invite a representative to come to your class.

10 Use the website link to visit Barbushco and Outback Pride, two companies with a commercial interest in Australian bush foods. Use the information you find, along with additional resources, to complete the following questions:

Web Destination

- **a** Outline the nutritional benefits of using bush foods.
- **b** Investigate the benefits of marketing bush foods.
- **c** As a class, discuss who actually benefits from the marketing of bush foods.
- **d** Explain why companies such as Barbushco and Outback Pride are becoming increasingly successful.
- **e** Predict some of the challenges facing producers of bush foods.

Early European influences

3.2

The ships of the First Fleet, sent from England with convicts to found a penal colony in NSW, landed at Sydney Cove on 26 January 1788. This date is celebrated annually now as Australia Day.

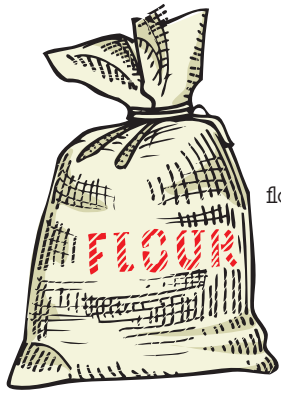
The first settlers came ashore to a country different from England. Their immediate needs were exactly the same as those of the Australian Aborigines—food and shelter—but they went about providing these in a very different manner.

Food brought on or with the First Fleet voyage consisted of flour, rice, salted meat, sugar, salt, alcohol, vinegar, seeds and vine cuttings. Livestock were brought as a source of fresh meat. The food supply was **rationed** and consumed within two years. During this time, the seeds and vine cuttings were used to grow crops that seemed to fail early on, as the new settlers knew little about the Australian land and climate. They expected to be able to live off the land using the same techniques they had used in England.

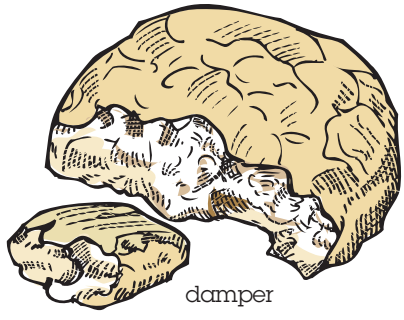
Early settlers succeeded in growing corn, wheat and barley. These crops did not significantly alter the variety of the food eaten.

3.2.1 Early settlement in Australia

ration: fixed allowance of food



flour



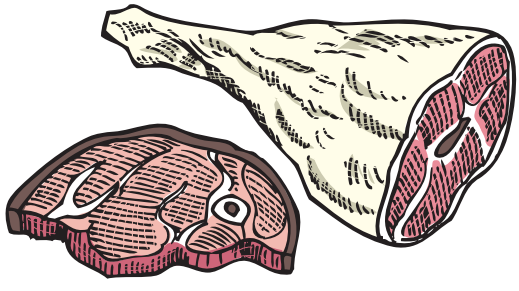
damper

rice

alcohol

dried peas

meat



3.2.2 Weekly ration for sailors and convicts in 1778 on the First Fleet

scurvy: disease caused by a lack of Vitamin C

A pound is approximately equal to 450 grams (the size of a packet of pasta); an ounce is about 30 grams (the size of a small bag of chips); and a pint is about 600 millilitres (the size of a bottle of coke).

Hands on

Ration your food

Purpose

To plan and prepare a meal using the weekly rations provided for early settlers in Australia.

Steps

1. Work in pairs and plan a day's menu using only the ingredients listed on page 67. Try to make the menu as interesting as possible.
2. Prepare one of the meals from the menu.
3. Rate the meal for appearance, flavour and texture.
4. List the problems people would have experienced trying to vary the menu over many weeks and months.
5. Use the five food groups to rate the diet of early settlers in Australia. As a class, discuss your findings

Diet of early Europeans

Women received two-thirds of the rations that men received, and children were eligible for one-third. As you can imagine, people on these rations were often very hungry and the meals were rather uninteresting due to the limited ingredients and quantities.

The meat rations were usually made into stews and pies and the dried peas were boiled to a thick type of porridge. The flour was used to make damper or sometimes added to the cooking of any available green leaves or vegetables. This made a meal very similar to vegetable porridge. These rations were generally served hot and were high in fat, protein and refined carbohydrate, and particularly low in dietary fibre. These rations remained the basic diet for most Australians for the first fifty years of settlement. Eventually this diet was supplemented with fruit and vegetables as the crops began to grow successfully.

Some people were able to catch fish to supplement their restricted diet and a few ate some of the wild plants and fruits, such as wild currants and native spinach. However, for the general population, a regular lack of Vitamin C meant that **scurvy** was a constant problem.

The convicts had little or no knowledge of Australian native foods. Some proved poisonous or had a terrible taste, which did not encourage experimentation. The main beverages were water, tea (which was brewed black and strong), and rum, which was the most common alcoholic drink. Both tea and rum had to be imported to Australia from England.

Traditional damper versus the contemporary Aussie alternative

The word 'damper' was first used in England—meaning to dampen the appetite—and describes hard, unleavened, crusted bread. Damper was very important to the first settlers in Australia when flour, salt and water were the only ingredients for making bread. Originally, the bread was cooked in the ashes of a bush fire for about ten minutes. Then the damper was covered with ashes and cooked for another period of about twenty to thirty minutes until it sounded hollow when it was lightly tapped. Today it is usually cooked in a camp oven (iron pot) that is buried in the hot coals.

Introduction of new foods to Australia

During this time, Aboriginal people started to gravitate towards the settlements and helped with the cleaning, maintenance of crops and day-to-day chores. In return for their services they were paid with rations of food. Over time, they became dependent on the rations for their food supply, and their traditional diet of bush tucker changed to one of white flour, sugar, tea, meat, salt and alcohol. This diet lacked the fresh foods of the bush, sea and rivers and contributed to nutritional disasters such as weight gain, diabetes and alcoholism, which are evident in some Aboriginal communities to this day.

Early Australian **food habits** were linked to those of England. Even today, many of the well-established eating patterns from earlier times have remained dominant in Australians' food habits. Vegetables other than potatoes and peas were not popular. Sugar and sweet foods became popular and the habit of eating large quantities of meat has persisted. This has contributed to our current high intake of protein and fat. The high consumption of alcohol also goes back to the time of the first settlement of the colony; Australians today consume more alcohol than any other English-speaking nation.

RECIPE

TRADITIONAL DAMPER p. 306

BUSH DAMPER p. 307

CONTEMPORARY AUSSIE DAMPER p. 308

PP Web Destination

food habit: pattern of eating; the way in which food is prepared, served and eaten

3.2.3 Making traditional damper

3.2.4 Bush damper

UNIT REVIEW

Looking back

1. List the different ways that European settlement influenced the food habits of many Aborigines.
2. Outline how the early settlers' diet compared with that of the Aborigines.
3. Explain why the early settlers didn't include more bush tucker in their diets.
4. Why was rationing of foods necessary during Australia's early settlement?
5. Why do you think the meat was salted, instead of left fresh?
6. Explain how European settlement has influenced the food supply in Australia today. Use as many examples as possible.

For you to do

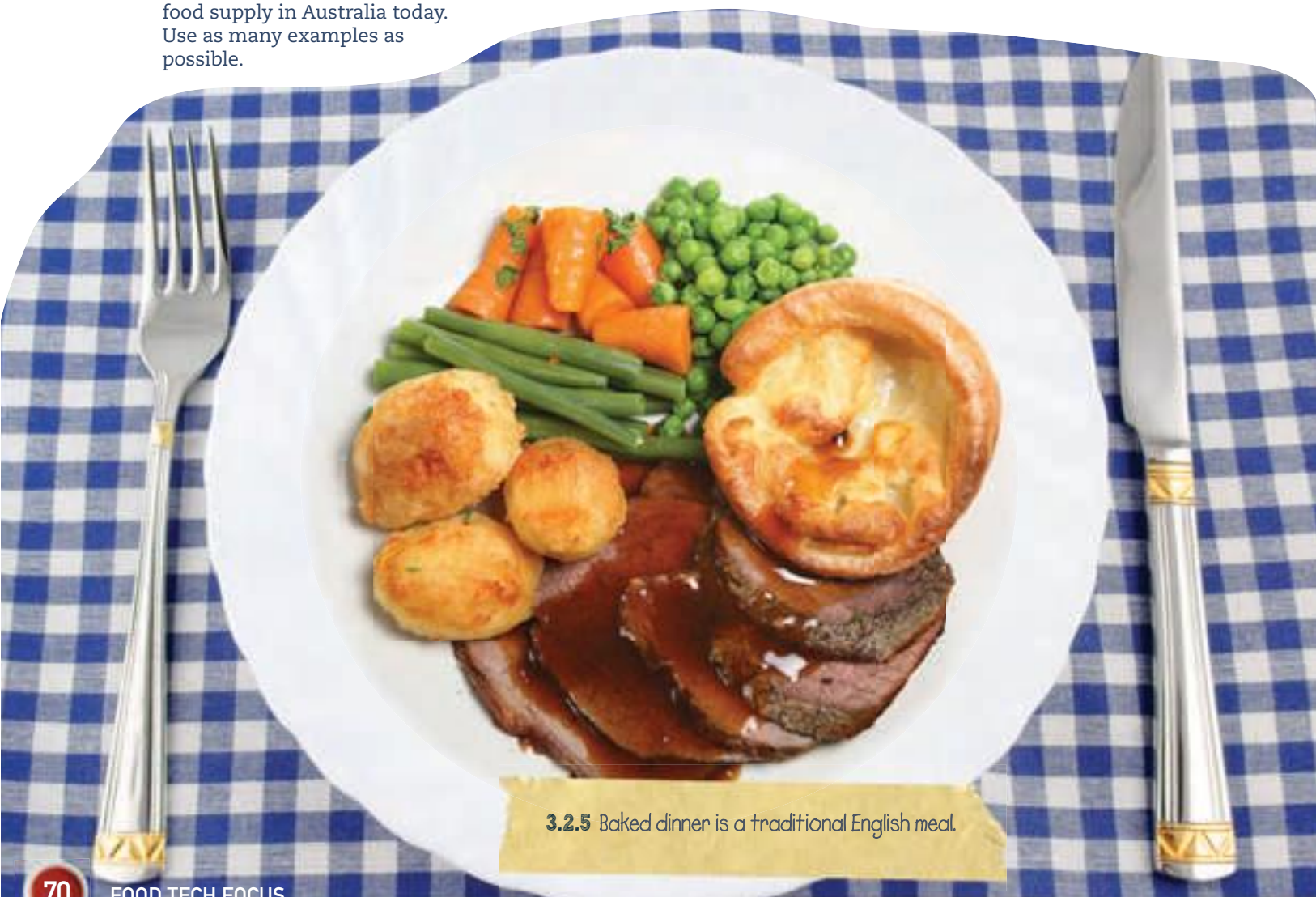
7 a. Convert the rations shown below into metric measurements (1 lb = 450 g; 1 pint = 600 mL; 1 oz = 30 g).
7 lb flour
7 lb beef
4 lb pork
3 oz dried peas
6 oz butter
½ pint vinegar
8 oz rice

b. Divide these rations by two-thirds to calculate the women's rations and by one-third to calculate the children's rations.

Taking it further

Web Destination

8. Research the causes and symptoms of scurvy.
9. Research the health problems of Australian Aboriginals today. Compile a class report on your individual findings.
10. Describe the problems faced by Aborigines adapting to non-Aboriginal food habits.
11. Explain some of the problems early settlers experienced in ensuring an adequate food supply for their families



3.2.5 Baked dinner is a traditional English meal.

Multicultural influences

Effects of immigration on lifestyle and food habits

Since the early years of European settlement, Australia has developed as a diverse **multicultural** society. For example, in the 1840s many Germans settled in the Barossa Valley in South Australia, and established vineyards for wine making. The first Chinese arrived in 1848 and many more followed to work as farmhands on the waterfronts. By 1880, there were 100 000 Chinese in Australia. Mass immigration was introduced after the Second World War, in an attempt to bring thousands of people to Australia very quickly, which was necessary for the expansion of the country.

Today, 23 per cent of Australians were born in another country and just over 25 per cent of the population have at least one parent who was born overseas. Over 20 per cent of the current Australian population now come from a non-English-speaking background. All these people have brought their food habits to Australia, which has resulted in the expansion of the diet of all Australians.

Types of foods and flavourings

As people migrated here, they brought their traditional food habits, preparation techniques and cooking methods with them. They then had to adapt these to the foods available within Australia. Many foods with different ingredients and flavours have been introduced to Australia. Cuisines borrow traditional ingredients from other cultures and incorporate them into dishes. For example, a chef may use some Thai ingredients, such as lemongrass, in a meal that is of Italian origin.

Food habits differ from person to person and culture to culture. Your present food habits have developed throughout your life and will possibly change as you find yourself in new and interesting environments. Our food habits usually develop around the cultural group to which we belong, the lifestyle choices that we make and the personal needs that we have at different times in our life.

Food habits are affected by:

- religious taboos and requirements
- cultural customs
- knowledge and understanding of food and nutrition
- availability of food
- availability of cooking utensils and appliances
- food distribution methods
- social and peer pressures
- advertising
- travel
- climate and geography
- availability of technology
- food preparation techniques and cooking methods.

Preparation techniques and cooking methods

Migrants from every country have brought different styles of preparation, cooking and eating. Over time, other groups have integrated these styles into their patterns of meal preparation and consumption. Until the 1950s, most European Australians ate a traditional British-style diet, which rarely varied from the following pattern.

Breakfast: porridge; bacon and eggs or grilled chops; toast and jam served with tea.

Lunch: a hot cooked meal of meat and vegetables; soup and bread if you were home on the farm. If you were at work or school you had sandwiches, fruit and home-baked cake.

Dinner: soup; meat (beef, mutton, lamb, rabbit, fish) with vegetables (potatoes, peas, cabbage, beans, carrots); sweets would usually consist of pudding and stewed fruit.

multiculturalism: existence of different cultures within the one society

3.3.1 Does this family represent multicultural Australia?

Now we are able to eat a variety of food products that can be prepared to suit our individual needs and lifestyles. We are able to purchase pre-prepared foods from all over the globe at local delicatessens and grocery stores or dine out at restaurants and cafes that prepare international cuisine. We can prepare our own meals using traditional methods with guidance from cookbooks, magazines and television lifestyle programs. Cooking classes are also available to cater for every nationality as people continue to travel and bring their food experiences home with them.

Our diet has changed from traditional and rather uninteresting to one of the most varied in the world. We now readily combine ingredients and cooking styles from different cultures in the one meal. This is known as fusion cooking. We owe this mix to the various cultural groups who now reside in Australia.

PP Web Destination

3.3.3 Top 30 birthplaces of the Australian population, 2006

Country	Persons
Australia	14 072 937
United Kingdom (a)	1 038 162
New Zealand	389 467
China (b)	206 593
Italy	199 124
Vietnam	159 848
India	147 111
Philippines	120 534
Greece	109 989
Germany	106 528
South Africa	104 132
Malaysia	92 332
Netherlands	78 931
Lebanon	74 848
Hong Kong	71 801
Sri Lanka	62 257
United States of America	61 713
Korea, Republic of (South)	52 761
Poland	52 251
Croatia	50 990
Indonesia	50 981
Ireland	50 259
Fiji	48 147
Malta	43 708
Former Yugoslav Republic of Macedonia	40 656
Singapore	39 963
Egypt	33 497
South Eastern Europe, not further defined	33 362
Iraq	32 518
Canada	31 617

(a) comprises England, Scotland, Wales, Northern Ireland, Channel Islands and Isle of Man.
(b) Excludes Hong Kong and Macau and Taiwan.
Source: Racism No Way! website

RECIPE

PAD THAI p. 309

MINCED BEEF PIES p. 310

3.3.2 A food stall at Redfern Park, where sausages and satay sticks are on the menu

UNIT REVIEW

Looking back

1 List the foods or dishes that you would regard as traditional Australian foods. Explain why.

2 Identify the popular foods that are available today because of migration. Where have these foods come from?

3 Outline how the different cultures in Australia have influenced the types of food we eat.

4 Outline the positive effects of multiculturalism on our Australian lifestyle and food habits.

For you to do

5 a Collect a variety of food magazines and evaluate the way in which some of the dishes are advertised and presented.

b Design and prepare your own multicultural recipe that could be published in a food magazine.

c Use a digital camera to take photos of the finished dish. Save them onto your computer and prepare a one-page magazine spread of your finished food product. You may like to include your recipe and any helpful hints.

Taking it further

PP Web Destination

6 Interview someone who came to Australia within the last fifty years. Prepare a survey with the following questions.

a What did you think of the food that was available in Australia when you came here?

b What attitudes did you encounter from Australians towards your own food preferences?

c What foods do you still consume from your country of origin?

d What foods do you now eat that you did not eat in your home country?

7 Using the website link, visit Coles Online and undertake a virtual shop of the shelves. Look at the range of fresh meats, dairy products, fruits, vegetables, frozen products and convenience meals available. Select five products and explain how immigration has influenced each.

8 Keep a diary of the foods you eat over three days. Highlight the country of origin of each food on a world map.

3.3.4 A variety of food products reflecting multicultural Australia

3.4

Evolution of an Australian cuisine

RECIPE

POTATO PEA MASH p. 311

Web Destination

The Australian cuisine was traditionally based on what would grow in Australia and what was available. The migration of many cultures to Australia over the past sixty years has resulted in a diverse mix of food. The size of Australia means that when the season for a particular fruit finishes in one state the same fruit is starting to ripen in another part of the country. With quick and efficient transportation methods food is easily delivered to other parts of the country.

A love of the outdoors is typically Australian. The warm, sunny conditions for much of the year mean that Australians spend more time outside and meals play an important part in our lifestyle, from barbecues with family and friends, fish and chips at the beach, meat pies while watching weekend sport or picnics in the bush. Australians are now eating in a way which truly reflects our own relaxed casual lifestyle and climate. We now have a diversity of foods and cooking methods.

FOOD IN FOCUS

Tukka Advanced Australian Fare

Tukka's vision is to take the flavours of the bush to the tables of the world.

Tukka restaurant offers a world-class dining experience where quality ingredients from Australia's bountiful countryside, oceans and bays are combined with native herbs, spices and berries to produce a true taste of Australia.

Tukka aims to lead the development of Advanced Australian Fare, a modern and innovative international cuisine celebrating the flavours of Australia's native foods.

Source: Adapted from information on the Tukka website

Activities

Web Destination

Using the website link, visit the Tukka restaurant website and answer the following questions.

1. Brainstorm words that you would use to describe current Australian cuisine.
2. Read through the section titled 'Discover Australian Fare' to learn more about the evolution of Australian cuisine and where it is heading. Do you think this information accurately reflects Australia's current cuisine?
3. Outline why Australian cuisine is able to continually evolve.
4. Identify three foods mentioned that you have not eaten before. Using library and internet resources, research the sensory aspects of each food and its use in food preparation.

3.4.1 Australian fruits and berries are a source of ingredients for Bush Tukka.

UNIT REVIEW

Looking back

1. Discuss the factors that have influenced the development of an Australian cuisine.
2. List the foods you eat that were not originally part of your cultural background.
3. Make a list of your ten favourite foods. Outline why you like each and where the food originates.
4. Outline the foods that could be included in modern Australian cuisine.

For you to do

5. Using the website link, visit the Good Taste site and search for the article 'From damper to dial-a-pizza'. Read through the article, form groups of four and map, on butcher's paper, the development of our Australian cuisine, from 1788 to present.
6. Research how and where each of the following 'Australian' dishes originated: lamingtons, pavlova, meat pies, Anzac biscuits.
7. Debate the following: 'Australian food doesn't have its own identity. Australian food is a product of its past.'
8. Predict what the Australian diet will consist of in 2110.

Taking it further

9. a. Collect a range of recipes from around the time of Federation. The Country Women's Association in your local area should be able to help you locate a variety of recipes.
   b. Analyse the recipes using the following criteria:
      - preparation time
      - ingredients used
      - measurement system
      - utensils used
      - writing style and layout.
   c. Compare the features of the Federation recipes to modern recipes of today. What did you find?
   d. Choose one of the Federation recipes you have researched and prepare and share it with your class.
10. In small groups, prepare a visual display about one of the characteristics of Australian cuisine. Combine each group's work to present as a class display.

3.5

Influences on food selection

3.5.1 High satiety-value foods and low satiety-value foods

What factors influence people to select one food over another? Very rarely would only one factor influence our selections—most decisions are a result of many interrelated factors.

Physiological influences

Physiological factors affect the body's need and desire for food. You may select foods because you are hungry, because you have an appetite, or because they make you feel satisfied after you have eaten them. For a food to make you feel satisfied it has to have a high **satiety** value. If you have eaten and you do not feel satisfied, then the food you ate is considered to have a low satiety value.

There is a distinct difference between hunger and appetite.

- Hunger is the unpleasant feeling created when the body says that it needs food straight away.
- Appetite is the desire for certain foods even when you are not hungry. It is generally the result of personal experiences as well as your senses of sight, taste and smell.

Each person experiences hunger, appetite and satisfaction differently, as each is developed through the experiences that you are exposed to and the food habits that you have. It is very important to understand the differences between hunger and appetite, as sometimes people eat when they want to rather than when they are hungry. Over time this pattern of food consumption can lead to diet-related disorders such as obesity.

People vary in many ways, as does the amount of food each person needs to remain healthy and continue to function. To do this you must supply your body with an adequate amount of food that contains all of the essential nutrients. The amount required depends on factors such as growth and development, gender, body size and activity level. (Refer to Chapter 8 for special requirements throughout the life cycle.)

Psychological influences

There are many psychological factors that influence your food choices. These differ from person to person.

Values

Values are personal feelings that you have about what is important to you. These can influence the foods that you select to eat. For example, individuals who value the rights of animals may not consume any animal products, including dairy products.

Attitudes

Attitudes are opinions. They are not as strong as values. Attitudes exist around the eating of certain animals. In some countries the eating of dog flesh is unacceptable, yet in others, such as China, it is acceptable.

Experiences

Experiences can influence your relationship with food. Foods commonly eaten when the family is together, or special friends or relatives are visiting, often remain firm favourites, such as your mother's baked dinner. Eating them helps you to remember those pleasant experiences. Unpleasant experiences or memories can also be associated with the foods that you select and the way that they make you feel. For example, people who have been ill after eating a particular food often have difficulty eating that food again.

Emotions

Emotions are linked to feelings and often the foods that you consume can be used to express feelings. You may eat because you are feeling happy, worried or nervous, and there may be particular foods that you choose at these times.

Habits

Habits are routines that you can perform without really even thinking about them and are usually very hard to break. They can be something that you do at a particular time each day or in a certain situation. Food habits relating to food selection can be both good and bad. Good food habits may include not skipping breakfast, eating the correct daily servings of fruit and vegetables, or drinking water instead of soft drinks.

Beliefs

Beliefs are what you accept to be true and generally come from interaction with the people around you. They can be based on your experiences, traditions passed down in your family, or religion. For example, your family may always say a prayer before they consume any food, or may not eat meat on Fridays.

Geographical influences

Geographic location and climate dictate the type of foods that can be grown—for example, desert areas are not suitable for growing crops of wheat, fruit or vegetables—and influence how and where you eat them.

People who live in hot climates tend to eat foods with high water content, such as salads and fruits, and generally take on a more casual and relaxed approach to eating, while people in cooler areas tend to eat more hot meals indoors, such as baked dinners and casseroles. People living in rural or coastal areas often prefer to eat fresh local produce, as it is generally cheaper than foods that need to be transported from city areas. This also allows them to keep their money within the local area. City people regularly eat out and consume many takeaway and convenience foods, as it is seen as a very social activity.

3.5.2 Eating outdoors is a popular activity in an appropriate climate.

Social influences

Eating is a social activity and the sharing of food is often central. Any time people come in contact with others there is a social interaction and sharing of ideas, customs and lifestyles. Family and peer groups are certainly the most important socialising groups and both have a significant influence on the foods that you select when you are with them.

When families entertain, special foods and traditions are shared. It is on these occasions you learn about new foods, food presentation and how foods are used to create a desired impression. What birthday party would be complete without a birthday cake? In Australia, barbecues are often the focus of many social events. There is very little more typically Aussie than a barbecue, whether it is the latest gas-fired piece of hi-tech equipment or an old grill propped on a couple of rocks. A bit of steak and the odd sausage is as much a part of the tradition as the fire itself. As a result of influences from other cultures, Australians are cooking a greater variety of foods on the barbecue.

satiety: state of being fed or satisfied

Economic influences

In any community the foods that people select to eat depend to some extent on price and the money that is available to spend. The cost of food can vary depending on the following factors.

- The amount of food purchased: If individuals have enough money to purchase foods in bulk and sufficient storage then it is cheaper to buy in bulk than to run to the corner store daily for the same product.
- The time of purchase: When foods are in season and locally produced they are often a lot cheaper than foods that are out of season and need to be transported from elsewhere. The costs associated with transportation add a considerable amount to the final price of the food product.
- The place of purchase: Where you purchase a food product has an impact on the price that you will pay for it. For example, if you buy your fruit and vegetables from a roadside stall it is usually less expensive than going to your corner store for the same product.
- Whether the food is processed or unprocessed: Processed food products are more expensive than unprocessed. Frozen pizza that has undergone a range of processes before you find it at your local supermarket will cost more than if you were to make a pizza of the same quality at home.
- The age of the food: Foods that are past their use-by dates are generally sold at a reduced price.

RECIPE

CHICKEN NOODLE OMELETTE p. 312

Hands on

Develop strategies to improve eating patterns

Purpose

To determine how individuals and families can improve their eating patterns.

Steps

1 With a partner, consider the following general statements.
   - When income rises, the consumption of more refined, processed and convenience foods also rises.
   - When income rises, the proportion of income spent on food decreases although the actual amount spent on food increases.
   - When income rises, the proportion of protein and fat-rich food consumed increases and the proportion of carbohydrate-rich foods decreases.

2 Discuss these statements with your partner and try to work out why these patterns occur.

3 As a class, share your answers.

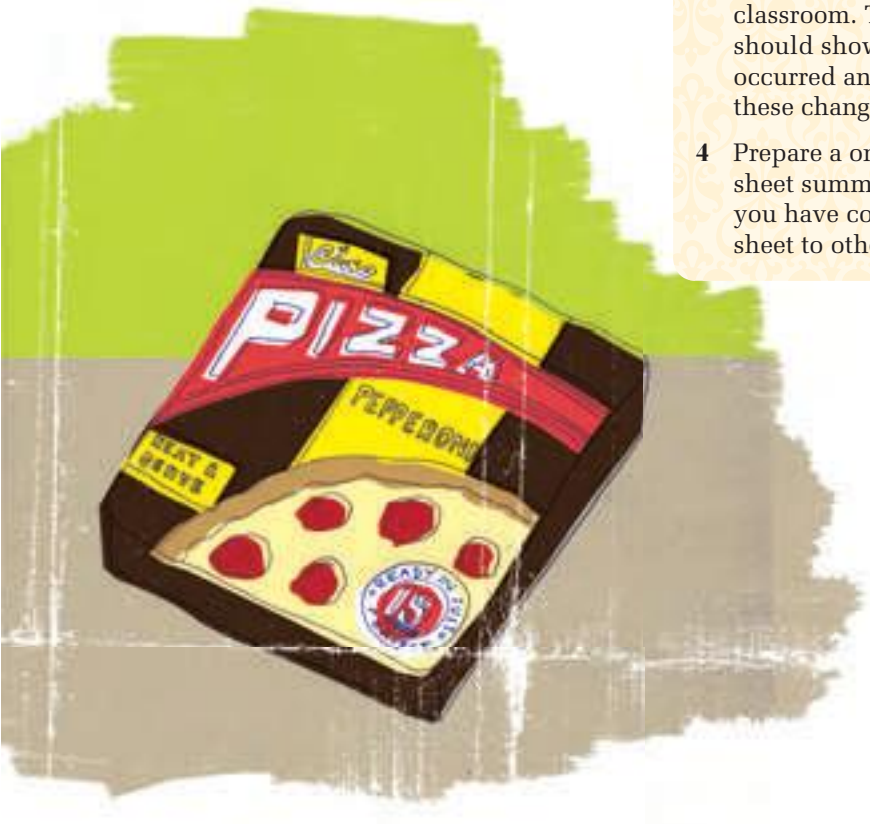
4 In a paragraph, describe how individuals with high incomes could improve their eating habits.

5 Predict the outcome if there was a decrease in income rather than an increase.

Technological influences

Technological developments within the food industry not only influence the type of foods that you eat, they also influence the way in which you prepare, store and serve foods. As technology constantly develops and improves, consumers are seeing an increase in the variety of food products available. A decrease in the amount of food wastage has also occurred, as technology has provided many more ways to successfully preserve and store food products that in the past would have been thrown away due to food spoilage. Some technological factors that affect your food selection include developments in:

- cooking methods
- food production
- food storage
- food packaging
- preservation methods
- genetic engineering
- appliances.



Hands on

Researching technological developments

Purpose

To determine the effect of technological developments on the food you eat.

Steps

1. Divide the class into groups of seven according to class numbers.
2. Each group is required to research one of the technological developments listed above using a variety of resources, such as books, magazines, the internet or other people.
3. Compile a poster presentation that can be displayed in your classroom. This presentation should show the changes that have occurred and the implications of these changes for food selection.
4. Prepare a one-page information sheet summarising the information you have collected. Distribute this sheet to other class members.

Molecular gastronomy is the investigation of the physical and biological processes of cooking. Its goals are social, technical and artistic.

Religious influences

Within cultures, people select foods to conform to particular styles of eating. They also may have religious beliefs about particular foods and how they should be prepared and served.

Religious food practices vary widely. Prohibitions and restrictions even within a particular faith may change between one suburb and the next. National variations are also common. Further, individual adherence to a religious diet is often based on how strongly the person believes in the religion to which they belong. The following table provides a brief overview of some religious food practices.

3.5.3 Common religious food practices

	Seventh Day Adventist	Buddhist	Eastern Orthodox	Hindu	Jewish	Mormon	Muslim	Roman Catholic
Beef								
Pork								
All meat								
Eggs/dairy								
Fish								
Shellfish								
Alcohol								
Coffee/tea								
Meat and dairy at the same meal								
Leavened foods								
Ritual of slaughter of meats								
Moderation								
Fasting*								

prohibited or strongly discouraged

avoided by most devout

some restrictions regarding types of foods or when foods are eaten

permitted but may be avoided in some instances

practised

* fasting varies from partial (abstention from certain foods or meals) to complete (no food or drink)

PP Web Destination

Media and advertising influences

The media and advertising can influence your lifestyle, what you choose to wear, the foods you eat and your perceptions of body image. The media promote images of thinness and fitness, often portraying unrealistic male and female body images. To obtain the ultra-thin look that is considered fashionable, males and females often select foods that do not provide them with adequate dietary requirements. Many women are dissatisfied with their bodies and constant dieting in the pursuit of thinness has become a normal behaviour among women in Western societies. Thinness has also come to represent success, self-control and higher socio-economic status. Eating disorders such as anorexia nervosa and bulimia can also develop as people take drastic measures to look like the people they see in the media.

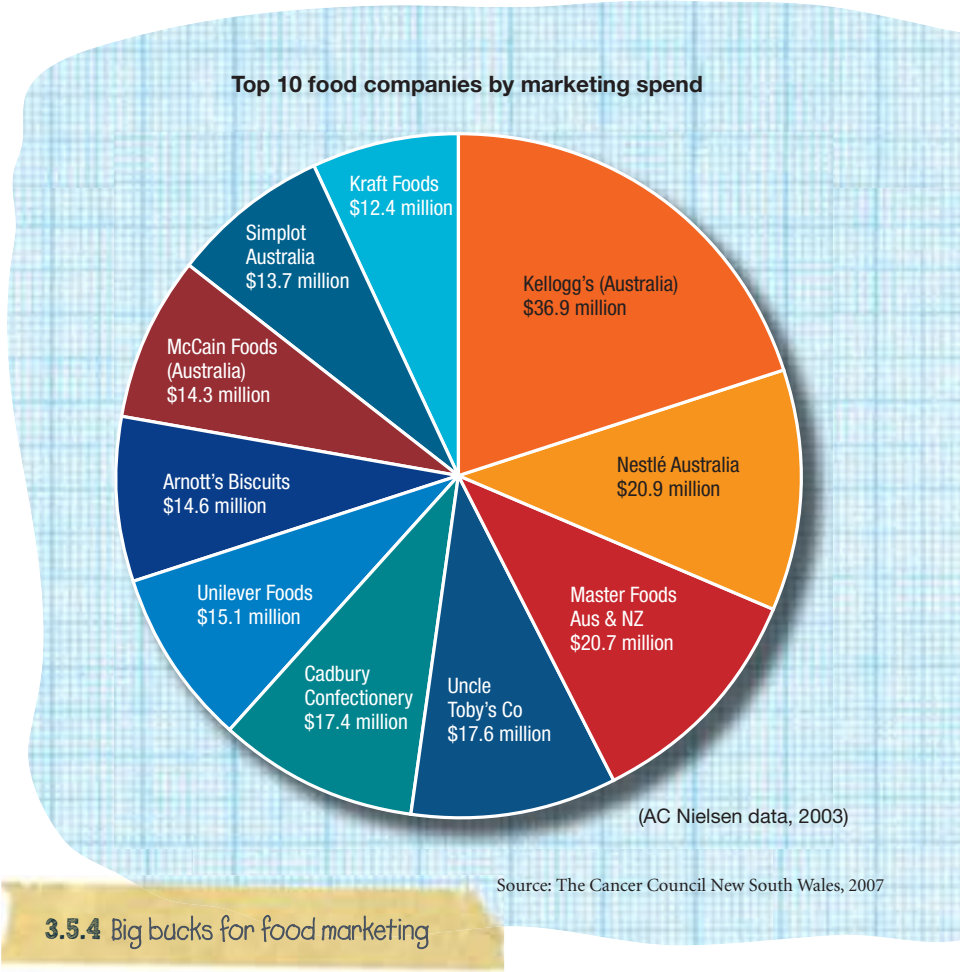
The media also target children, as they are a major influence on household food selection and are highly influenced by advertising. They are an important force in the marketplace, not only on their own account but because of the influence they have on their parents' food purchases. Many products advertised on television are also displayed in the supermarket at children's eye level. Many television advertisements promote food that is high in fat, salt and/or sugars. Advertisements directed at children screen before and after school. However, Australia does not allow advertisements during television programs aimed at the preschool age group.

Sophisticated and aggressive techniques are used in marketing. Techniques used by advertisers include prizes, giveaways, animation, special effects and jingles. Popular personalities are often used to endorse products. The predominant messages are related to having fun, being cool, looking attractive and enjoying tasty food.

To determine the extent of junk food advertising that Australian children are exposed to on television, the *Sydney Morning Herald*, in 2008, analysed free-to-air television between 6 am and 9 pm. They found that fifteen commercials an hour were broadcast for fast-food outlets, chocolate and other unhealthy products during the afternoon and early evening—prime viewing slots for children. Many of the food advertisements broadcast during children's television programming hours were for food high in fat, sugar and/or salt with little nutritional value.

Ninety per cent of girls between 3 and 11 years of age own at least one Barbie doll. For many young girls this doll, which has a figure that is unattainable in real life, acts as an early role-model.

Australian children aged between 5 and 12 watch two to three hours of television a day, the majority on commercial stations.



Source: The Cancer Council New South Wales, 2007

3.5.4 Big bucks for food marketing

UNIT REVIEW

Looking back

1 List the foods you often crave. When are you most likely to crave these foods? How nutritious are they?

2 List the foods that fill you up quickly but leave you hungry in an hour.

3 Why is food such an important aspect of social gatherings? Describe how your family entertains. What foods are offered to guests and how are they presented? Do your classmates' families do anything different? How?

4 Identify some of your good and bad food habits and suggest reasons why they occur.

5 List and explain the different physiological factors that influence food choices. Use examples to justify each point.

6 Using examples, outline how your geographic location may influence what you eat.

For you to do

7 Conduct your own survey. Survey the advertisements shown during a children's show on television. Note the program watched, the length of the program and the number and type of food advertisements shown.

   a Describe the advertising techniques used, including jingles, colour, famous people, humour or special gimmicks.

   b Are the foods advertised nutritious, or are they high in fat, sugar and salt content?

8 In small groups, collect four magazines or newspaper advertisements for food. Evaluate each advertisement, highlighting the target audience and the techniques used to attract the buyer.

9 Which food practice is the most common among the religions listed in the table on page 80? Can you explain why?

Taking it further

10 Working in pairs:

- design a low-cost main meal
- write up a work plan, including time, sequences of steps, processes and equipment used, health and safety considerations
- visit the supermarket to cost the items for your meal and determine the total cost
- prepare your meal and undertake a sensory and nutritional evaluation of the finished product.

11 Design a survey to be completed by all students in your class as a means of analysing what each person eats. Survey an older year group at your school. Compare results from each year group and draw conclusions.

Factors affecting current consumption patterns

3.6

The food we consume in Australia has significantly changed over the past 200 years and reflects changes in our society, lifestyle and Australian cuisine.

Factors affecting the food consumption patterns of Australians can be divided into the following categories:

- social
- economic
- nutritional
- environmental.

Social factors

What we eat, when we eat, where we eat and with whom we eat have all noticeably changed in the last twenty years. The structure of Australian families has also changed, with more adult-only households and more single-parent households with dependent children. Nearly 70 per cent of women now work and approximately 60 per cent of households with two parents and dependent children have both parents working. With more single-parent families and women working full-time, the time available for food selection and preparation has decreased.

Australians are cooking less frequently, and spending less time preparing the meals that are cooked—there are homes currently being built in Sydney without proper kitchens! Males are taking a greater role in food selection and food preparation compared with previous generations. However, younger men tend to purchase meals away from home rather than cook for themselves. Children are more responsible for choosing their own snacks and meals, with many preparing meals for themselves without adult supervision.

These changes have increased our reliance on and interest in pre-prepared foods and foods with an extended shelf life. Australian consumers are also experimenting with a diverse range of new, exotic and culturally different foods, including raw animal food products such as sushi.

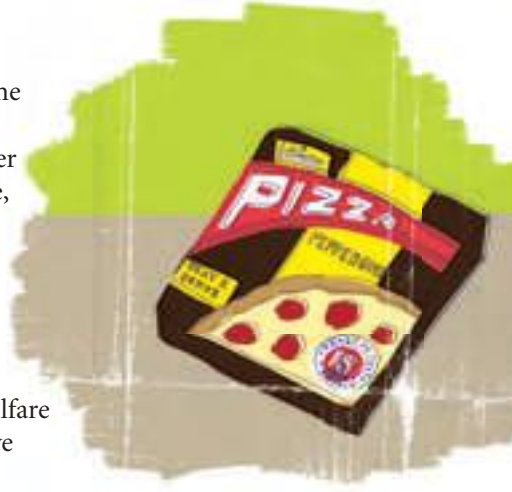
Socialising

Food is playing a far greater role in Australian entertaining and socialising with many people eating out more regularly. Supermarkets, fast-food outlets and restaurants have all extended their opening times to cater for consumers' lifestyles and work arrangements. The foods consumed are often picked up on the way home from work, ready for the family to eat, or ordered by phone and delivered to the door. When Australians do eat at home, they are more likely to eat alone, or in the company of the television.

Food manufacturers have responded to the growing trend towards eating out with a range of chilled, frozen and microwavable 'quick fix' meals, which are promoted as the restaurant dishes you don't have to go out for.

Economic factors

Economic factors such as income and the cost of living affect the foods we select. The cost of food often takes priority over considerations such as nutritional value, social desirability and taste.



Income

Income is one of the most important determinants of food consumption. Families living on pensions or social welfare benefits, or other very low incomes, have difficulty paying for the necessities of life—food, clothing, heating and housing. With most of their income tied up in rent or regular payments to power utilities, the only part of the budget in which low-income families can exercise any discretion is that part set aside for food. People with low incomes spend a greater proportion of their family income on food compared with families on higher incomes. Low-income families may suffer from poor health if they cannot afford an adequate food intake. This may result in dietary deficiencies such as a lack of iron or Vitamin C. High-income families often make poor food choices, as they may consume too much food. This can contribute to diet-related disorders such as coronary heart disease and diabetes.

PP Web Destination

Poverty is a real issue in Australia, with over 2 million people living below the poverty line. One charitable organisation in NSW alone supplies over 600 000 free meals each year to homeless people.

Groups at risk

There are a number of groups within the Australian population that have been identified as being at risk of undernutrition: the unemployed, low-wage earners, single-parent families, pensioners and Aborigines. These groups may have major problems maintaining a healthy and balanced diet. Sometimes they have to go without food until they receive their pension or benefit. Individuals who live in low socio-economic and remote areas of Australia are further disadvantaged by a lack of large chain food retailers in their region, and by the lack of accessible transport to such shops. They are forced to depend on smaller corner stores where the variety is limited and the cost is higher. These same people may not have access to appropriate food storage and cooking equipment.

3.6.1 Supermarkets offer a range of convenient pre-prepared meals.

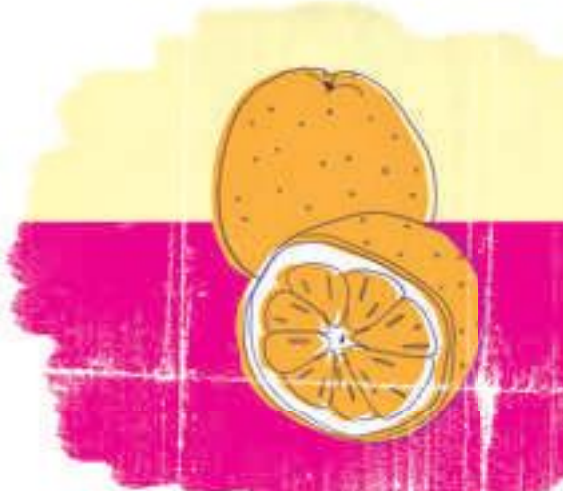
Nutritional factors

The role of diet in promoting health and preventing lifestyle-related health disorders has been increasingly promoted to Australians over the past twenty years. This nutrition education has focused on the dietary guidelines and improved lifestyle choices in order to encourage a healthy lifestyle.

Concern about the food consumption patterns of Australians led to the development, in 2003, of a revised set of dietary guidelines for Australian adults and for children and adolescents. These guidelines provide information for health professionals and the general population about healthy food choices. They encourage healthy lifestyles that minimise the risk of the development of diet-related disorders within the Australian population. The guidelines highlight the groups of foods and lifestyle patterns that promote good nutrition and health.

While these guidelines cannot guarantee good nutrition, as many other factors such as heredity and lifestyle also play a role, an intake from a wide variety of food will help improve and maintain health. No single food contains all of the nutrients the body needs in the amounts necessary for optimum growth and health. For that reason, it is important to remember to consume a wide variety of foods in the correct amounts and in the context of a total, balanced diet.

The guidelines are linked to the Australian Guide to Healthy Eating (see Chapter 2).



Environmental factors

Food has to be grown, processed, packaged, distributed and stored. All these processes have environmental impacts as they all use energy and natural resources. While some of these resources are renewable, many are not. For example, the growing of rice has meant that irrigation has to be used to supply sufficient water. Extensive irrigation can have significant effects on surrounding land. Land also has to be cleared to grow crops and this can cause erosion.

Packaging

Technological developments have meant that many food products are now available in different forms of packaging. Also, packages are lighter and thinner, and fewer raw materials are used in their manufacture. This is desirable as it means that fewer of our natural resources are used to produce the packaging.

Much of the landfill in Australia consists of food packaging. It is important for the food industry to find ways of using less packaging while maintaining high food quality. However, with the trend towards consumption of convenience foods, 'heat and serve' meals and single-serve food items, most developed countries are producing more packaging than ever before. Consumers also demand packaging that is convenient and will protect the food, keeping it safe and free from contamination.

Creating a balance

Australians have to maintain a balance between producing food for consumers and maintaining the environment and resources. Consumers also have to take responsibility for the environment by using resources wisely, minimising food wastage, minimising packaging materials and disposing of packaging materials in an environmentally aware manner.

Consumer demand for different food products has changed in important ways over the last thirty years, driven by increasing per capita incomes, demographic shifts and lifestyle changes.

To find out more about nutrition, use the website link to visit the Australian Institute of Sport (AIS) website.

FOOD IN FOCUS

Australia: What we eat

Australians are some of the largest consumers of meat in the world and the quality is extremely high. Our meals tend to be lighter with less heavy sauces and gravy. However, there is an increased use of marinades and lighter sauces, such as soy sauce and teriyaki sauce. Classic European dishes are still popular but the current food fad is Asian in origin—with Japanese and Thai joining Chinese, which has long been a favourite. Meat is increasingly being used in stir-fries, kebabs, rolled roasts and noisettes. Interestingly, Australians still enjoy a traditional roast of beef, lamb or pork and visitors will find these on many restaurant menus.

There is a seemingly endless supply of ethnic restaurants catering to the many nationalities that now live here. The combination of high-quality local foods with ethnic cooking methods has produced some of the best meals in the world.

Barbecues are very popular with Australians, who like a casual lifestyle and eating outdoors. Most homes would now have outdoor barbecue facilities or portable barbecues. Many parks and beaches have designated barbecue areas. You will hear the steady sizzle of meats and seafood over coals around the country on summer evenings and during weekends. Many small hotels and clubs also have outdoor eating or barbecue facilities where customers can choose and cook their own steak.

Milk-fed lamb and veal are served in top restaurants. They usually cost a little more but are valued for their fine, delicate flavour. Top restaurateurs have their own breeders who are contracted to supply them with suckling lamb (5–6 weeks old). Cattle is predominantly pasture-fed and produces lean beef by world standards; a 100 gram-portion of cooked lean rump steak contains about 6.7 grams of fat and 80 milligrams of cholesterol. Grain-fed beef would have approximately twice this fat content.

Australians are not big pork eaters but there has been an active campaign by breeders to produce a leaner meat and new cuts. Chicken is the most commonly used bird for eating. Duck, goose, turkey, quail, guinea fowl are also bred and Australian pigeon is rated as among the best in the world.

Kangaroo and water buffalo are also slaughtered for consumption in some states. At present, kangaroo can legally be served in restaurants in South Australia, Tasmania, the Northern Territory, Victoria and the Australian Capital Territory. The taste is similar to venison but less gamey. The cuts are not large, so kangaroo is usually served in small medallions.

Over the past ten years migrants have had a significant influence on the introduction of many varieties of smallgoods and a growing awareness of their uses. Most of the varieties available originated overseas but they are increasingly being made here by experts from those countries. Salamis include Danish, Polish, Italian, Milano, Pepperone and Hungarian. Speck, coppa, bratwurst, coteghini, smoked beef, bastourma, berliner, pate, bloodwurst, cabanossi, strasburg and csabai can be bought at most good delicatessens. Ham and bacon are popular, bacon being an integral part of the traditional Australian breakfast.

Sausages are eaten by 70 per cent of Australian households at least once a week. Australians have always regarded the sausage, or snag, as a cheap form of meat to fry, grill or barbecue. But this is changing. Immigrants from countries where the sausage has gourmet status are introducing new varieties and more interesting ways of cooking and serving.

Source: Adapted from information on the Global Gourmet website

Activities

1. List the foods that you consume over a one-week period. Does the information outlined above represent the foods on your list? Discuss your findings.
2. Outline why Australian food consumption patterns continue to change.
3. Select one product named above that originated overseas. Use the internet to research its origin and describe how it is currently consumed in Australia.
4. Research two interesting ways of cooking and serving the traditional Aussie sausage.

3.6.2 Summary of changes in consumption of food over the past two decades

Increased consumption	Decreased consumption
Chicken, pork and bacon	Beef and lamb
All fruits	Canned fruits
Vegetables—potatoes, chips and crisps, tomato and root vegetables	Leafy green vegetables
Soft drinks, confectionery	Refined sugar
Coffee	Tea
Wine	Beer
Pasta and rice	Fat and fat-based spreads—butter and cooking margarine
Seafood	Eggs
Dairy products	
Bakery products	

Looking back

1. Identify one social factor affecting food consumption patterns of Australians and provide an example.
2. How may the structure of a family and the life cycle stages of family members affect the type of food eaten?
3. Outline how income may affect the food purchases of families.
4. Explain how family income may be linked to diet-related disorders.
5. Examine the table above and discuss why people are now eating more chicken than beef or lamb.

For you to do

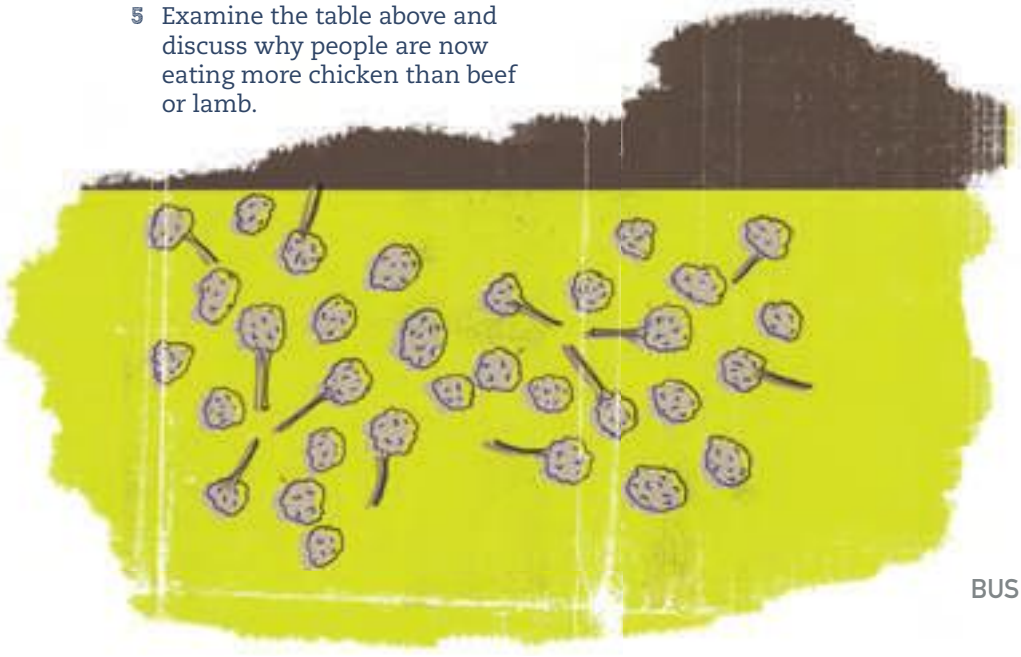
6. Visit your local supermarket or use the internet to research new convenience foods that are available to purchase.
7. In class, brainstorm the ways in which you can as a food consumer have a positive effect on the environment.

Taking it further

PP Web Destination

8. Using the website link, visit the Australian Bureau of Statistics website and research the changes in the consumption of food that have occurred over the past twenty years. You will be able to do this by locating the summary of the publication *Apparent Consumption of Foodstuffs, Australia*.
9. Conduct a survey to determine whether Australians are concerned about the environmental impact of the foods they consume. What conclusions can you draw from your results?

UNIT REVIEW



3.7

Additional content: production and processing

3.7.1 Processing peaches prior to sun-drying at Angus Park, Loxton, Murray Riverland, South Australia

Recent developments in food packaging and storage include flexible and lightweight plastic packaging materials, frozen-food cabinets, refrigerated dairy cases and dual-oven heating trays. Food quality control has also had an impact on food packaging.

The food industry did not really start in Australia until the middle of the nineteenth century. Significant developments in the nineteenth and twentieth centuries are summarised below.

- Sugar growing and refining started in the early nineteenth century.
- Wine making began in the middle of the nineteenth century, although the quality was not very good.
- Refrigeration began in Australia in 1851, although it was not really successful until much later.
- In 1855, William Arnott, a baker and pastry cook, began to make biscuits in Newcastle. His became a dominant name in Australian biscuit making.
- Advances in the later part of the nineteenth century included roller milling of wheat, advanced sugar milling, margarine manufacture, developments in milk separators and the sun-drying of fruits in the Sunraysia district. Research into the growing of wheat and the farming of sheep also assisted the industry.
- In 1865, the Australian Meat Company was set up and the canning of meat, meat extract and fat began in Australia. Other meat canneries were established around the country, although most failed due to lack of money and experience. Larger canneries survived and exported meat to Britain. The canning of jam began in Hobart in 1861 and later extended to mainland Australia.
- In 1906, R. G. Edgell started growing vegetable crops at Bathurst and by the end of the 1930s he was canning a range of vegetables.
- The dairy industry developed slowly, although cheddar cheese was really the only cheese available until the 1950s. Processed cheese made by the Kraft Walker Cheese company was available in 1926.

With the onset of the Second World War, food manufacturers had to quickly develop and adapt technologies to provide rations to the overseas forces. Since this time there have been tremendous developments in the areas of food preservation, manufacture, production and legislation, for example:

- innovative packaging such as modified atmospheric and aseptic packaging
- preservation methods that do not damage food
- high-speed can-making machinery
- sophisticated brewing
- dehydration, quick freezing and freeze drying.

UNIT REVIEW

Looking back

1. Why did Australia lag behind Britain in producing and processing food in factories?
2. At what stage in Australia's history did commercial food processing and production really begin?

For you to do

3. Select one of the following sectors of the Australian food industry and research its development:
   - meat industry
   - sugar industry
   - dried fruit industry
   - milk industry
   - dairy industry
   - canned vegetable industry
   - biscuit industry
   - snack food industry.

Taking it further

4. Over the past fifty years there have been many technological developments in the preservation of food. Select one of the following developments and research how it has affected the food available in Australia:
   - modified atmospheric packaging
   - freeze drying
   - aseptic packaging
   - microwavable meals
   - dual-oven heating trays.

Chapter review

Looking back

1 Identify and describe two native foods. Investigate how each is grown, harvested and prepared for use in Australia today.

2 Explain why Indigenous Australians were healthier prior to European settlement.

3 List the foods that the early settlers consumed.

4 Outline why meat was preserved and the process used to preserve it.

5 Explain why the Europeans struggled to cultivate a healthy lifestyle.

6 Discuss how migration and travel have affected the range of foods now available in Australia.

7 List the ethnic origins of different restaurants in your suburb or closest town. Which are more popular? Why do you think this is the case?

8 Explain, using examples, how the mass media influence food consumption patterns.

9 Provide one example of how a person's economic position can influence their food choice.

10 Provide examples of the impact of migration on Australian cuisine.

11 List the cooking methods in use today that have come about because of immigration.

12 In what ways do social practices influence what is consumed today? Think about your own social practices and outline how they affect your food choices.

For you to do

13 Using the internet research the following:

- Identify five native foods eaten by Arrernte people in their region.
- Identify a honey-like food that could be used as a sweetener.
- Organise for a representative of the Arrernte people to visit your classroom. Ask them to translate this fact sheet for you in Arrernte.
- Prepare a range of questions that you can ask your visitor so that you gain a better understanding of this chapter.

14 Research a famous Australian restaurant and investigate the foods that are included on their menu. Can you identify what influences the choice of foods they present to their customers?

15 If you were the owner of a new restaurant that served modern Australian cuisine, what would you name it and why?

16 Using the website link, visit the Parents Jury website and investigate the regulations about Australian TV advertising. After reading through this, reflect on what you have learned in this chapter and explain what future action needs to be taken by the regulators.

Web Destination

17 Brainstorm some tips that could be used to reduce a child's exposure to food marketing.

18 Research a recent technological advancement and investigate how it has affected food and its development. Present your findings in a newspaper article.

19 Explain the impact of the following factors on current food consumption patterns:

- social factors
- economic factors
- nutrition factors
- environmental factors.

Chapter review

20 Outline the social changes that have led to Australians eating more meals away from home and more convenience meals.

21 Research the food rituals, taboos and laws of the Islamic religion.

Taking it further

22 Conduct an accompanied excursion to a national park or local bush food trail to view and taste-test Australian bush foods. As a class, identify the foods that can be grown and included in your current diets.

23 Investigate the significance of food in traditional Aboriginal culture. Prepare an oral or PowerPoint® presentation about the technologies used by Indigenous Australians for collection and preparation of their food.

24 Discuss why many Aboriginal Australians continue to eat traditional bush foods.

25 In small groups, plan a day's menu for an adult male Indigenous Australian who lives on the coastline of Australia. Use the internet to check your answer.

26 Predict the aspects of Australian life that would be different if Australia had been colonised by a country other than Great Britain. In groups of three, brainstorm examples. Design a poster highlighting what life in Australia might have looked like today.

27 Visit your local shopping centres and list all of the restaurants, takeaway and fast-food establishments. Consider how you would describe Australian cuisine in your own town or city. Compare your description with those of your classmates.

28 Select one food product that you regularly consume and determine how far it has travelled to get to you. Do you think it is an environmentally sound choice? Will you continue to include this food in your diet?

29 Select one cultural group in Australia.

- **a** Research the types of traditional foods served.
- **b** Explain how this culture has influenced food preparation techniques and the foods eaten in Australia.
- **c** Outline the availability of food from this culture in Australian supermarkets.
- **d** List the foods from this cultural group that have become takeaway and fast foods.
- **e** With a partner, select and prepare one of these foods.
- **f** Using a nutritional database, analyse the nutritional value of the food you have prepared.

Chapter 4

Fare's fair

Focus area: Food equity

There is enough food produced in the world to feed everyone—the problem is that it is not distributed evenly. Why is it that developing countries continue to suffer from hunger, while in developed countries diseases associated with too much food are common? This chapter investigates the factors that contribute to this unequal distribution in Australia and around the world. These factors include the balance of international trade, the distribution of food between those who 'have' and those who 'have not', and the impact of difficult geography, poor roads and unstable political situations.

Chapter outcomes

In this chapter you will learn about:

- circumstances that cause food inequity
- groups who may experience food inequity in Australia and overseas
- the factors influencing food availability and distribution
- food production practices
- the physical and social cost of malnutrition
- providing aid
- support networks for groups experiencing food inequity.

In this chapter you will learn to:

- explain the circumstances causing food inequity
- identify groups at risk of food inequity locally and globally
- recognise the relationship between food availability and distribution, and food equity
- examine food production and distribution on a global scale
- describe the consequences, including diseases, associated with malnutrition
- identify the role of aid agencies
- design, plan and prepare meals appropriate to specific circumstances
- examine a group that experiences food inequity and investigate support networks available.

4.1 The reasons for food inequity

global: relating to the whole world

finite: having bounds or limits—many natural resources are available in fixed amounts and, once used, cannot be replenished

sustained: kept going—some water-use practices will not be able to continue because the water source will simply run out

subsistence farmer: farmer providing only enough produce to meet their family's food needs

There are approximately 1000 million farmers in the world. Only 50 million of these farmers live in industrialised countries.

4.1.1 The production of rice is possible only in warm climates with reliable rainfall.

Food inequity is a **global** issue—not just a problem for underdeveloped countries. There are a number of reasons for this inequity.

Access to continuous and safe water

Clean water is a **finite** resource. There is a fixed amount available that cannot be increased, but it is under threat from overuse and pollution.

Human health is dependent on the availability of clean water in sufficient quantity, and safe, sanitary conditions. Poor hygiene and unsafe water lead to the quick spread of diseases. Children suffer the most from these diseases. Some diseases are water-borne, caused by drinking water that has been contaminated by faeces. This often occurs where conditions are unsanitary, or after a natural disaster such as flood, in which sewage treatment works are damaged. Water-related diseases are caused by insects that feed or breed in water, such as malaria, which is carried by mosquitoes. Water-based diseases are caused by parasites that spend part of their life cycle living in water, such as guinea worm, which infects people who drink the infested water.

Water supply is crucial to food production. Irrigated land is twice as productive as crop land relying on rainfall alone. One-sixth of the world's irrigated crop land produces about one-third of the world's food. One serious global issue is the irresponsible use of fresh and groundwater for irrigation in a manner that cannot be **sustained**.

Access to water is crucial. Without an adequate water supply, factories that depend on water may have to close temporarily, crop yields may decline, sick workers may be unproductive and fisheries may be destroyed. In countries with limited water supplies, women and children spend many hours a day carting water, and so have less time and energy to grow food, earn an income or gain an education.

Availability of safe and nutritious food

Eighty per cent of farmers in developing countries are small farmers growing food for their families, perhaps with a little left over to sell. Many of these **subsistence farmers** are women.

Food security means:

- food availability—that is, there is sufficient food available for all people in a country
- food access—that is, households and individuals have adequate resources (such as money and transport) to obtain appropriate foods so that elderly people, children, isolated and disabled people do not miss out
- food utilisation—that is, people receive good nutrition from food. This requires knowledge about food processing, storage and preparation as well as access to safe drinking water
- building up assets—that is, assets can belong to a family or community and may include grain stores, tree nurseries or savings for difficult times.

4.1.2 All members of the community must have equal access to appropriate nutrition to have food security.

Hands on

Simulated farming

Purpose

To experience the plight of farmers who rely on rainfall to irrigate their crops, rather than artificial irrigation. This activity may be done in pairs or as a class.

Note: You may need to wait up to six weeks for the results of this exercise.

Materials

two plastic pots: potting mix and garden soil to fill one pot each; seeds such as corn, wheat, herb or vegetable; small amount of liquid fertiliser

Steps

Plant according to the directions in the table.

Monitor the progress of the seeds in both pots and record your observations weekly. You could include measurements when the shoots appear.

Pot A	Pot B
1 Fill with garden dirt.	**1** Fill with purchased potting mix.
2 Plant a small number of seeds when rain is expected.	**2** Plant many seeds.
3 Cover with a small amount of dirt.	**3** Cover with a small amount of dirt.
4 Leave in a sunny spot to be watered by the rain.	**4** Water well and place in a sunny spot. Water well as necessary, perhaps every second day if rain is not expected or the temperature has been very high.
5 Observe for three to four weeks.	**5** Observe for three to four weeks.
6 Leave nature to care for the seeds.	**6** Fertilise when shoots appear.

Activities

1. Make some hypotheses early in the experiment. What do you expect to happen? Why? Note your conclusions after four to six weeks.
2. Was there a distinct difference in results? How did your results match up with your early hypothesis? How do you explain this?
3. What parallels can you draw with the experience of people growing crops in the developing world?

Australians use a million litres of water per person per year, while those in water-scarce places such as the Middle East have access to less than 1000 litres per person per year.

4.1.3 Increased knowledge about the vast benefits of breast-feeding may have lessened the influence of powerful advertisements for infant formulas in developing countries.

PP Web Destination

Meeting food needs

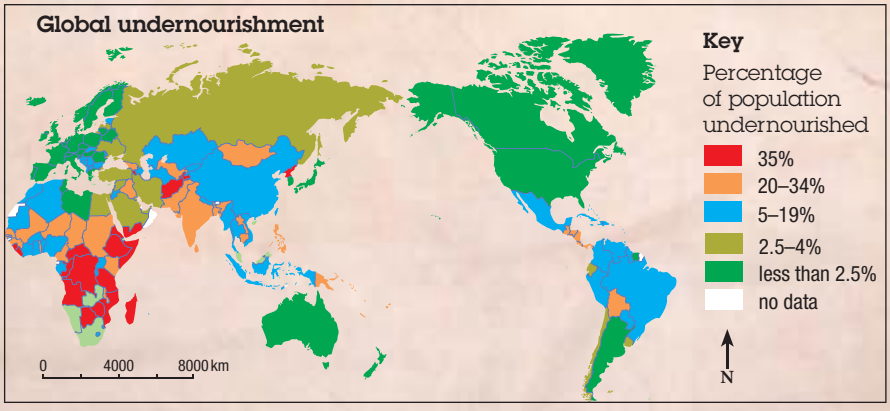
The wealth of a country is measured by its Gross Domestic Product (GDP). This is calculated by adding up the dollar value of all the goods and services produced by the country in a year. The average income of a country's citizens is calculated by dividing GDP by the size of the population. Countries with an average income of more than A$20 000 per person per year are regarded as high-income countries, while the poorest countries are those where the average income is less than A$1500 per person per year.

Obviously, the wealth of a country is not divided evenly among the population. In every country there is an income gap between the richest and poorest.

Families' and individuals' access to financial resources determines their ability to obtain the food that they need. The ability to earn an income is dependent on:

- health
- skills
- education
- resources such as land to farm, money to buy seeds, tools and equipment for farming
- transport to get to the place of work or to go to markets to sell produce.

In the poorest countries, access to many of the above is dependent on the availability of safe water.



4.1.4 Compare the percentage of undernourished people in Australia to the percentages in other Asia-Pacific countries. What do you notice?

Selection of food

Education is highly regarded in developed countries such as Australia, where people are required to obtain a basic education before they can legally leave school to join the workforce. Young people in other countries are not so lucky. Many of them have to work from an early age to help support their families. Their education is therefore limited, with the result that there is a high rate of illiteracy among this group.

Lack of nutrition education can lead to groups in the global community making poor nutrition choices. An example of this is the marketing of infant formulas in sub-Saharan Africa. The makers of some such formulas devised a persuasive advertising campaign that led to mothers in developing countries to reject the nutritional quality of breastmilk in favour of powdered alternatives.

Families sacrificed hard-earned money to purchase formulas with labels they could not read or understand. Often the formula was mixed in incorrect amounts using unsterilised bottles and contaminated water. Sometimes, less powder was deliberately used to make a can of expensive formula last for more feeds, thereby diluting its nutritional value. Subsequently, the numbers of infant deaths rose.

Nutrition education in Australia comes from many sources, such as the dietary guidelines (see Chapter 2).

Your Food Technology education gives you the ability to make good food choices, and your ability to cook gives you control over your nutrition—you know what you are eating because you prepared it.

4.1.5 Underweight vs. overweight countries

Country	Proportion underweight (%)	Country	Proportion overweight (%)
Bangladesh	56	United States	55
India	53	Russian Federation	54
Ethiopia	48	United Kingdom	51
Vietnam	40	Germany	50
Nigeria	39	Colombia	41
Indonesia	34	Brazil	36

RECIPE

ORANGE AND CHICKPEA COUSCOUS p. 313

Looking back

1. List three consequences of having insufficient clean water.
2. Define the terms 'water-borne disease', 'water-related disease' and 'water-based disease'.
3. Why did breast-feeding mothers in poor countries switch to formula milk? Why was this a dangerous choice?
4. Describe the kinds of farming activities your family might engage in if they were subsistence farmers with little available income to buy food.
5. List five circumstances that lead to food inequity. Choose one and write a paragraph explaining it. Include an Australian example.

For you to do

6. Conduct a survey of your class to determine the average time (in minutes) spent in the shower by each person.
7. Assuming that the average shower uses 30 litres of water per minute, how many litres of water in total does your class use for showering daily?
8. Brainstorm ways of using this water more efficiently—other than having shorter showers!
9. Write a story from the point of view of a mother in a developing country trying to decide whether to purchase infant formula or continue breast-feeding.
10. Think about your local suburb or nearest town. List all the community assets that would be available to you and your family in a time of crisis, for example emergency services, charitable organisations.

Taking it further

11. Investigate ways in which household water may be used more than once. Consider:
    - rinse water from the washing machine
    - water from the bath or a toddler's pool
    - washing-up water
    - water that runs from the shower until the temperature is right.
12. Does your school canteen have a policy regarding the foods sold? Ask your canteen director which food lines are the top sellers. How does this match with the Healthy Eating Pyramid?
13. In 1996 at the World Food Summit, governments set target to halve the number of hungry people in the world by 2015. Write to your local member, asking what Australia is doing to contribute to this goal. Seek out statistics to determine whether the number is falling, and if so, how rapidly.

UNIT REVIEW

4.2

Groups who may experience food inequity

4.2.1 The presence of an Aldi supermarket generally means more competitive pricing among the other supermarkets in the same area.

PP Web Destination

Food inequity is not the experience of poor countries alone. There are also people living in countries such as Australia who do not have access to food and nutrition education.

Rural and isolated

Australia is a big country and transportation of food is a major consideration in remote areas.

Consider the findings of the now scrapped government website Grocery Choice. It found in an independent price survey of thirty-five items that the total cost could vary from $123 to $135, depending on where you lived. Cheaper prices were found in areas of more competition, close to or within a major city and in larger supermarkets, as they could buy in bulk. The results showed that some foods were substantially more expensive in rural areas (up to 75 per cent more expensive in very isolated towns) and the most remote areas had the least variety in grocery and fresh produce lines. In many cases, the quality and variety depended on the day on which consumers made their purchases, as some towns had deliveries of fresh fruit and vegetables only once a week.

People on low incomes

Low-income earners and particularly people on government benefits may be at risk of poor food equity as their financial commitments dictate the priority of their spending. People on low incomes need to prioritise their spending. Bills such as rent are fixed amounts, and utilities such as electricity and gas are essentials, whereas the budget for food is flexible and so is purchased with whatever money is left over.

Women and children

Women in many countries are the primary care-givers to children. In poor countries, women are victims of injustice and discrimination and have fewer opportunities for self-improvement. In many cases they are poorly educated and carry an enormous burden of work.

Consider the plight of women in Ethiopia. In Likimsi, a large rural community, women are responsible for water collection. The nearest river is miles away, so the daily walk for water becomes an exhausting six-hour trek. When famine and drought hit Ethiopia in 1984, water sources started to disappear and water collection took up increasing amounts of time. Hence there was less time to cook, clean and care for sick children.

Women play an important role in the well-being of children. Young children are reliant on their mothers for nutrition, particularly when being breast-fed and those women must be healthy and have access to education, training and financial resources to perform this role well.

4.2.2 Women in many developing countries are responsible for caring for children, collecting water and firewood, and working on the family farm.

RECIPE
LAMB BURGERS
p. 314

CORE
UNIT 2.9

FOOD IN FOCUS

Committee calls for more funds for remote stores

Meredith Griffiths

In November 2009, a parliamentary committee reported on their year-long investigation into community or outback food stores. The investigation was conducted in response to the dire health status of Indigenous Australians. Chair of the committee, Bob Debus says that:

'The statistics are just awful. Indigenous Australian adults are twice as likely to be obese as non-Indigenous Australian adults. The incidence of end-stage renal disease in remote areas of Indigenous Australia is 20 times higher than it is for the rest of Australia. [W]e know that a substantial reason for that horrifying health gap is the absence of nutritious foods.'

The committee has called on the federal government to do more to ensure Indigenous Australians have access to fresh food.

The committee found that local stores could play a key role in improving the welfare of people in remote communities by selling healthy food. The committee has developed 33 recommendations for change, the most important being that the government set up a national office to coordinate the food supply chain so that remote communities can receive fresh food every week. Supply was perceived as the biggest hurdle to availability of fresh food and contributed significantly to the cost of food.

The committee has also suggested that the government establish an infrastructure fund to help remote community stores buy equipment such as refrigerators.

Another recommendation includes reviewing other programs such as Outback Stores to assist stores that cannot run at a profit. This means that there are two ways remote stores can run—as a business (stores in larger communities) and subsidised (stores serving the needs or the most remote or smallest communities).

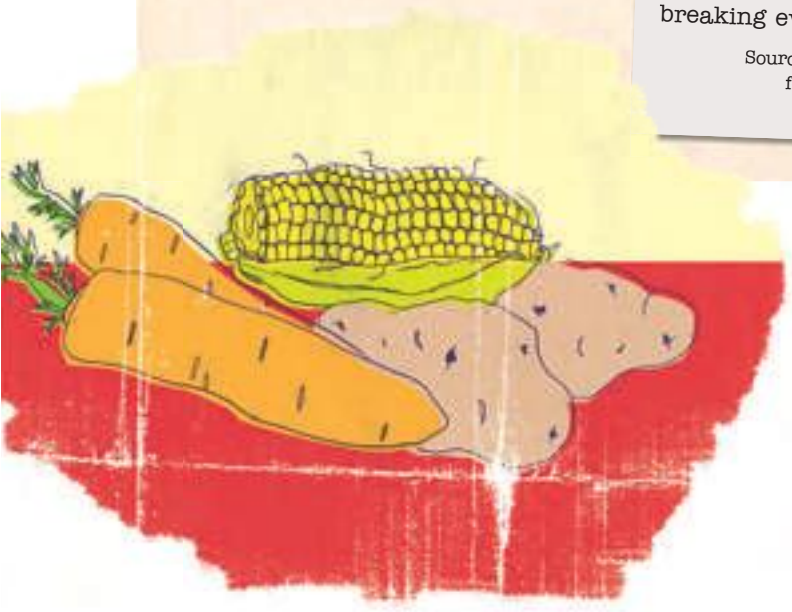
Debus notes that 'some of the stores are nevertheless simply ensuring that there is food security in very remote places without actually making a profit or even breaking even'.

Source: Adapted from 'Committee calls for more funds for remote stores', ABC website, 2009

Activities

1. Outback stores generally are the only source of food and groceries for a community. If you were running a community store, list the compulsory food items you would stock.
2. Why did the committee recommend that the government assist stores to purchase refrigerators?
3. Why would some of the very remote stores struggle to make a profit?

Women perform two-thirds of the world's work; grow half of the world's food; earn one-tenth of the world's income and own 1 per cent of the world's property.



People with disabilities

Disabilities can range in effect from mild to severe. People with disabilities can be of any age and may live alone, with a family, or in an institution. Disabled people have special needs according to their level of ability, mobility, literacy and general well-being. The situation of disabled people may be further compounded if they are aged, living in an isolated area, living in a poor country, or if they have little or limited financial resources. Disabled people may experience food inequity due to their inability to see, read or understand instructions. They may be limited in their mobility so cannot make food decisions independently, or they may live in institutions where others make food decisions for them.

Aged people

Aged people are also at risk of food inequity. They may be less able to shop or cook for themselves, or may be dependent on others making these decisions for them, for example people in nursing homes. Many such institutions, as well as those that cater for young people, such as day-care centres, have meal and diet policies for good nutrition.

Elderly people are further at risk of poor food equity if they:

- suffer from Parkinson's disease
- suffer from Alzheimer's disease
- suffer from the after-effects of a stroke
- are housebound after fracturing a hip or have some other disability
- have difficulty chewing and swallowing
- are socially isolated or on small, limited incomes.

Hands on

Making a packet cake by guesswork

Purpose

To gain some understanding of the difficulties faced by those who cannot read.

Materials

You will be supplied with a packet cake without instructions. You must also choose any quantity of any of the following ingredients to make your cake:

- eggs
- butter
- water
- oil
- milk.

Steps

1. Set your oven on what you think will be an appropriate temperature.
2. Select your additional ingredients. Record all your decisions, including ingredients chosen, quantities and order of combining.
3. Mix the cake by hand or electric mixer. Record the time taken.
4. Select a cake tin. Record the size and shape. Pour in your mix.
5. Bake. Record the time taken until cooked.

Tip
The cake is cooked when a skewer inserted into the centre comes out clean.

Activities

1. Evaluate your result in terms of appearance and taste.
2. Describe how it felt to guess the unknown factors such as ingredients, times and temperatures.
3. Write a paragraph to explain how being unable to read would limit the opportunities for an individual to achieve food equity.

4.2.3 The nutrition of the elderly can improve when they do not have to prepare meals for themselves.

Indigenous Australians

Indigenous Australians have the poorest health statistics of any group in Australia. This can be linked to the destruction of their traditional lifestyle. Indigenous people experience social isolation and financial disadvantage in the community and this leads to poor food equity.

The traditional hunter-gatherer lifestyle resulted in a diet characterised by variety in plant and animal foods, lean meat, fish, low salt, little added sugar and alcohol. This, combined with regular physical activity, produced a good life expectancy. Today, common nutrition-related diseases in the Indigenous community include obesity, diabetes, hypertension, coronary heart disease and dental cavities. These diseases are all directly related to the adoption of a more expensive, Western diet.

Chronically ill people

Approximately 10–20 per cent of children have a **chronic** or recurring illness such as asthma, chronic fatigue syndrome, diabetes or eczema.

Some children are born or develop severe food allergies. Ingredients in certain foods can trigger these allergic reactions. The most common are peanuts and other nuts, seafood, dairy foods and gluten (contained in flour). Severe reactions cause life-threatening anaphylaxis—so much so that many schools have become 'nut butter free' for the safety of these students. Chronically ill people may experience food inequity as a result of restricted choices or a lack of energy to prepare foods.

People with dementia

Alzheimer's disease may cause **dementia**. Dementia is common in Parkinson's disease sufferers and it can be alcohol-related. Dementia is also related to other conditions.

In simple terms, dementia causes an individual to progressively lose the ability to do familiar tasks. Dementia sufferers are unable to perform even simple tasks, such as using the kettle or toaster, or to create even the simplest meals, such as an omelette or toasted sandwich. Many dementia sufferers rely on Meals on Wheels or residential respite care for their meals.

chronic: constant, continuing for a long time

dementia: mental disorder that leads to a loss of mental ability

4.2.4 Adoption of a Western diet and the loss of traditional foods and methods of cooking have contributed to a deterioration in Aboriginal health.

FOOD IN FOCUS

‘Children healthier’ under welfare quarantining

Sarah Everingham

A controversial program involving quarantining part of welfare payments for food seems to be improving the general health of indigenous children.

Compulsory income management was introduced in Northern Territory Indigenous communities as part of the Federal Government’s Northern Territory intervention program. Welfare quarantining requires that fifty per cent of income is quarantined for essential items such as food. The latest research into the impact of the scheme was carried out by the Australian Institute of Health and Welfare and released by the Federal Government.

‘It certainly finds that more than half of the parents interviewed reported that their children were eating more, weighed more and were healthier, so there are certainly positive findings from this latest evaluation,’ Indigenous Affairs Minister Jenny Macklin says. Last month the Government announced plans to roll out the system of income management to non-Indigenous people in the Northern Territory and then to other disadvantaged parts of Australia. It was the Government’s way of making the federal intervention non-discriminatory. It also announced some changes to the scheme. Most people on the age and disability pensions will be exempt, and that means pensioners in Territory Indigenous communities who have their income managed will move off the scheme. Andrea Mason is from the Aboriginal NPY Women’s Council, which covers the cross-border region of the Northern Territory, South Australia and Western Australia.

‘Our directors are saying, in our region people who are aged and who have disabilities are the most vulnerable people in communities and there is an ongoing challenge with those clients managing their money to ensure that they getting food regularly,’ said Ms Mason.

‘They are often targeted by family or other members of the community and their basic needs often don’t get met.’ The women’s council says it wants compulsory quarantining for people on the age and disability pensions in the cross-border region.

Source: Adapted ‘“Children healthier” under welfare quarantining’, ABC website, 15 December 2009

Activities

1. Why do you think the income quarantining is working? Why do you think the program was introduced?
2. Why do you think the government is considering aged and disability pensioners off the scheme?
3. What does Andrea Mason mean when she states that people on disability or aged pensions ‘are often targeted by family or other members of the community and their basic needs often don’t get met’?
4. What are the negative aspects of this scheme? Would you like your income quarantined?
5. How do people learn to manage money? What information is available to you on budgeting and spending money wisely?

Alcohol and drug abusers

Alcohol abuse is a serious health problem in Australia. Alcohol is a neurotoxin, which means it poisons the brain. Alcohol interferes with the absorption of Vitamin B and contributes to the poor food equity that individuals who are alcoholics frequently experience. A person who abuses alcohol to excess places a priority on having a drink over a meal. Poor nutrition also contributes to elevated blood alcohol levels.

Abuse of **illicit** drugs causes a range of diet-related reactions. Use of amphetamines contributes to a loss of appetite that can eventually result in malnutrition. Cannabis is a depressant, but causes an increase in appetite, and a feeling of nausea. Ecstasy was originally developed to suppress appetite. Serious use of ecstasy can cause malnutrition or dehydration, leaving the user with excessive thirst.

Homeless people

Homeless people have no fixed address. They may be of any age or either sex, living in short-term crisis accommodation or on the street. Some obvious causes of food inequity for this group are the lack of income and irregular or incomplete meals. Many crisis accommodation venues such as hostels do not have cooking facilities for residents, and frequently homeless people are evicted from these places, as they suffer from alcoholism and cannot abide by the drinking bans.

Some homeless people are displaced people who find themselves involuntarily outside the boundaries of their country. This may occur due to war forcing people from their homes and over country borders. Many **refugees** arrived in Australia from Vietnam in the 1970s by boat, fleeing their war-torn homeland.

Displaced people are at risk of poor food equity due to their difficult circumstances. They may be in a foreign country with no money, very few possessions and possibly in a crowded camp.

Many factors contribute to the ease with which food is available or the circumstances that make distribution easy or difficult.

illicit: unlawful or not permitted

Fifty per cent of the Australian population drinks alcohol at least once a week.

refugee: person who flees for safety to another country

What do all these standard drinks have in common?

4.2.5 Overconsumption of alcohol can have serious implications for the health and nutrition of individuals.

Hands on

Design and make a survival biscuit

Purpose

To create a high-protein survival biscuit similar to those in army ration packs. They are designed to act as a meal supplement and are commonly distributed in refugee camps in times of crisis.

Materials

flour: self-raising or plain, wholemeal or white

powdered milk

sugar

butter or oil

baking powder

water

Steps

1. Working in pairs, design a high-protein 'survival biscuit' suitable for transport to starving people in East African refugee camps.
2. Experiment with combinations and baking times. Submit the packaged product and recipe card.

Activities

1. How does your biscuit taste?
2. Have one of your biscuits for lunch in place of your regular meal and evaluate how much it satisfied your hunger. How effective would your biscuit be as a survival food?

UNIT REVIEW

Looking back

1. Why can food transport in Australia be difficult?
2. Why does low income contribute to food equity?
3. Create a mind map to illustrate the reasons for women, children, people with disabilities and aged people being at risk of food inequity.
4. Explain how the combination of factors such as being aged and living in an isolated area may compound an individual's disadvantage.
5. List three reasons why Indigenous Australians may experience food inequity.
6. Explain how illness, drug or alcohol abuse can cause food inequity.

For you to do

7. List the reasons for groceries and fresh foods being more expensive in rural or isolated areas.
8. Design an instruction leaflet to be inserted into a packet muffin box to assist those who have difficulty in reading or cannot read English.
9. In groups, design a fact sheet for each group who may experience food inequity. Use your own research to develop the information here further.

Taking it further

10. As a class, compile a 'basket of food' shopping list and price these goods at your local supermarket or store.

Influences on food availability and distribution

4.3

Many factors contribute to the ease with which food is available or the circumstances that make distribution easy or difficult.

Geography and climate

Geographical conditions and climate dictate the crops that a country can grow successfully. Geography also determines how easily or how quickly these crops can be transported to factories for processing, to markets for sale or to ports for exporting. The kinds of foods grown and therefore available in wealthier countries vary greatly from those available in poorer countries.

Globally, **staple foods** are basic foods that a population eats regularly and in large quantities, as the basis of the diet. They tend to be cheap and easily obtained. Many countries grow staple foods that are best suited to their climatic conditions.

Wheat, rice, maize, millet, cassava and sago are staple foods.

Wheat

Wheat is grown throughout the world. It is the most popular cereal grain produced. Different types of wheat are grown, depending on the climate, the seed used and the end-product desired. For example, soft wheat is best for biscuits and cakes, as it makes fine flour, while hard wheat is more suitable for bread and pasta. In developed countries, wheat-growing is highly technological, with the grain being harvested by machine. In developing countries, wheat is harvested (using tools called sickles) and further processed by hand. Wheat is not used as a grain food in seed form, but is ground into flour. It can be used to make porridge or couscous (as in North Africa); leavened or risen products such as bread; unleavened products such as tortillas or pitta bread; and pasta or noodles.

Rice

Rice is primarily grown in Asia, although other countries such as Australia have an expanding rice-growing industry. Growing rice requires lots of water—it may be grown in swamps known as rice paddies, or on dry land that is flooded with water during the growing stage. Harvesting is similar to that of wheat—highly technological in developed areas and highly labour-intensive in less developed areas. Rice may be eaten as a grain, ground into flour, or made into rice noodles.

Maize

Maize is grown either as sweet corn, which we know as corn on the cob, or as field corn, which is harvested to be ground into flour. This second type of maize may be processed or milled by crushing the grain using a mortar and pestle. The by-products of this milling process may be fed to animals. Maize is used to make polenta, corn tortillas and cornflakes.

Millet

Millet is a hardy crop that will tolerate extreme weather conditions such as poor rainfall and soil of an inferior quality. The grain is ground and used to make a porridge (called gruel) or breads. Millet may also be used to make straw-like brooms or brushes.

Cassava

Cassava is a staple food that is not a grain but a tuber, harvested from under the soil much like a potato. It is grown in the poorest parts of Africa, as it is reliable in all sorts of climatic conditions.

Sago

Sago, or tapioca, is a food product made from the sago palm. The spongy centre of the plant stem (known as the pith) is removed and shaped into small pellets. This plant is grown in tropical areas.

4.3.1 Staples such as these are processed to make pasta, flour and other products.

staple food: basic food that a population eats on a regular basis and in large quantities

RECIPE

CORN TORTILLAS
p. 315

Two-thirds of the world's population have access to less than one-third of the world's food.

PP Web Destination

4.3.2 Some of the best wheat in the world is produced in the 'golden triangle', an area bounded by Moree, Goondiwindi and Warialda.

hectare: 10 000 square metres or 2.47 acres.

Farming in Australia

In Australia, 11 per cent of farmers grow crops as their major source of income. Wheat covers the largest area, with approximately 12.2 million **hectares** of Australian land dedicated to its production. The largest proportion of this area is in Western Australia, followed by NSW.

Canola, a plant with a yellow flower, is becoming increasingly popular in Australia. Its seed is crushed and converted to oil and used in food manufacturing in Australia and overseas. At present, around 2 million hectares of land are used to grow canola, producing approximately 1 million tonnes of canola oil seeds.

Other significant crops in Australia include:

- rice, grown in Leeton and Griffith, NSW, in the Murrumbidgee irrigation area because of the need for access to a good water supply
- fruit, grown throughout Australia with different geographical areas specialising in different types. For example, in NSW, grapes are grown primarily in the Hunter Valley, apples in cool climates such as Batlow and Orange, and cherries in Young in the south-west of the state.

Most farmers in Australia are engaged in beef cattle farming—24 per cent of all farms raise beef cattle.

A wide variety of cattle are raised in Australia, and each type is chosen for its suitability to the geographic location and climatic conditions of the farm. For example, Brahman cattle are commonly raised in the northern part of Australia because of their ability to endure extreme temperatures that species such as the Hereford do not handle as well.

Currently in Australia, there are approximately 24.4 million of head of cattle and calves raised for beef and veal. Feedlot production is an increasingly popular method of fattening cattle for periods of three to twelve months by feeding them high-protein food. This method is commonly used to produce beef for the Japanese export market, as it results in meat that is marbled with fat distributed evenly throughout the muscle tissue.

Dairying is a smaller concern in Australia, comprising 1.7 million head of cattle raised for milk production. Jersey cows are particularly well suited for this purpose. Victoria has the highest proportion of dairy farms in Australia.

Sheep are raised in a wide range of climates. There are currently approximately 85 million sheep and lambs grazing in Australia. Sheep are bred for meat or wool or both. Lambs are raised for meat in geographic areas that enjoy high rainfall and good pasture for grazing.

There are about 2.1 million pigs in farm production in Australia. Pig farming is an intensive, indoor production that tends to be expensive due to the high cost of grain feed. For this reason, pig farms are often located close to major grain-growing areas.

RECIPE

SAGO CUSTARD AND PEACHES p. 316

COCONUT AND PASSIONFRUIT RICE p. 317

4.3.3 Australia has a long history of farming sheep for wool and meat.

Religious and cultural beliefs

Animal products are not generally regarded as a staple food for people of developing nations. Ownership of animals is usually associated with wealth or prosperity, and animals are the belongings likely to be sold first when poverty hits. Another reason why animal foods may not be staples in some countries is because of widely held religious beliefs. For example, the eating of beef is forbidden for Hindus; the eating of pork or blood is considered unacceptable to Muslims or Orthodox Jews.

Socio-economic status

Socio-economic disadvantage may result from poor education levels. This may be seen in poor levels of literacy or general lack of nutrition knowledge, both of which may lead to poor food choices. Lower education levels may mean lower paying employment, with the result that food choices become limited due to a shortage of available funds.

Studies have shown that there is a strong relationship between socio-economic disadvantage and poor health. Poor nutrition is directly related to low income.

All the world's five major religions prohibit consumption of some food either completely or on certain days of the year.

Three-quarters of those who do not have enough to eat live in rural areas.

Hands on

'Rich man, poor man' feast

Purpose

To explore the difference between the 'haves' and the 'have nots' and what it feels like to be a member of one of these groups.

Materials

a favourite food, for example chocolate or pizza, enough for one-quarter of the class

cooked rice to feed three-quarters of the class

coloured paper in two colours (75 per cent one colour, 25 per cent the other); tables set with tablecloth, crockery and cutlery

Steps

1. At the beginning of the lesson, collect a coloured piece of paper from your teacher.
2. One colour group (the largest group) sits on the floor with a bowl of rice to share and a cup of water for each group member.
3. The other colour group sits at a table set with a tablecloth, crockery, cutlery, glassware and their favourite food to eat.

Activity

During and after the meal, discuss what you thought and felt about the experience of being in your colour group. How fair was it?

tariff: tax on imports so that locally produced goods become less expensive by comparison

PP Web Destination

The world's most valuable agricultural crop is coffee beans. Brazil is the principal coffee grower in the world.

4.3.4 Fairtrade coffee actively supports farmers who produce products that might be swamped in a competitive global market.

Globalisation

Globalisation is the international movement towards a global economy where national borders cease to matter. It includes the globalisation of trade, as a world market is created through freer trade practices, and the globalisation of production, as large multinational corporations set up factories in many different countries.

In practical terms, globalisation means that there is a free movement of goods between countries. The advantage of globalisation is that it encourages competition, allowing consumers everywhere the opportunity to choose from a variety of products at competitive prices. Globalisation also has its disadvantages. Countries are limited in the actions they can take to protect their own industries, as strategies such as restricting imports or placing **tariffs** on them to force the imports to sell at a higher price become less acceptable.

Globalisation has left some poorer countries vulnerable. It has destabilised agriculture-based economies and added some barriers to food security in some places.

Additionally, globalisation has broadened consumer tastes. For example, in developed countries, demand has shifted from mass-produced coffee to specialty beans, and from processed to fresh vegetables. This trend benefits small, flexible suppliers who can actually access these markets for these consumers.

4.3.5 Flooding results in not only isolation, but also the risk of water contamination.

Natural disasters

Natural disasters such as flood or drought are impossible to plan for, but developed nations generally have resources available to enable them to cope. Developing countries are trying to plan for the unexpected by building up grain stores and saving money to purchase foods or crops destroyed by disaster.

War

Just as war can cause hunger, hunger can cause war. Economic and social inequality that denies people the money, land or skills they need to feed their families can lead them to take up arms.

In times of war, aid agencies endeavour to assess the needs of those affected, particularly civilians caught up in conflict or forced from their homes. People who are displaced from their homes are removed from their normal activities, such as working to earn an income. Refugee camps are often set up in safe areas but getting food aid to these areas can be tricky. In some areas, such as Angola, food relief for persons displaced by conflict is made difficult by the remoteness of many refugee camps and the state of disrepair of the nearest airport to dispatch the food aid. Security for the aid workers is paramount, and the food must reach those for whom it was intended. Many children become malnourished as a result of war—these children are the priority for food aid.

Educational levels

Education is crucial to providing knowledge about the availability of food. There are specific pockets of metropolitan Sydney with special needs in this regard.

FOOD IN FOCUS

Food processing industry doing it tough

Bruce Reynolds

The Cowra cannery was constructed during the Second World War to supply tinned product to the US troops in the Pacific war.

It was then run as a domestic and export cannery and closed in the late 1980s. It was reopened by local growers as a **cooperative** and then taken over by the Windsor Farm Group in the late 1990s.

Michael Leahy, Windsor Farm Group general manager, says the cannery has had the challenge of finding suppliers of products it can process this year as the drought makes water scarce. He says the company has had to source product from as far away as the Melbourne basin to meet demand.

Mr Leahy says the cannery is also fighting a battle over the dumping of products into Australia. He says the company won the dumping case, but it is under appeal. Mr Leahy says they are asking the Federal Government to speed up the dumping investigation process.

Local vegetable producer Brian Delaney says this year has been extremely hard for the local industry, as low rainfall has made it hard to grow crops and water is very expensive. He is the last asparagus producer, with one acre sold on the fresh market—and he used to grow 150 acres of the crop and employ 150 pickers for three months a year. Mr Delaney says imports and the rising cost of production have seen the industry collapse.

Ed Fagan, a local grape and lamb producer, says it has been very hard this season. They have had more than 2100 lambs this year, which have been weaned but as yet haven't been sold. They are weighing up whether it is economically feasible to feed them or offload them at this stage.

Mr Fagan's family also owns a vineyard operation. Just over a week ago a frost in the vineyard did a lot of damage. Some local producers lost up to 20 per cent of their crop.

Source: Adapted from 'Food processing doing it tough', ABC website, 16 November 2006

Activities

1. What do you think is meant by 'the cannery was reopened by growers as a cooperative'?
2. What are 'dumped products'? Why are they a threat to the Cowra cannery?
3. What is stated as the cause of the collapse of the asparagus industry?
4. Why does Ed Fagan have trouble deciding whether to feed or sell his weaned lambs?
5. Describe the negative effects of unexpected weather events on farming operations.

4.3.6 Refugee camps are often crowded and food availability is critical.

cooperative: type of business established by individuals who join together for a common benefit; in NSW cooperatives are common in the fishing, dairy and fruit-processing industries

FOOD IN FOCUS

Eat It To Beat It

Evidence suggests a link between cancer and lifestyle factors, such as poor diet and being overweight. Cancer Council NSW's Eat It To Beat It program, launched in the Hunter region, is aimed at developing awareness of the importance of increasing fruit and vegetable intake to help prevent cancer and other lifestyle diseases such as coronary heart disease and obesity.

The Eat It To Beat It program is anticipated to become Cancer Council NSW's flagship nutrition program to reduce cancer risk. If the program is successful, it may be offered to other Cancer Council regional offices in NSW.

The program targets parents of primary school-aged children because a healthy family diet during these crucial years can have a lasting and significant influence on a child's future. In NSW, many families with primary school-aged children don't eat enough fruit and vegetables, particularly vegetables.

Eat It To Beat It is a multi-strategy prevention program with a very clear focus on increasing consumption of fruit and vegetables. The program content is based on the national Go for 2 & 5 campaign.

Eat It To Beat It strategies include:

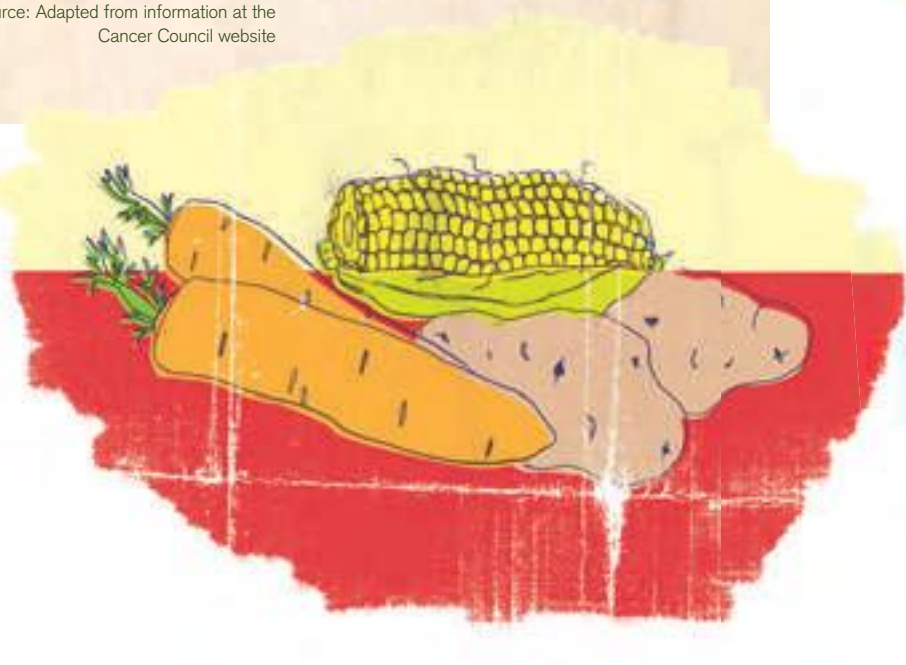
- Cooking and Shopping on a Budget: Volunteers with a keen interest in nutrition have been trained to deliver sessions in the community to provide parents of primary school aged children with skills to increase their vegetable and fruit intake.
- Fruit 'n' Veg Month: Cancer Council NSW, Healthy Kids School Canteen Association and Sydney Markets have collaborated to launch Fruit 'n' Veg Month in 2010 in NSW primary schools.
- Fruit 'n' Veg Fundraiser: Eat It To Beat It has teamed up with a local fruit and vegetable wholesaler, to deliver a healthy fundraising option to Hunter primary schools. The Fruit 'n' Veg Fundraiser is designed to replace less healthy chocolate and doughnut drives that are not in keeping with a healthy whole-school policy.
- Cooking demonstrations in shopping centres: This strategy enables large numbers of people to sample vegetable-rich recipes that they may not have tasted before and take home a show bag containing recipes to try at home.

Source: Adapted from information at the Cancer Council website

Activities

1. Why does the Eat It To Beat It program target parents of primary schoolers?
2. What is the recommended daily intake of fruits and vegetables?
3. What other children's health and nutrition campaigns link in with Eat It To Beat It?
4. How successful do you think the fundraising venture would be? How do you think it operates?
5. Research the Eat It To Beat It program using the NSW Cancer Council website. What other resources are available for parents on this site?

PP Web Destination



CORE

UNIT 2.9
UNIT 2.11

Multinationals

Multinational corporations are large corporations with operations in many countries. They often control every stage of the production process from farmer to consumer. For example, Kellogg's has farmers in Australia under contract to produce corn for specific use in the production of cornflakes to be made in local factories and sold in local supermarkets. Of course, multinational companies are in business to make a profit. They frequently set up supplementary branches in poor countries, as these countries can supply abundant cheap labour, land and plentiful resources. In theory, this can benefit poor countries by employing local people. However, despite the injection of money into the country, the investment is made only for the benefit of the corporation. Multinational corporations control the production of lucrative raw materials such as coffee, sugar, bananas, forest products, tea and tobacco. They have the financial resources to increase the supply of their own food products worldwide but, in the case of many fast-food chains, this may not be the best choice for good health.

4.3.7 Isolated NSW towns such as Wilcannia may provide limited services and food choices due to geographical distance from large regional centres.

Technological developments

Physical barriers to food distribution can have an impact on food sources. In Mozambique, in Africa, poor roads between the north and the south of the country make it cheaper to import food from Europe than to provide a market for farmers within the country. Even when the roads and weather are at their best, the transportation costs of moving grains from farms in the north to the capital Maputo constitute one-third to one-half of the selling price. This means that what should be a highly competitive, locally grown food becomes uncompetitive.

Similarly, in Tennant Creek in the Northern Territory, residents are forced to pay high prices for food, particularly fresh fruit and vegetables, due to the fact that these products are transported by refrigerated truck from Katherine or Darwin. The difficulty of affording a balanced diet contributes to the high rate of malnutrition and disease.

In the isolated town of Elliott, 250 kilometres north of Tennant Creek, the population is disadvantaged by poor roads due to the fact that the Northern Territory government does not fund maintenance for roads on Indigenous people's land. The water supplies are below acceptable quality and not sufficient in quantity. This is of real concern, as it leads to a high incidence of kidney disease.

State-of-the-art transport and refrigeration will improve food availability and ease distribution considerably, but inevitably will continue to be reflected in the cost of goods.

UNIT REVIEW

Looking back

1. List some common end-products of wheat, rice and maize.
2. Explain the term 'staple food'.
3. Why are pig farms often located near cereal grain farming areas?
4. Provide two reasons why livestock are not generally owned by people in developing nations.
5. Draw a mind map brainstorming the reasons that people who are disadvantaged may suffer from poor nutrition.
6. Define the terms 'globalisation', 'multinationals' and 'tariffs'.
7. Why do multinationals become established in many countries?
8. Why is the cost of transporting food significant?
9. Suggest the impact of an improved transport infrastructure on Tennant Creek.

For you to do

10. Obtain an illustration of a cereal. Use it to explain why refining rice to form white rice, or refining wheat to form white flour, reduces its nutritional value.
11. In groups, design a staple foods buffet menu.
12. a. On a map of NSW, locate the Hunter Valley, Batlow, Orange, Young and Leeton. Find out why these areas are climatically suited to the crops listed in the text.
    b. Research the grain-growing areas. Shade these areas on your map.
13. In groups, use a calendar and highlight the times of the year when foods are not permitted to be eaten by certain religious groups.
14. Research the factors that affect socio-economic status. Using the website link, visit the Australian Bureau of Statistics website.
15. Based on the information given, choose a partner and have a silent debate. On one piece of paper, take turns arguing 'That globalisation is the only way to a successful future'. Each person must choose to be either affirmative or negative and write one point on the paper and pass it to their partner to be refuted or a new point added.
16. Design an innovative bumper sticker to encourage consumers to buy local produce.
17. a. Design a low-cost meal for a family in Tennant Creek. You should aim to use an appropriate balance of fresh and packaged foods.
    b. Suggest strategies to improve the availability and distribution of foods to these areas.

Taking it further

18. Obtain some maize grains and use a mortar and pestle to grind these into flour. Add this flour to your tortilla recipe.
19. Use the newspaper *The Land* or go to the website link to visit the website of ABC television program *Landline* to determine the current issues affecting farmers. Write a report on your findings.
20. Investigate the food laws of Islam and Judaism. What do these laws say about eating meat? Why?
21. Using the website link, go to the website for the NSW Department of Agriculture. Research the government support that is available for farmers and graziers in NSW.
22. Using a map of the Northern Territory calculate the distance between Tennant Creek and Darwin or Katherine. If a truck is travelling at 100 kilometres per hour, how long would it take to drive this distance?
23. Investigate a multinational corporation such as Nestlé, Kellogg's or McDonald's. How far-reaching are their operations?

Food production practices

Food production methods throughout the world fall into the following categories. The reasons for a country practising one type of agriculture over another may vary.

Subsistence farming

Traditional agriculture is practised by subsistence farmers, usually in developing nations. This method of farming depends on rainfall and uses very few resources. Crops are grown that have multiple end-uses such as food, fuel, building materials and feed for animals. There are many advantages of this simple type of farming. No chemicals are used, the environment is not polluted, little energy is expended to produce food, and a variety of crops is grown as many traditional farming communities are **self-sufficient**.

Green revolution agriculture

Green revolution agriculture is a more modern type of farming practised in areas that are flat, tropical and **abundant** in natural resources.

The method uses farm machinery, high-yielding seeds, irrigation systems, fertilisers and pest control. The green revolution disregards traditional crops and farming techniques of the local area—everything is imported from developed countries.

Industrial agriculture

Industrial agriculture is practised in developed countries such as Australia. This type of farming uses high levels of technology, water, energy, chemicals and fertilisers. Many farms specialise in the production of vast quantities of only one or two crops. Multinational corporations, which control every aspect of food production from farm to consumer, also control much of the industrial agriculture for their products. There are also many successful farming businesses that are privately owned in Australia and overseas.

Industrial agriculture is a commercial process—the food product undergoes many changes before reaching the consumer. Industrial agriculture alters the environment, as the chemicals used have a range of effects, for example reducing the number of pests and changing soil quality.

Cash cropping

Cash crops are agricultural products that are grown for a luxury market. They are not crops that allow a family to be self-sustaining, but if they can be sold, cash crops command a high price. They generally also require smaller amounts of land to yield the same profit as traditional crops. Common cash crops include coffee, sugar cane, rubber, cotton, nuts, tea, tobacco and oil seeds. In areas such as the Amazon River in South America, the lure of cash crop profit must be balanced against the need to provide food for the family, and the problems caused by clearing native rainforest land to plant more crops. Many cash crops are produced to **export** to other countries.

Cash cropping undoubtedly creates opportunities for wealth, but in poorer countries it can pose a risk to farmers. Large farms are required for large profit, and access to world markets for export is necessary. Freer trade between countries has meant that poor countries specialising in the production of one key product must compete with increasing quantities of competitively priced imported foods as well. This can have a devastating effect on a small farmer's income if the farmer has only one type of food product to sell.

self-sufficient: able to support oneself; communities that are self-sufficient need very little outside assistance to produce food

abundant: plentiful

export: send goods or produce out of the country

Cash cropping has a negative effect on local food availability as land and resources are allocated to the crop.

4.4.1 Tea is a lucrative cash crop that provides little practical benefits to a struggling farmer.

FOOD IN FOCUS

Enabling more secure livelihoods in uncertain times

In the village of Spa on the small island of Sumbawa in Indonesia, the farms are remarkably similar. Typically farms are of three hectares, supporting three farming activities. Rice is grown on rain-fed lowland fields during the wet season, followed by maize, sweet potato or peanuts. An upland field is planted with tree and cash crops and used to provide feed for cattle. Behind each house in the village is a home garden planted with chilli, fruits and vegetables and shelters for cattle, chicken and ducks.

The Australian Centre for International Agricultural Research funds a joint project between Australia and Indonesia to help farmers manage their cattle to reduce the vulnerability of their farms and income.

On remote Sumbawa, in the absence of farm machinery and with unreliable rainfall, rice cultivation is a labour-intensive and increasingly risk-prone crop. Over the past six years, farmers have struggled to harvest one crop in three. In these circumstances, cattle are the main safety net, kept so they can be sold when times are tough or for big expenses such as renovations or education. Yet the opportunities for farm profit are greater from cattle than from farming rice.

'Most arable land is used for cropping and farmers are initially reluctant to plant feed for cows on good land, even if the food crop is not profitable,' says Dr Dahlanuddin from the University of Mataram. 'Farmers' first priority is to feed their family rather than cattle. That means there is always an issue with the low quality and availability of feed for cattle, especially during the dry season.'

The challenge for the joint project team was to demonstrate how feeding cattle could benefit these farmers, and introduce the means for farmers to profit from this. One example of a simple, yet important, innovation introduced by the project team was a new use for the tape measure. Project leader Dr Shaun Lisson, of CSIRO Sustainable Ecosystems, says that buyers were offering farmers a price for their cattle based on an animal's estimated weight.

'Unsurprisingly, the buyer's estimate is often less than the farmer's estimate. In the absence of scales, the farmers had no way to ensure a fair price.' So the project team introduced a simple way of estimating cattle weight from girth measurement. This approach, used in other parts of Indonesia, is empowering the farmers to bargain for better prices for their cattle.

Farmer interviews held before the project commenced indicated that 50 per cent of households did not raise cattle and were therefore exposed to high risk if their rice crop failed. After four years, almost all of the participating farmers are raising cattle and experiencing impacts that they could not have imagined at the start. Most farmers increased household income by 50–300 per cent by selling cattle. Farms that previously could not maintain any cattle are now feeding as many as eight. Overwhelmingly, the farmers used this extra income to invest in activities likely to reinforce economic gains (such as the building of small farm dams), improve their houses and provide better education for their children.

Source: Adapted from 'Livestock: Enabling more secure livelihoods in uncertain times', *Partners in Research for Development*, March–June 2009

Activities

PP Web Destination

1. Why were farmers reluctant to develop part of their land for growing cattle feed?
2. What are the benefits of having healthy cattle for a farmer?
3. Explain the significance of using a tape measure in selling cattle.
4. How does this joint Australian–Indonesian project benefit the Indonesian people of Sumbawa in the short term (1–3 years) and the long term (5–10 years)?
5. Try playing the Third World Farmer Game to understand how this Indonesian project makes a difference.

UNIT REVIEW

Looking back

1. List the three main categories of food production.
2. What is the main feature of a sustainable system of agriculture?
3. Describe the main differences between traditional and green revolution agriculture.
4. Are cash crops harmful to the environment? Explain.

For you to do

5. a. Design symbols in your notebook to represent each type of farming.
   b. Expand these symbols to design single frame cartoons to explain the inputs and outputs of each type of farming.
6. Draw up a table and list the advantages and disadvantages of cash cropping.

Taking it further

7. What is organic farming? From your research, explain the reasons why organically grown foods tend to be more expensive.
8. What is crop rotation? Why is it a technique that supports self-sufficiency?
9. Use the internet to research one of the cash crops mentioned. Where is it grown?

4.5

Physical and social cost of malnutrition

CORE

UNIT 2.4

4.5.1 Malnutrition affects people from a range of countries.

According to the World Health Organization, more than one billion people in the world are estimated to be undernourished.

Malnutrition in children is hunger at its most devastating. It can affect their mental and physical development for the rest of their lives, which, in turn, deepens the hunger cycle as they not only suffer ill-health but also have less access to education and opportunities for work later in life.

Hunger and malnutrition seriously affect adults, too, impeding their productivity and creating a host of associated problems.

Some forms of malnutrition are the result of vitamin, mineral or protein deficiencies. These deficiencies, known as protein-energy malnutrition, constitute the world's most common nutritional problem. The symptoms of these deficiencies are not immediately visible but have debilitating effects on people and societies. In poor countries, protein-energy malnutrition causes growth retardation, chronic starvation and protein deficiency. The result is lost productivity and a great increase in health costs to governments attempting to improve the quality of life.

In Australia, a high proportion of the Indigenous population suffers from diseases that were previously unknown to them, such as diabetes. This is largely due to a shift in diet from fresh meat, vegetables, fruits, legumes and nuts to the highly processed foods of the 'modern' society, which are often very nutrient-deficient.

Overconsumption is also a form of malnutrition. Consuming more kilojoules than is required is often accompanied by a deficiency in vitamins and minerals. Compounded by greater meat consumption and reduced physical activity, people become overweight and obese. In our consumer-driven society, food companies respond to demand for prepared foods by delivering attractive, expensive but often nutritionally empty products. The health-care costs, decreased productivity (sick days off work due to diet-related illness) and environmental costs associated with over-eating are huge.

PP Web Destination

UNIT REVIEW

Looking back

1. Explain the difference between malnutrition and overconsumption.
2. Describe the costs to the community of poor nutrition.
3. What reason is given for the decrease in health status of Indigenous Australians?

For you to do

PP Web Destination

4. Draw a cyclic diagram to explain how hunger in childhood can lead to disadvantage later in life.
5. Research the disease diabetes. What are the risk factors for contracting diabetes later in life?
6. Design a menu for a workplace canteen that promotes healthy lunches and snacks.

Taking it further

7. Design an information poster discussing the nutritional risks of underconsumption and overconsumption of food.
8. Research Rotary International and the work they do in health. Write a one-page report on your research.

Provision of aid

4.6

Aid agencies and emergency relief

Aid agencies support developing countries by providing long-term developmental assistance in areas such as education, agriculture, road building and securing water supplies. Some agencies also specialise in emergency and disaster relief, providing food, money, shelter and medical care in an emergency.

The World Bank is an agency of the United Nations, providing long-term loans for the economic development of developing countries. This may be for infrastructure projects such as roads, transport networks or communication networks; agriculture; industrial development; health or education. It provides loans for the poorest countries, charging low or no interest. The borrower country does not have to start paying the loan back straight away. It lends money to countries that could not borrow money from any other source. The World Bank is funded by contributions from developed countries. Every three years, donor countries are asked to renew their pledges.

The World Bank also assesses the economic performance of less developed countries. This assessment influences the borrower's access to other aid.

The Australian Government, like the governments of many developed countries, allocates foreign aid every year, whereby money is directed to less developed countries. Government-sponsored aid generally benefits countries that are important to the country offering the aid. The Australian Government also supports some non-government aid agencies.

Foreign aid agencies that are not government controlled, for example United Nations International Children's Emergency Fund (UNICEF), can be self-directed in the type of aid they provide, as they are not restricted by political factors. Generally non-government foreign aid agencies strive to help poor communities to help themselves by using long-term solutions rather than short-term 'bandaids'.

Developmental aid

Developmental aid can be described as 'back to basics' aid. It encourages developing countries to place greater emphasis on long-term solutions by:

- giving priority to primary and secondary schooling, therefore increasing workforce skills
- promoting breast-feeding as the best nutritional start to life
- investing money in health care
- encouraging and supporting individuals to start their own businesses and develop agricultural skills.

Some specific examples of developmental aid include:

- research into and elimination of diseases such as smallpox, polio (eliminated in many countries), diphtheria and measles
- development of new crop varieties and skills to support green revolution agriculture
- finance for projects to extend and improve energy, communication and transport infrastructure, bringing more nations into the 'modern' economy.

Some foreign aid agencies are church-based, such as the Christian Children's Fund or Caritas, but all are well known for their initiatives in education, health and community development. Often non-government agencies have expertise in providing assistance to meet people's basic needs such as food, clothing and emergency shelter, particularly in emergency situations, when quick and flexible responses are required.

PP Web Destination

4.6.1 Refugees from the floods. Some experts believe deforestation in the Himalayas may be increasing the risk of floods.

4.6.2 Red Cross workers distribute food to displaced Georgian refugees in 2008.

Web Destination

UNIT REVIEW

Looking back

1. What is the role of aid agencies?
2. Why are non-government aid agencies freer to operate in less developed countries?
3. Why is developmental aid described as being 'back to basics'?
4. Explain how funds can be used to:
   - improve local health care
   - help individuals in business in a developing country.

For you to do

5. List the advantages to a country that receives a World Bank loan.
6. Devise a fundraising venture to support the aid agency of your choice.
7. Design a poster that promotes breast-feeding and display in a local area health centre.

Taking it further

Web Destination

8. Who is the federal Minister for Foreign Affairs? Using the website link, investigate the website of the Department of Foreign Affairs and Trade, and find out the budget allocation for foreign aid during the past financial year. What percentage of GDP does it amount to?
9. As a class, ask an overseas aid agency representative to talk to the class about their work.

Additional content: support networks for groups

4.7

Government

In Australia, Centrelink, on behalf of the Department of Human Services, provides a range of benefits for individuals and families who are struggling financially. Support is available for people who are unemployed, caring for another, in crisis, or in special circumstances, such as a farmer in drought-declared areas. The assistance can come in the form of a one-off payment for those who meet the criteria, or ongoing payments until a person's circumstances change.

Voluntary

There are many voluntary agencies in Australia that provide both monetary and practical aid to individuals and families in crisis. These include church-based and non-religious organisations such as the Smith Family, Salvation Army, St Vincent de Paul, the Red Cross and the Samaritans. Assistance can be in the form of a food hamper, food from a soup kitchen for the homeless or vouchers to spend at the local supermarket.

PP Web Destination

4.7.1 Salvation Army Emergency Services provide help and encouragement to victims of disasters such as bushfire and flood.

FOOD IN FOCUS

Feed Sydney: making a meal out of charity

Anyone tucking into a delicious Indian curry by Kumar Mahadevan, or Robert Marchetti's signature spanner crab with Venetian polenta tonight is encouraged to think of those less fortunate.

The two men are joining other chefs at some of Sydney's top restaurants to get behind the Feed Sydney restaurant night, where diners can add a little extra to their bill to help provide 250 000 meals for disadvantaged people.

Some restaurants will also match or better the diners' contribution.

Mr Mahadevan, chef and owner of Aki's at Woolloomooloo and Abhi's in North Strathfield makes about 30 litres of extra food every few weeks to donate to food rescue charity OzHarvest.

'As part of the Hindu philosophy of dharma … wastage of food is a sin like [it is with] any other religion,' he said.

'I think the world is large enough for everybody to share.'

OzHarvest founder Ronni Kahn said it was easy for diners to add extra money to their bill tonight.

'$1 equals one meal,' she said.

'It's really simple to make a difference, while you're enjoying your good meal you can know you're helping.'

Like Mr Mahadevan, Mr Marchetti runs such a tight ship at Icebergs and North Bondi Italian Food that there's no excess stock.

Instead, he donates money to keep OzHarvest on the road.

'If you're donating money it has a much bigger impact if you know what your money's doing,' he said.

'Ronni's created this great model that this money goes to this product, and this product goes to these people.'

Feed Sydney is a campaign run by OzHarvest and action group Do Something, running through June, aiming to highlight food wastage, food poverty and food recovery.

Funds raised will be distributed among charities and spent collecting and rescuing more food.

Jon Dee from Do Something said since the global financial crisis many families struggled to put food on the table.

'When people go out to these fantastic restaurants, when they eat the wonderful food they can think about what they can do to help out someone who's less fortunate then them,' he said.

'It's not just the top end of town that can help out—next year we want to get places like McDonalds and KFC involved.'

Source: Adapted from Jessica Mahar, 'Feed Sydney: making a meal out of charity', *Sydney Morning Herald*, 16 June 2010

Activity

Using the internet and other resources, research the businesses and organisations in this article. Use your research to create a report on the charitable activities of these businesses and their impact on the community.

PP Web Destination

Practitioner focus

Reverend Bill Crews—Exodus Foundation

Reverend Bill Crews was not always a Uniting Church minister. He was originally an electrical engineer. In the late 1960s he first visited the Wayside Chapel in Kings Cross and became involved in visiting housebound and elderly residents of inner Sydney. This association led to Bill quitting his job as an engineer and working full-time at the Wayside Chapel.

During the 1970s and early '80s he worked with adoptees wanting to be reunited with their birth parents, and assisting parents who were at risk of abusing their children. He was also heavily involved in the creation of the Life Education Centres with Reverend Ted Noffs, following his experience in working with the NSW Drug and Alcohol Authority.

By 1983 he was studying theology and was ordained a minister of Ashfield Uniting Church in Sydney's inner west. Building on his experience at the Wayside Chapel, he established the Exodus Foundation to assist homeless and abandoned youth and other people in need.

The Exodus Foundation began by providing a hot dinner for the homeless on a Monday night from the church hall. It now encompasses the Loaves and Fishes Free Restaurant, serving up to 400 meals to the needy every day. It is open between 9 am and 10.30 am for breakfast and 11.30 am to 1 pm for lunch.

The Foundation also operates a tutorial centre to teach literacy skills to children, a free dental and medical clinic, and provides social workers, counselling and food parcel assistance.

Source: Adapted from information at http://www.billcrews.com.au/htm/exodus_frontpage.htm

Activities

1. Why does a person decide to do volunteer work, such as Bill Crews did with the Wayside Chapel?
2. Why do you think the Exodus Foundation started by providing a hot meal as a way to assist the homeless?
3. Why do you think the restaurant has expanded to serve breakfast and lunch, but not dinner?
4. What is the significance of the tutorial centre? Why do you think it was offered, along with medical and other counselling services?
5. Suggest foods that could be included in a food parcel given to a family in need.

UNIT REVIEW

Looking back

1. Name the government agency providing social security benefits.
2. 'Charitable agencies provide practical help to those in need.' Do you agree? Defend your answer by the use of examples.

For you to do

3. Design and cost a two-course meal that meets the Exodus Foundation's budget of around $4 per person, to be served on Rugby League Grand Final Day.

Taking it further

4. Visit a local charitable organisation. Interview the person in charge and write a report discussing:
   - the services the charity provides to your community
   - how the charity is funded
   - how volunteers are recruited.

Chapter review

Looking back

1. List the four factors that influence whether farmers have food security.
2. Why is income the defining factor in meeting food needs?
3. Explain the link between literacy and nutrition choices.
4. Why are women and children particularly at risk of food inequity?
5. How does having a physical or mental disability place an individual at risk of food inequity?
6. What is the definition of a chronic illness? What examples of illnesses can influence food inequity?
7. Why are certain staple foods grown in certain areas of the world?
8. How does religious belief influence food availability?
9. Explain the effect of globalisation or free trade on poor nations.

For you to do

10. Draw a mind map to illustrate the reasons for food inequity.
11. Design a menu of lunches for a daycare centre's preschool section for five days.
12. Explain the link between drug addiction and food inequity. Do some further research and develop a fact sheet for a particular drug.
13. Write a list of pros and cons for a young person taking on a part-time job after school at age 14. Now write a list of pros and cons for a young person taking on full-time work in a developing country at the same age. What differences are there in your lists?
14. Design a low-cost healthy meal for a family using an inexpensive meat as the base ingredient. Use an online supermarket or a letterbox catalogue to determine which cuts of meat are cheaper or on special.
15. What facilities are available in your local area for aged care? Investigate their nutrition policies.
16. Do some research and design a display of products that support Fairtrade.
17. Design a presentation for the class on a disease of malnutrition. Outline the causes, symptoms, treatment and any long-term effects. Include a map of the world, locating the major countries that consume the staples of wheat, rice, maize, millet, cassava and sago (tapioca).

Taking it further

18. Find out Australia's GDP for this year.
19. Search the internet for services to assist people who are vision-impaired. Present a one-page report on what assistance is available for shopping, cooking and other food-related tasks.
20. Locate an isolated outback town on a map of NSW. Do some research on the services and facilities available for the town's population. What food inequity factors may be present in this town?
21. Research the work of a speech therapist in assisting elderly people who have swallowing difficulties. What causes these problems, and what can be done?
22. Investigate the government support available for communities to replace services destroyed by natural disasters such as fire or flood.
23. Research a volunteer group operating in your state. What opportunities exist to help the less fortunate in your local area?

Chapter 5

New food!

Focus area: Food product development

Innovations are new ideas. Food product innovations are new ideas in food. Is there such a thing as a 'new' product? The food industry demonstrates the importance of the word 'new' in marketing foods. Innovations may take the form of a new product, a new method of providing the food to consumers (how it is dispensed), a new variety of an existing food, or simply a competitor for a successful existing product. It costs a great deal of money to develop a food product innovation. The aim of the development of a new food product is to increase company profits. Improvement and innovation are crucial to the continuing success of food products.

Chapter outcomes

In this chapter you will learn about:

- the reasons new products are developed
- impacts of food product innovations in the past and present on society
- the steps taken in developing a new food product
- the role of market research
- the promotion of new food products
- emerging technologies used in new food products.

In this chapter you will learn to:

- explore the purpose, characteristics and diversity of new food products
- make links between new food products and their effects on society
- outline the design process for developing new food products and apply this in the design, production and evaluation of a new food product
- describe the purpose of market research in food product design and development
- identify the elements of the marketing mix
- analyse the success of a range of marketing and promotional techniques and apply these to a new product
- design an innovative food product
- investigate the application of a new technology in food product development.

Reasons for developing food products

5.1.1 Selecting bread is more complicated today than simply making a choice between white and brown!

Consumers often become bored with products and are quickly distracted by new products. For a company that continues to market 'the same old thing' this distraction could mean a loss of profits as consumers spend their money elsewhere.

Companies devote large budgets to developing new products in order to stay competitive, and to satisfy consumer demand.

Changes in the law can force food companies to alter their products. Sometimes the changes required may be relatively minor, such as a labelling requirement (for example declarations that the product may contain traces of nuts), but sometimes food companies can be required to alter the content of a product, for example to remove certain additives from certain foods.

Market concerns

It could be said that consumers today are better informed about their health and nutrition than ever been before. With this clearly in mind, food companies develop food products that target this awareness. Companies promote foods that are **modified** versions of their regular product lines, for example foods for which the recipe has been altered to make them low in fat, salt-reduced or higher in fibre.

Examples of these products can be found in supermarket lines such as peanut butter, baked beans and fresh bread.

Technological developments

Technological developments affect food product development. For example, the high level of microwave ownership resulted in the development of specifically microwavable products. As microwave technology developed, so did the products. For example, as microwave ovens have become more powerful, products, packaging and cooking times have changed accordingly. The resurgence of slow cookers and popularity of **espresso** coffee makers for the home have created a market for manufacturers of specialty recipe bases and boutique-style ground coffee.

consumer: person who uses a product or service

modified: changed or altered

espresso: coffee made by forcing steam under pressure or boiling water through ground coffee beans

CORE
UNIT 2.3

'Intense' variety tomatoes were developed after consumers complained that regular tomatoes made their sandwiches soggy. Intense tomatoes lose less than 1 per cent of moisture when cut, compared to 20 per cent for other tomato varieties!

5.1.2 What technological developments have created a market for these products?

PP Web Destination

5.1.3 Competition is fierce in the breakfast cereal market. Which products might be the market leaders here?

Food trade shows provide the opportunity to showcase new products. At Fine Foods Australia 2009, a hot chocolate stick was launched. With this product you make a cup of hot chocolate by stirring a wooden stick coated with Belgian chocolate into a cup of warmed milk, melting the chocolate as you stir.

5.1.4 Berocca is an example of a product innovation. What other innovative products can you think of?

Hands on

Make popcorn in the microwave

Purpose

To make popcorn. The technology of the microwave opened a new avenue of product development for modifying products cooked in traditional ways. In this activity you make popcorn in the microwave.

Steps

Prepare a pack of microwave popcorn as directed on package.
Serve immediately.

Activities

1. Why do you think microwave popcorn was developed?
2. Other than saving time, what are the advantages of making popcorn in the microwave?
3. Look at the packaging for microwave popcorn. What features do you notice?

Increasing company success

A great deal of money is invested in product development. Companies can be hesitant to invest huge amounts of money in developing a new product because of the risk of financial loss if it is not successful.

There are three main types of food product innovations:

- innovative products
- line enhancements
- copy-cat products.

Innovative products

Innovative products are the result of completely new ideas. These may be a new concept in packaging, such as the functional lid that holds the tablet until opening, as is used in the Berocca Performance drink, or a product directed to a new target market, such as breakfast replacement drinks (Up & Go) or caffeine drinks such as V and Red Bull.

This is a very volatile form of product in the market—it is very expensive to develop and launch a completely new product, and follow up with advertising and promotion. Companies want consumers to try a new product but also to continue buying it—which can be difficult to achieve. In Australia, many of the 'new' products may have in fact already been established as successful products elsewhere in the world.

Line enhancements

As new product development is expensive, many food manufacturers opt for a line enhancement as a way of retaining their customers and improving their product.

Line enhancements might include the development of a new flavour, or recipe revision that would include a change in the recipe to alter its nutritive value, to make it low in salt or high in fibre. While line enhancements are a safer, lower cost way of attracting customers, they produce less profit than a brand new innovation.

Copy-cat products

Copy-cat products are aimed at attracting customers for an already established and successful product by creating a similar product. Often companies will copy both the competitor's product and their marketing strategy—however, the profits and market share of the copy are rarely threatening to the original. There is no substitute for being first with a good idea!

Consumer demand

Consumer satisfaction is very important to food companies, as it encourages shoppers to stay loyal to their brands. Consumers are loyal to brands they are happy with, and some consumers will communicate their wishes using product consumer hotlines. Some line extension ideas have come directly from consumer demand—for example, large amounts of some foods are now packaged in different ways for better handling or convenient use—such as a 3-litre container of milk (rather than buying three 1-litre containers) or 1.2 kilograms of yoghurt in twelve 100-gram tubs (rather than one large container). In this way, the variety in availability ensures the loyalty of large families and single households.

Product tampering

Product tampering occurs when a customer **tampers** with a product—for example, opens a packet of biscuits to try one without intending to buy.

Threats of serious product contamination in the food industry over the last ten years have led to consumer demand for greater protection of their health in the consumption of purchased products. This tampering may occur at any stage in the production and packaging process. There have been some widely publicised examples in the past, such as the threat of jars of baby food containing fragments of glass, and packets of biscuits and headache tablets being injected with deadly poison. These threats usually result in the affected products being withdrawn from sale Australia-wide, which can be potentially ruinous for a company.

Tamper-evidence devices are methods of packaging that immediately tell the consumer if the product has been opened in some way. There are many examples:

- plastic shrink seal around the lid of products such as baby foods and sauces
- screw-top jar with a 'pop top' that is released when the seal is broken for the first time
- plastic screw top with a collar below the lid, such as on milk and juice bottles
- foil seal under the lid, as on juice bottles, peanut butter and coffee
- paper strips that wrap from each side of a jar and over the lid, which tear when the seal is broken, as on some types of jam
- ring-pulls under reusable plastic lids on cans of baby formula or Milo
- cellophane wrapping around products such as boxes of chocolates or tea bags
- shrink wrap-type plastic that completely seals bottles such as herbs and spices
- packaging within packages, such as for muesli bars and breakfast cereals
- sticky-tape type seals on resealable boxes, such as for ice-cream cones or paracetamol tablets.

5.1.5 Many food companies have consumer hotlines and email contact links on their website to elicit feedback from their customers. Have you ever contacted a company to complain or praise?

tamper: meddle with for the purpose of altering

In the United States, a company called Garden of Eatin' has developed Blue Chips. Made from organic blue corn, they have the same taste and texture as regular corn chips.

RECIPE

PLUM JAM
p. 318

Special applications

Foods developed for special purposes are frequently adapted from tried-and-true dishes, such as a pasta and sauce. This may mean developing a freeze-dried or dehydrated version of the product.

The advantage of modifying the product in this way is that it is light and space-efficient (ideal for bushwalking and camping), but with the added challenge of not compromising the flavour and texture qualities of a traditionally made sample. Examples of special food applications are:

- defence force ration packs
- camping supplies
- space foods
- airline foods
- medical foods.

Defence force ration packs

Combat ration packs are developed according to the Australian Defence Force specifications. The issue of weight is important, although soldiers usually only carry rations for three days at a time, as part of their average 40 kilograms + pack weight. Rations are designed to be eaten either hot or cold. Soldiers carry small fuel stoves and cooking containers to heat meals. Typically, a ration pack would include the following:

- canned or freeze-dried meals (freeze-dried to be reconstituted with water)
- canned fruit
- tea and coffee
- toilet paper
- matches
- can opener.

The pack is designed to meet the energy needs for all soldiers, regardless of weight, height and energy expenditure. Ration packs of today can be described as energy- and nutrient-dense.

PP Web Destination

Camping supplies

Foods for camping have come a long way from small cans of baked beans and flour and water damper.

Visit any large camping supplier and you will see an extensive range of camping-friendly foods. Experienced campers sing the praises of flat pitta breads (already flat, can't be squashed further in a pack), dried pasta and sauce (just add long-life milk and water) and single-portion packages of breakfast cereal for which the box becomes the bowl.

Two main issues plague the camper/trekker:

- how to minimise the weight and bulk factor of food required to carry in a pack
- how to minimise the rubbish created by pre-packaged food, which has to be carried home.

A few food production companies have attempted to solve both these problems. Hungerbuster brand meal-packs do not need to be made up with water—they can be eaten cold or the unopened package can be placed in boiling water for a short time (around 6–8 minutes). The sachet can then be removed from the water, pulled out a little at the base so it can stand, the top opened and the contents eaten. The water used for heating can be further used to make tea or coffee, or to heat another meal. Hungerbuster main meals include Mushroom Risotto, Tomato Tortellini, Chicken Teriyaki Stir Fry and Beef Satay.

Space foods

New foods and methods of packaging were designed for astronauts as they explored space. Early astronauts on the *Mercury* capsule ate bite-sized freeze-dried foods and puréed foods from tubes, which looked like toothpaste. The biggest problems were with food crumbling and floating around the cabin, and the rather unappetising look and taste.

By the time of the *Apollo* missions, dehydrated foods could be rehydrated by saliva in the mouth of the astronaut. Freeze-drying technology had advanced so the food looked and tasted more like it should.

More recently, refrigeration, freezing and warming trays have been put to good use on space shuttles. The warming trays are magnetic, and thus hold the food cans in place while in use. Foods are precooked or fresh and kept in the freezer (for example meat and seafood); partially dehydrated and stored at an appropriate temperature (for example bacon, biscuits and pudding); or stored as ready-to-eat rehydrated foods (for example drinks, soup and salad). A computer on board calculates an individual diet for each astronaut.

Airline foods

Preparation of food for flight is tricky. Food that is pre-prepared and stored prior to reheating is a potential food-poisoning hazard. Airline food must be prepared, chilled to less than 5°C then heated during the flight.

Other challenges are presented by the weight restrictions for the aeroplane, available space on each tray module, ease of movement (for example soups can be difficult and dangerous), budget and hygiene to avoid the risk of food poisoning.

Presentation of the food in an attractive way is perhaps the most difficult given the confined tray space and the fact that many foods lose colour, flavour or texture on reheating.

PP Web Destination

5.1.6 This ice-cream comes in a block and has a texture like Maltesers. It dissolves on the tongue, leaving the flavour of ice-cream.

Domestic airlines in Australia serve over 3000 meals per day.

Practitioner focus

Neil Perry—restaurateur

5.1.7 Neil Perry in his Rockpool restaurant

Neil Perry is one of Australia's leading and most influential chefs. He has managed several quality restaurants in Sydney and today concentrates on his flagship brand, Rockpool restaurant and Rockpool Consulting.

Neil's career in hospitality began at Sails restaurant at McMahons Point and in Rose Bay. Neil then became head chef at Barrenjoey Restaurant, Palm Beach and was also given creative control over Perry's in Paddington. In October 1986, he opened the Blue Water Grill at Bondi Beach and took the site from a twenty-year failure to an overnight success. He then opened Rockpool in February 1989 with his partner Trish Richards, which has developed into a world-class restaurant, winning many awards both here and overseas.

Neil heads a team of six consultants to Qantas Airways. For those at the front of the plane, Neil Perry has helped develop menus that are interesting, practical and nutritious. Menus are developed quarterly for International First and Business Class travellers, with a team overseeing the implementation and introduction to catering centres at key ports. Perry's relationship with Qantas is 'significantly different' to chefs who consult for rival airlines (among them, Aria's Matthew Moran who advises Singapore and Liam Tomlin, formerly of Banc, who is on the British Airways panel.) Neil is involved from 'paddock to plate'. Perry and his team talk to produce growers not just in Australia but all Qantas ports. They design the first- and business-class menus, train the airline caterer's chefs and work with cabin crews to improve cooking procedures and galley management.

Under Perry's guidance, fewer meals in first and business are cooked on the ground, with cabin crew now cooking the majority of meals from a fresh base, which delivers a much better result than reheating food. Vegetables are steamed fresh on board while fish is grilled. The food is no longer pre-plated by the on-ground caterers but plated in the galley, restaurant-style. Unlike other premium airlines, Qantas doesn't employ in-flight chefs but Qantas cabin crew are competent and confident.

The Rockpool Consulting team are integral to the food and wine training and communication for all premium flight attendants, and in addition work with Qantas to develop service delivery to reflect a more modern in-flight dining experience.

Neil is also author of a number of recipe books and classical/recipe CDs; creator of a range of Neil Perry Fresh food products in conjunction with Woolworth's Supermarkets; and a television presenter on The Lifestyle Channel, with whom he has produced several series around the region under the banners of 'Food Source' and 'Fresh & Fast'.

Source: Adapted from information on Restaurant and Catering NSW Hall of Fame website and 'Flying High' by Steve Meacham, *Sydney Morning Herald*, 18 February 2004

Activities

1. What skills must Neil Perry have had to advance from being head chef to managing his own restaurant?
2. Why would Qantas have wanted Neil Perry to work on their menus?
3. Why is his involvement with Qantas described as being 'significantly different'?
4. What kind of training might the Qantas cabin crew need?
5. Do you think it is unusual for a chef to have developed a classical music/recipe CD? What kind of music do you like to cook to?

Web Destination

RECIPE

FIRST-CLASS FLATHEAD
p. 319

Medical foods

Foods are also developed for special medical conditions. These are officially called Foods for Special Medical Purposes. They are developed for people who have ongoing medical conditions that mean they cannot eat, chew or swallow. Often these individuals are fed for a short time using a naso-gastric tube (a narrow tube going in the nose down into the stomach), for example after surgery to the mouth, or for the long term, for example for an ongoing illness. These food products represent a growing area, due to the ageing population and a pattern of early release from hospitals after treatments.

Other Foods for Special Medical Purposes are specialised dietary supplements, such as protein supplements for body builders or low-energy diet formulas available under medical supervision for weight loss. These products tend to be very expensive, being available only from pharmacies.

Target market changes

Today's consumers have less time for cooking and yet a greater interest in gourmet kitchen appliances, television cooking shows and cookbooks. Families show a greater willingness to purchase foods and products that reinforce the home-cooked meal image.

Ageing

The Australian population is ageing at a greater rate than it is reproducing. This is due to increased life expectancy and a lower birth rate. In addition, the number of single-person households is increasing in number in Australia. The availability of 'single serve' meal solutions will increase, as will smaller meal serves, given the trend to consume smaller meals, rather than three large meals per day.

5.1.8 Before the age of supermarkets, shoppers were individually served by the shopkeeper, who weighed and packaged the items requested.

Reduced size of households

The 'average' family in Australia consists of two adults and 2.3 children, but the size of households is shrinking. Food companies respond to these demographics by creating family-sized packs that cater for four rather than six. There is an abundance of convenience meals aimed at the busy family whose schedules never coincide for them to eat together.

Multicultural

Australian come from a great many cultural backgrounds. This diversity is reflected on the supermarket shelves and in specialty shops providing ingredients for different cuisines. The popularity of multicultural foods has grown since the 'exotic' spaghetti bolognese and sweet and sour pork of the 1960s and 1970s, to include naan bread, felafel, baba ghanoush and rogan josh ingredients available in supermarkets today.

Many metropolitan supermarkets reflect the cultural backgrounds of the local population; for example, Chinese grocery stores are popular for specialty ingredients in some areas.

An innovative medical ice-cream is being developed by dairy researchers to combat the unpleasant side-effects of chemotherapy for cancer sufferers.

5.1.9 Chinese grocery store shelves, an example of multicultural influences in Australia

UNIT REVIEW

Looking back

1 List and describe the three main types of food product innovations.

2 Of the three types, which is the most expensive to develop? Why?

3 How is the success of a new product measured by food companies?

4 Define the term 'tamper evidence device'.

5 Give six examples of products that use different tamper-evidence devices.

6 Explain the need for high energy foods in a soldier's ration pack.

7 Outline the advantages of dehydrated and long-life foods for ration packs, camping, air travel and space travel.

8 List the benefits for campers of food for which the package becomes the cooking and/or serving dish.

9 What were some of the problems with early space foods?

10 Why are warming trays a useful innovation in space shuttle flight?

11 What constraints limit the scope of meals served on airlines?

For you to do

PP Web Destination

12 Sometimes packaging, rather than product, needs a revamp to boost sales. Design a new package for an existing successful product, for example Tim Tams, Blue Ribbon ice-cream, Mars Bars, PaddlePops etc.

13 Develop a tamper-evidence device for the container to store plum jam (see page 318).

14 The Packaging Council sees easier opening as a feature of packaging for the elderly. Invent a tamper-evidence device that is user-friendly for the elderly.

15 In pairs, design a menu for a four-day, three-night camping and walking trek. You must include all meals and snacks, making sure they are high in energy, lightweight and easy to carry.

16 Draw and label a warming tray, and compare your illustration with others in your class.

17 Using the website link, check the NASA website for the latest information on foods for space flight.

Taking it further

18 Look at the websites of some well-known food companies. Are their products copy-cat products, line extensions or completely new products?

19 Often new food products are introduced to Australia after being launched in the United States. Write a report on two interesting products recently released in the United States.

20 Shoppers who open products to inspect quality or try products such as grapes in the fruit and vegetable section of a supermarket are breaking the law. True or false? Defend your answer.

21 Why do products such as bread not use tamper-evidence devices?

22 Discuss the following topic: 'Tamper-evidence devices just increase the non-recyclable component of packaging'.

Do you agree? Support your answer with examples.

23 Purchase some beef jerky, dehydrated peas and quick-boil rice. Prepare and present these as a meal for camping. Evaluate the appearance and taste.

24 Using the internet, find out about meals served on overseas flights. How do the meals differ between economy, business class and first class? (How do the fares compare?)

Impact of food product innovations

5.2

CORE
UNIT 2.12

Food product innovations do not go unnoticed, nor are their effects limited to our tastebuds. Innovations impact on all areas of our lives.

Social and cultural impacts

In the first half of last century, innovations in food came in the form of labour-saving devices such as the refrigerator and the electric mixer, and the concept of the supermarket. These innovations changed the lifestyle of Australian home-makers. Products needing refrigeration could be bought in greater quantities, home baking became less laborious and grocery choices could be made by consumers, who could select products from the shelves at their leisure.

In the twenty-first century, instead of products changing our lifestyles, products are being developed to match our lives. More than ever, households with children contain two income earners, and this extra income comes at the price of reduced time spent for food preparation. Consequently, food companies develop products that reflect this changed lifestyle. Examples include meals for one, for the family that does not eat together due to clashing timetables of sporting and other commitments; and the ever-expanding number of sauces and **condiments** that can be added to meat and chopped vegetables (the ever-popular Chicken Tonight was a pioneer in this area). The Australian acceptance of foods from other cultures has led to an expansion of products based on Mexican, Thai, Malaysian, Mediterranean, Chinese and Indian cuisines in supermarkets.

The café culture has also driven the development and promotion of café-style products and the resurgence of tea as a beverage. An alternative to tea bags has been developed, called Tstix. This packaging system has no tags, strings and will not drip, discolour or split after use. It looks like a slim sugar sachet, but is made from a sturdy film that contains more than 1100 holes of less than 0.5 millimetres in diameter. No spoon is required, as the package itself may be used as a stirrer and may have further applications for coffee and fruit flavourings for beverages.

Economic impact

Australia's increasingly busy population continues to be willing to try new products. As the population of working adults increases, so does their disposable income. This increased income means people are more willing and able to spend money to try new products, in particular products that make their lives easier. For example, lunchbox fillers such as muesli bars, pre-packaged dips and biscuits, fruit sticks and dried fruit boxes provide an appealing, time-saving, portioned alternative to home baking.

Of course, this move away from traditional home-baked foods comes at a cost. These products cost much more to make than the homemade equivalent.

As air travel becomes more affordable, airline meals have also changed to meet this economic challenge.

Typically an airline meal needs to be robust, yet flavoursome; peanut-free (due to food allergy concerns) and safe (to alleviate food poisoning risks)—not an easy task!

PP Web Destination

5.2.1 Airline tray meal

RECIPE

APRICOT CHOC CHIP MUESLI BARS p. 320

condiment: substance, for example a sauce, that gives a special flavour to a food

CORE

UNIT 2.6

Canadian studies have discovered that blueberry juice made from fruit with specific bacterium injected under the skin could have potential as a diabetes therapy agent.

Malnutrition in developed countries is addressed by the provision of a high-energy nutritional paste. Scientists are working to transform this paste into a more tasty medicine cookie, with the cookie icing fortified with essential vitamins and minerals.

morbidity: illness

mortality: death

CORE

UNIT 2.9

Making a packet cake mix

Purpose

To develop a popular convenience product—a packet cake mix of your own.

Materials

½ cup sugar

1 cup self-raising flour

1 tablespoon milk powder

flavouring of your choice, for example cocoa, orange rind and poppy seeds, coconut, dried apple and cinnamon, chopped apricots

75 grams butter

2 drops vanilla

1 zip lock plastic bag, computer word-processing program to create labels, labels for computer printing

Steps

1. Grind the sugar to a powder using a food processor.
2. Add the other dry ingredients and blend on low speed.
3. Add butter and vanilla. Blend.
4. Store in a zip lock plastic bag.
5. Using a computer program that creates labels, label the bag with the name of the product, instructions for mixing and cooking, and the date.

[To make up, add one egg and 180 millilitres of water. Blend. Pour into a prepared 20-centimetre round tin and bake in a moderate oven (180°C) until cooked.]

Activities

1. Determine the cost of this mix and compare to the cost of a commercially available packet cake mix.
2. Store your mix in the pantry for one week and then make up according to your instructions. Evaluate in terms of taste and shelf life. Do you need to add a 'use by' date to your label?

Environmental impact

Food innovations affect the environment. Waste packaging generated by new processed foods is an obvious impact, but sustainability is a great concern also.

Sustainable food production is now a priority in Australia in order to address the issues of land degradation, soil salinity and deforestation.

Environmentally friendly crop development using organic farming methods creates produce that is enthusiastically received by the purchasing public. Supermarkets now stock many more vegetarian options, from vegetarian soy sausages to chickpea patty mixtures. Vegetarianism is increasing in the community and food producers and retailers are endeavouring to meet the needs of this group by providing a variety of new products, from fresh to frozen foods.

Developments in the area of genetically modified cereal crops have been met with caution.

Nutritional impact

Consumers are much more aware and much more demanding of food products to meet their requirements. Statistics show that the impact of diet on **morbidity** and **mortality** is of great concern to Australian scientific and dietetic professionals.

Food consumption trends that have led to this have motivated public health organisations to develop strategies to reduce the impact of chronic disease linked to the foods we consume. Diet contributes in some way to the incidence of:

- heart disease
- stomach cancer
- bowel cancer
- stroke
- diabetes
- obesity.

As a result, many food products and label symbols have been developed to draw attention to ways of preventing or reducing the incidence of these nutritional disorders.

UNIT REVIEW

Looking back

1 Describe the impact on lifestyle of the availability of refrigerators, electric mixers and microwave ovens.

2 Explain the popularity of products such as Chicken Tonight and risotto or pasta sauces.

For you to do

3 Design an advertisement for a bottled pasta sauce—aim your sales pitch at working parents.

Taking it further

Web Destination

4 Using the website link, go to the Australian Bureau of Statistics website to find the latest statistics on households with two or more income earners. In how many families are both parents working? Use this statistic to explain why convenient foods are an expanding market.

RECIPE

PIZZA POCKETS
p. 321

5.3

Steps in new product development design

evaluate: determine the value of something

criterion: standard to judge against

An idea for a new product may come from:

- the manufacturer's need to cut costs and find a more cost-effective way to produce the product
- a drop in the market share for the product
- a competitor's successful product
- market research indicating that a consumer need is not being met
- environmental concerns.

Most big companies today employ teams of people in the research and development department. Their job is to keep up to date with sales figures of product lines and to stay aware of competitors, developments in order to pinpoint areas for product development (for example a revamp for a product whose sales are declining, or development of a product to compete with another in an area related to the company's area of expertise).

Developing a new product is a step-by-step process. At each step, the project is **evaluated** to determine whether it should continue.

Product design is a cyclic process, as is shown in 5.3.1.

5.3.2 The research and development team meets regularly to discuss ideas and directions for product development.

Creating a brief

A brief is a statement of the aims of the project and **criteria** to measure the success of the product. It may be broad or very specific and includes limitations such as budget and timing.

Often detailed briefs specify raw ingredients or a method of processing to be used and the market the product is targeting (for example snack food for children, low-fat product for health-conscious people, packaged prepared vegetables for working parents).

Research (identifying the target market)

The manufacturer must investigate the consumer market to clarify the wants and needs of consumers as well as provide a description of the proposed product and target market. The results will determine whether the original idea needs to be modified, or even dropped completely if the research shows there is no need for it.

Creating and developing ideas

This is the stage at which ideas are 'dreamed up', based on what the team thinks the consumer will want to buy. These ideas then generate research—looking for available ingredients, investigating processing methods, watching competitors and consulting again with consumers to clarify strengths and weaknesses of existing related products.

5.3.1 Designing a new product is a continuous process.

Assessing options and selecting the most appropriate

The list of ideas generated is examined and each suggestion matched against the criteria given in the design brief. Ideas that fail this test are discarded.

The ideas that remain (usually about ten or so) are then investigated more closely to determine whether they will meet budget **constraints**. For example, will the purchase of a new processing or packaging machine be necessary? Will the ingredients be available all year round? Does this idea meet the consumers' demands?

5.3.3 Test kitchens are used to develop recipes, which are then evaluated against the criteria—and tasted!

Producing

Developing a recipe and prototype

Laboratory experimentation is aimed at developing a prototype or model product that satisfies the design brief. Samples are produced that demonstrate changes in single aspects of the basic recipe. All steps and results are recorded carefully so that recipes can be reproduced when a decision is made.

In-house sensory testing is used to evaluate colour, flavour and/or texture.

If the product is developed to compete with another established product, sensory testing will compare the new product with the competitor. Development of a trial product or prototype is a time-consuming process. There may be extensive finetuning to match colour, flavour and texture to consumer requirements.

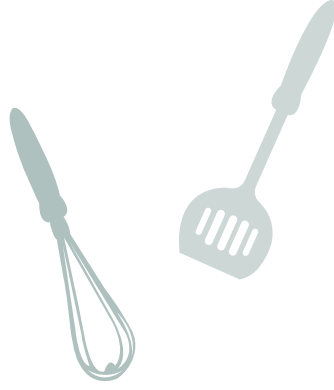
During this stage, the packaged and unpackaged product is tested for spoilage and deterioration under a variety of conditions, such as refrigeration, pantry storage, sunlight exposure and heat.

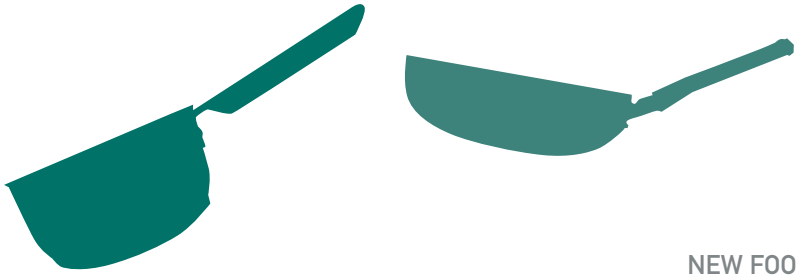
Calculating the actual cost of the product will determine whether the cost of producing the product is within the financial budget, and will also act as a starting point for calculating retail price (which includes company and retail profit). The cost of a product is determined in this way:

Ingredient costs
+
Production costs
+
Packaging costs
+
Marketing costs
=
Total cost

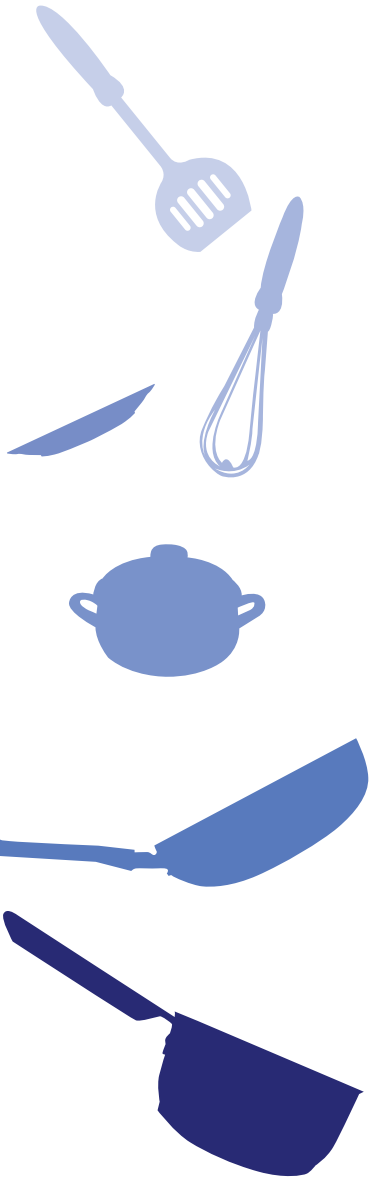
The cost per product is the total cost divided by number of product units manufactured.

constraint: restriction





Tattoo technology is being developed that will do away with those little stickers on pieces of fruit. Laser etching technology will place a tattoo label on a piece of fruit for identification at the supermarket checkout.



Hands on

Design a snack—with a twist!

Purpose

To design and make a muffin, slice or biscuit using craisins.

Craisins are a lesser known product of dried and sweetened cranberries.

Steps

You will need to submit your recipe and ingredient list to your teacher for ordering.

Activities

1. Select the most successful or popular craisin recipe in your class and create a standard recipe suitable for producing large quantities for sale.
2. Design a package for the individual product. Ensure the label includes a name, list of ingredients, date of baking and names of the producers.
3. Plan a production line for the large-scale manufacture of the cranberry product. Make sure you start with collection of ingredients and finish with packaging and labelling.

RECIPE

JAM DROPS
p. 322

Pilot production

Pilot production is adaptation of the successful prototype for full-scale production. Manufacturers often simulate full-scale production in smaller pilot production plants. This enables them to refine ingredient amounts, cooking times and energy costs for large-scale production.

5.3.4 Factory production is undertaken on a small-scale first with small batches so that production concerns can be finetuned before full-scale production.

Packaging

The development of a package for the new product is integral to its success and recognition in the consumer market. Package design occurs at the same time as product design, following a similar design process.

Evaluating

Evaluation is a continuous process, undertaken at every stage of the product development process.

Once a product has been developed into a successful prototype and appears to be 'the one' the company would like to add to its existing line, market evaluation occurs. This means confirming that the product has met the needs identified earlier in the project.

Market evaluation: sensory assessment

Sensory analysis is carried out to determine the answers to three main questions:

- Does the target market like it?
- Is it different from anything else currently available?
- In what ways is it different from what else is available?

Sensory analysis is used to evaluate and describe the new product in terms of the senses:

- taste or flavour, for example sweet, sour, bitter, salty, strong, mild, weak
- texture or mouthfeel, for example smooth, lumpy, juicy, moist, gritty, sticky
- aroma, for example strong, weak, spicy, yeasty, sweet, pungent
- appearance, for example light, dark, golden, glossy, bright, dull
- noise, for example crunchy, crackly, fizzing, dull.

The attitudes of consumers to aspects of the new product such as the aroma are tested. Testers may have to tick on a scale where their preference lies, from 'like very much' to 'dislike very much'.

Researchers also want to find out how consumers feel about a product and may ask them to select words they would use to describe the product, for example 'nourishing', 'natural', 'healthy', 'artificial' or 'enjoyable'.

Consumers often participate in taste tests, which are usually blind tests; that is, tasters do not know which product they are tasting. This is especially important if a company wants a comparison between their new product and that of a competitor. More accurate answers are gained when testers do not know which is the well-known product.

If the results from the sensory evaluation are favourable, the product is launched onto the market.

Hands on

Taste testing new food products

Purpose

To do some market research of your own. The success of new food products depends on the willingness of consumers to buy the product more than once, gradually building up brand loyalty.

Materials (whole-class activity)

six to eight new food products currently being marketed (preferably ones you have not tried) in sufficient quantities for each student to taste

Method

Divide each product into equal portions for each student. Comment on the following:

- product name
- appearance
- texture
- flavour
- cost.

Activities

Devise a bar chart on the computer to analyse the class results in terms of the following.

1. Which product had the most pleasing appearance?
2. Which product had the most liked texture?
3. Which product had the most favourable flavour?
4. Which product was the most expensive?
5. Take a vote among the class and determine which product is most likely to be purchased again. Why?

sensory: relating to the senses or sensation

5.3.5 Why is it important that the products for testing are not identified and taste testers do not speak to each other?

UNIT REVIEW

Looking back

1 Describe the characteristics of a design brief.

2 Discuss the role of research at the early stage of designing a new product.

3 Write an equation to calculate the cost of producing a product.

4 What is a pilot plant?

5 Why is the design of the package so important?

6 Why is constant evaluation throughout the product development process crucial?

7 Explain the need for consumer opinion in the form of sensory analysis.

For you to do

8 Draft a design brief that could have been the driving force behind Ice Magic, Yakult, or Arnott's Snack Right biscuit varieties.

9 Select a new food product and devise a ten-question survey to gauge whether the product is well liked among your classmates.

10 Do you think products are developed with healthy eating principles in mind? Support your answer with relevant examples.

11 Why are products tested for storage under so many varied conditions?

12 Devise an experiment to test for the deterioration of a product under exposure to sunlight.

13 Design a PowerPoint® presentation to promote the Vegemite tube (first launched in 1996, and relaunched in 2002) to travellers.

Taking it further

PP Web Destination

14 Brainstorm a list of ideas for new food products you would like to see. Why do you think they haven't been developed yet?

15 a Devise a recipe for a breakfast drink.

b Imagine you are aiming to sell this drink to take away from a milk bar. Using a plain paper cup (milkshake size), design a logo to appear on the cup to promote your drink.

16 Obtain a recent copy of the journal *Food Australia* or use the website link to visit the website. Write a report on the innovations (food, packaging, distribution, etc.) publicised in this journal.

Role of market research in product development

5.4

Identifying needs

Before a design brief can be developed, market research is conducted to determine whether there is a need in the consumer population that is not being met, or whether products need to be modified in order for them to remain profitable. Market researchers need to find out about consumer buying patterns, a company's competitors and business in general. The information gathered helps to identify the target market. This research is usually gathered by companies who specialise in the area of collecting consumer information.

Economic viability

If the new product will make sufficient profit for the company, it is said to be economically viable. Market research will help determine whether consumers will buy the product not just once out of curiosity, but continue to buy it. This is called product longevity. A product with a long life in the market (that is, it continues to maintain good sales for a long period of time) will reward the company with profit.

Consumer feedback

Consumer opinion is the backbone of market research. Information is collected from consumers in a number of ways:

- telephone surveys
- researchers questioning shoppers in busy centres containing supermarkets
- consumer feedback lines advertised on product packaging
- formal surveys and tests such as sensory tests.

Professional research companies carry out many formal research projects.

The use of consumer feedback telephone lines enables companies to obtain direct information from their consumers. They often have freecall numbers, which may or may not operate as advice lines also, and allow consumers to register their likes and dislikes about a product or even to suggest changes to an existing product, such as making a low-fat or salt-reduced version of a family favourite. Some companies offer this service online as well.

Sensory assessment

As you have seen, sensory assessment is pivotal in selecting the successful product to be launched. Its specific role is to identify areas for development or adjustment, such as aspects of flavour, texture, appearance, aroma or sound. Additionally, it is important that through sensory testing, the consumer can identify a point of difference between the new product and its competitor.

5.4.1 Have you ever been approached to complete a survey about food and meal preferences?

PP Web Destination

Dark colours on packaging can inhibit sales growth because they can make a product hard to find on supermarket shelves.

Hands on

Use an existing food product to create a line extension

Purpose

To create a line extension to extend the life of a successful product.

Steps

1. Select a food as the base for your line extension, for example ice-cream, milk, cornflakes, bread.
2. Submit an ingredients list and numbered method.
3. Prepare and make your line extension. Take photographs of the finished product to be used in a promotional presentation to your class.

Activities

1. What was the most difficult aspect of your product development?
2. Identify the target market for your product.
3. If your school has a video camera, make a 30-second television-style commercial for your product.

UNIT REVIEW

Looking back

1. Define the term 'product longevity'.
2. List four ways in which companies receive feedback on their products. Why is this interaction with the customer important to a company?

For you to do

3. In pairs, design a large-format flow chart to explain the design process for developing a new food product. Use a recently launched product as an example.

Taking it further

4. Contact a food company to request information on the development of a successful product for which they are the market leader. (Be aware that you may have difficulty getting details other than promotional material on very recently launched products or categories in which the competition is fierce. To help, make sure you mention that you are a school student, and why you need the information.)

Promotion of new products

5.5

Products that are new to consumers must be promoted in order for the public to be aware of their existence.

Marketing mix

The marketing mix is a combination of product, price, promotion and place (sometimes known as distribution). These factors are crucial to a successful product launch.

Product

The success of a new product depends greatly on a company having the right product to promote: its product make-up (ingredients, processing methods used), the appropriateness and appeal of the packaging, the image associated with the company and its brand name (sometimes referred to as reputation).

Price

The selling price of the product will determine its 'positioning' in the market. Many consumers equate price with quality, but at the same time look to get value for money. Setting the right price is important for establishing the correct image for the product.

Promotion

Promotion involves deciding whether and how to inform and educate the consumer about the new product. This may mean media advertising, personal selling sales promotions, sponsorships or a combination of these. The technological age means promotion takes a new direction through the use (sometimes exclusively) of internet sites—either the product's own or additional destinations such as YouTube or Twitter, or group pages on social networking sites as well. McDonald's used this form of promotion to great effect for their Grand and Mighty Angus burgers, creating web clips only available on their YouTube page.

Coca-Cola branding not only includes the product, but also the logo. Coca-Cola are well known for changing their advertising campaigns regularly, but their logo and trademark ribbon have always remained the same.

Place

This involves deciding on the avenues to distribute the product. Some food products, described as 'boutique', may sell only at small specialty shops or delicatessens, while others will be sold widely at supermarkets in all cities and country towns in Australia; others yet may be developed solely for export. Distribution of the product must be efficient so that the product can arrive at the sale venue in good condition.

Promotional techniques

Successful promotion involves finding out what influences consumers, and what encourages them to buy your product over the competition. Researchers look for changing consumer trends and these trends, having guided the development of a new product, are then used to promote the product. For example, consumers see chocolate as an indulgence food, and market research shows that chocolate consumption is higher in the cooler months of the year. Winter promotions of people rugged up against the cold in front of an open fire sipping a steaming cup of hot chocolate are directed at what the research indicates about consumer behaviour. Very successful promotion campaigns identify consumer trends and needs directly.

5.5.1 The iconic Coca-Cola sign in Kings Cross

RECIPE

PESTO
p. 323

PP Web Destination

5.5.2 Celebrity endorsements can be very lucrative for food companies.

RECIPE
FROZEN DESSERT p. 324

Competitions, advertising campaigns, celebrity endorsements

Once the decision has been made about where the item is to be sold, promotion through advertising can be planned. The aim of advertising is to persuade the consumer to buy the product, thereby increasing the company profits.

Competitions encourage consumers to buy particular products, for example in order to use the bar code or competition entry form on the package for the chance of winning a prize. Some competitions require more than one purchase to enter and win. Other promotions offer cash back after a proof of purchase has been sent to the manufacturer.

Advertising appears in various forms, on television, radio, billboards, magazines and newspapers, as well as moving displays on buses and taxis, and more subtle promotion through sport sponsorship (for example the Melbourne Cup, or One Day Cricket).

Advertising is expensive, especially on television and radio. This cost needs to be absorbed into the final cost of the product. Greater profit is made on processed foods, particularly fast food and convenience foods, and for this reason they are the most highly advertised products.

Effective media advertising tools include jingles and slogans, and endorsements by celebrities. Other useful promotional activities occur at the point of sale, for example the supermarket, milk bar or corner store. These activities may be subtle in nature, such as positioning products at eye level on the supermarket shelf, to using flags and signs that extend from the shelves, to competitions or in-store taste testing, to large end-of-aisle displays.

UNIT REVIEW

Looking back

1. Having the right product at the right time is crucial for food companies. Why?
2. In what ways does the distribution aspect of a boutique product differ from that of a widely available supermarket product?
3. What is promotion?
4. How does advertising affect the price of a product?

For you to do

5. Using pictures, prices, logos and slogans from supermarket advertising brochures, explain the concepts of product, price, promotion and distribution.
6. Collect three magazine advertisements for food products that you consider to be effective. Identify the elements that make each so good.
7. Using these elements, identify the target market for your pesto and create a black and white 10 cm × 15 cm advertisement, suitable for placement in your local newspaper.

Taking it further

8. Investigate a food product that is a specialty of your local area. Conduct an interview or gather information on it via email or interview a relevant spokesperson and present an oral report on the way this product is marketed.
9. Select a food product that is relatively new to the market. How effective do you think the marketing strategies have been for ensuring the success of this product?
10. Conduct a debate on the following topic: 'Advertising informs the consumer'.
11. Watch 30 minutes of television between 3 pm and 5 pm, and then 30 minutes between 7 pm and 9 pm on any week day. List the advertisements you see in each time slot. Are the range of products vastly different? Why?
12. Why are children's programs on commercial television stations that screen in the mid-morning on week days often free of commercials, while on weekends, commercials are quite specifically aimed at children?

Additional content: emerging technologies and products

5.6

The food industry is ever changing. There are new developments in food and food business, such as:

- farming and cropping methods, for example genetically modified foods
- advancements and innovations in food and packaging processes, for example cryovac packaging
- improvements in distribution and warehousing, for example computerised stocktaking and ordering such as Radio Frequency Identification tags
- developments in flavours and additives
- greater variety in market venues and sales opportunities, for example the growing popularity of Aldi supermarkets and internet shopping.

Genetically modified (GM) foods are created when genes from plants, animals or micro-organisms are inserted into the genetic material of food crops and animals. Current projects by GM scientists include:

- development of rice to survive weather extremes as the effects global climate change begin to be felt
- genetic experimentation on fish to make them mature sooner
- experimentation on bananas as the base of a vaccine against diseases such as hepatitis B
- genetically modification of cows to make them resistant to mad cow disease.

While these are under investigation, they may not be available for some time. Any foods produced that have been genetically modified in any way must seek approval from Food Standards Australia and New Zealand before they can be sold in Australia.

5.6.1 Genetically modified Roundup Ready Canola is resistant to the weed killer Roundup. This means that this GM canola crop dusted by Roundup will not be destroyed—only the weeds will.

FOOD IN FOCUS

Rabbit farming

Julia Limb

Wild rabbits are notorious pests to farmers in rural Australia. Farming rabbits for meat as a business is a relatively new and fast-growing industry in New South Wales. Rabbits are good breeders—100 does (female rabbits) can produce 250 offspring every month. A great deal of research is being carried out to minimise disease that comes about because the animals are bred in intensive farming conditions.

Farmed rabbits are processed at an abattoir and sold in butcher shops and farmer produce markets. Rabbit has been seen in the past as a food for tough times, but now is developing a specialty/gourmet market.

Source: Adapted from 'Thriving new industry of rabbit farming', *Landline*, 23 June 2002

Activities

PP Web Destination

1 What benefits are there for farming rabbits as opposed to other animals?
2 Explain the obstacles that face rabbit farmers.
3 Using the website link, access the CSIRO website to research the developments in farming technology and developing new primary industry markets.
4 Use the internet to search for recipes using rabbit meat.

FOOD IN FOCUS

Nanotechnology and food

Nanotechnology involves manipulating matter at the nanoscale to create new materials, structures and devices. One nanometre (nm) is a billionth of a metre and, to put this in perspective, a human hair is about 80 000 nm–100 000 nm thick!

At this tiny scale, materials can have different properties from their bulk form because of the larger relative surface area, making them potentially more reactive.

'Nanofoods' refers to all foods to which manufactured nanoscale food components have been added and/or packaged in materials to which manufactured nanoparticles have been added. Nanotechnology certainly offers exciting possibilities for the future, such as safer food that can be conveniently stored for longer periods without deterioration. Other possibilities include foods fortified with healthy ingredients such as vitamins, antioxidants or omega-3 fats, encapsulated so that they are delivered exactly where they are needed in your body.

Other possibilities include:

- Food additives: Ingredients are processed to form nanostructures or nanotextures to enhance taste, texture and consistency of food. One example of this might be the development of ice-cream with a lower fat content that retains a fatty texture and flavour.
- Food processing equipment: Knives and chopping boards can be coated with antibacterial silver nanoparticles. These products are already on the market, despite evidence suggesting that nanosilver may be toxic and is already of definite environmental concern.
- Food quality: Nanosensors (integrated with packaging) may increase the shelf life of foods by detecting spoilage bacteria or the loss of food nutrients, possibly releasing antimicrobials, flavours, colours or nutritional supplements in response.
- Food packaging: Nanomaterials are already added to packaging to keep food fresher for longer; for example, blocking UV light using nanoscale zinc oxide and antibacterial films that contain silver nanoparticles.

Source: Adapted from information on *Choice* magazine website. Reproduced with permission from CHOICE, Australia's leading consumer organisation. CHOICE is a not-for-profit enterprise that exists to make Australian consumers the most savvy and active in the world.

Activities

PP Web Destination

1 Define the term 'nanotechnology'.
2 Draw up a table of two columns and list the advantages and disadvantages of nanotechnology.
3 Why is nanosilver described as being an environmental concern when used in kitchen knives?
4 Brainstorm the uses for nanotechnology you would like to see.

UNIT REVIEW

Looking back

1 List three main areas of technological development in food innovation.

For you to do

2 Design a new-to-the-world food product using an emerging innovation.

Taking it further

3 Research the issue of GM food further. Read widely and present an oral report to the class on your views on GM foods—are you in favour or against? Support your views with evidence.

Chapter review

Looking back

1 Why do consumers lose 'brand loyalty' over time?

2 List some factors related to consumer wishes that drive food product development.

3 Suggest the criteria driving product development for defence force ration packs, camping foods, food for space, airline foods and food for special medical purposes.

4 Describe the impact of an ageing population on food product development.

5 Outline the economic impacts of the increasing availability of new food products.

6 Define the term 'sustainable food production'.

7 List three diseases that have been linked with poor diet. Suggest a food product that aims to address the prevalence of each disease listed.

8 Where do ideas for new food products come from?

9 Define the term 'prototype'.

10 Define the four elements of the marketing mix.

For you to do

11 Identify the newest food preparation or cooking appliance in your home. What products are available that have been designed specifically for that appliance?

12 Explain why a company might develop a copy-cat product rather than an innovative product.

13 Market researchers identify consumer buying patterns and their motivation for purchasing certain brands. What do your purchasing habits say about you? Why do you stay loyal to certain brands?

14 Design a ration pack for an emergency kit (for example to be taken in the event of a home evacuation) for one day, that will make dishes that can be eaten warm of cold. Consider weight, packaging, utensils and preparation required.

15 Explain the target market the following products may be aimed at:

- birthday cake kits
- pre-made pizza bases
- fresh lentil burger patties
- heat-in-the-bowl low-fat microwave meals.

16 Debate the following topic: 'Price is the greatest deciding factor in product longevity'.

17 Watch a televised sporting event such as football (any code), basketball, motorsport, tennis etc. Identify any incidental promotion you see during the telecast—but not the advertisements. Where are they? How obvious are they?

Taking it further

18 Using the website link, visit the US website Supermarket Guru. What new foods have arrived in American supermarket shelves recently?

19 Investigate the website of your favourite food product. What does the website cover? How could you contact the company with your ideas or complaints about the product?

20 Obtain a set of bathroom scales and fill a backpack to weigh 40 kilograms. Consider the energy required by soldiers to carry this weight while walking for three days.

21 Interview the local Meals on Wheel coordinator. What modifications are made to meals to make them easily consumed by their clients?

22 Pick a food product that aims to assist in the prevention of heart disease, cholesterol or bowel cancer. Research this product and describe how this product works in this therapeutic fashion.

23 Design an innovative competition to encourage primary school children and/or their parents to purchase a food product of your choice. Will it be a game of skill or chance?

24 Conduct further research on nanotechnology or gene technology in foods. Present a short oral report on your findings.

Chapter 6

Is it good for me?

Focus area: Food selection and health

This chapter looks at food and health, focusing on the role food plays in the body. You will investigate the functions and sources of food nutrients, our varied nutrient needs and factors that influence health. The chapter reveals the effects of poor eating and examines guides that are available to help Australians make decisions that will aim to promote good health. You will study the factors which influence food habits and how governments, manufacturers and society can impact on nutrition levels. Foods with special health benefits will also be investigated.

Chapter outcomes

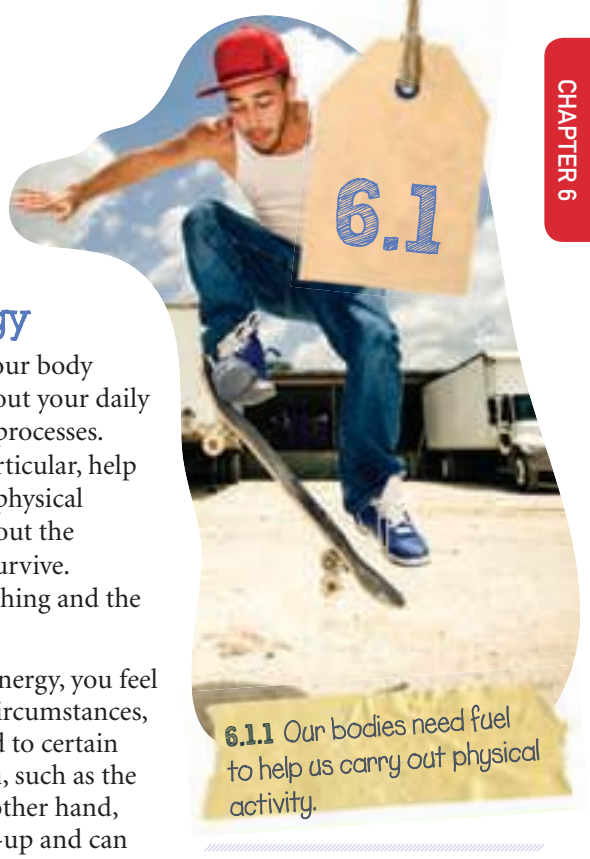
In this chapter you will learn about:

- functions of food in the body
- digestion
- function and sources of food components
- nutritional needs
- factors influencing food habits
- nutritional implications of food consumption patterns
- response to nutrition levels
- applications of food guides.

In this chapter you will learn to:

- outline functions of food
- describe digestion
- outline the source and the function of the components of food
- identify RDIs of nutrients at various life stages
- select food to provide a balanced intake of nutrients
- design and prepare foods to meet the needs of different groups
- recognise factors influencing food habits and explain how they affect food choices
- outline effects of excess/insufficient nutrient intakes
- discuss responses to general nutrition levels
- evaluate nutritional food guides
- analyse the nutritional value of foods
- modify foods to reflect food guides
- design, plan and prepare foods to reflect food guides.

Function of food in the body



6.1.1 Our bodies need fuel to help us carry out physical activity.

Everybody needs to eat food in order to survive. Different foods give us the six nutrients that we need to maintain good health. These are carbohydrate, protein, lipids, vitamins, minerals and water.

Without these food nutrients you would die! All foods contain one or a combination of these nutrients. If you eat a balanced diet consisting of a variety of healthy foods, you are certain to receive these nutrients every day. Food has three main functions in the body:

- growth and development
- provision of energy
- repair and maintenance of the body's cells.

Growth and development

Babies, young children and adolescents grow at a rapid rate, while in adults and the elderly most growth has stopped and nutrients are mostly used for maintaining their bodies.

Your body cells must be able to grow and develop as you do, and food plays a major part in this. Protein, for example, is the building block for every body tissue cell such as bone, teeth, skin and muscle. If a person is lacking protein in the diet, problems may occur, such as **stunted** growth.

PP Web Destination

Provision of energy

As a car needs fuel to work, your body needs food to help you carry out your daily tasks and regulate your body processes. Carbohydrates and fats, in particular, help to fuel the body, not only for physical activity, but also for carrying out the functions needed for you to survive. These include digestion, breathing and the circulation of blood.

When the body runs low on energy, you feel fatigued and tired. In severe circumstances, a lack of energy may even lead to certain body processes shutting down, such as the reproductive system. On the other hand, excess energy causes fat build-up and can lead to obesity.

Repair and maintenance of cells

Achieving good health is one thing, but keeping it is another. You need to maintain your health, and you need good food in order to do this. For example, your skin is often cut or grazed, your hair falls out constantly and your red and white blood cells die on a regular basis. By consuming the right nutrients, your body will repair itself and stay healthy.

Similarly, you must be well enough to fight infection and disease. A healthy individual who eats well and exercises regularly is less likely to suffer from a cold or flu than a person who eats poorly and does not exercise.

The body weight of a baby triples in its first year of life. Compare this to the rate at which adolescents grow.

Women who suffer from the condition of inadequate food intake known as anorexia nervosa often report that their menstrual cycle stops completely. The body realises it is not fit to conceive a child in such an unhealthy state and so does not waste energy on the reproductive system.

stunted: restricted growth and development of the body

Looking back

1. What are the three main functions of food?
2. List the six food nutrients.
3. What age groups grow at a rapid rate?
4. Which two nutrients provide most of our energy?
5. List three body tissues that are made from protein.

For you to do

6. Research three foods that contain carbohydrates.
7. Evaluate your diet. Identify the 'energy' foods that are always present.

Taking it further

8. In groups of two to three, plan and present a multimedia presentation of approximately 2–3 minutes that educates young people about the three functions of food. Use a storyboard to organise your research.

UNIT REVIEW

6.2 Digestion of food

Up until the eighteenth century, sailors were often ill during voyages due to lack of fresh fruit and vegetables while at sea. A **deficiency** in Vitamin C during the voyage led to a condition called scurvy that causes gums to weaken and shrink, teeth to fall out, and prevents wounds from healing. Many sailors died because of their poor health.

deficiency: lack or absence of a particular nutrient

6.2.1 Scurvy leads to gum and dental problems.

A meal takes approximately 1½ hours to be digested in the stomach before passing to the small intestine.

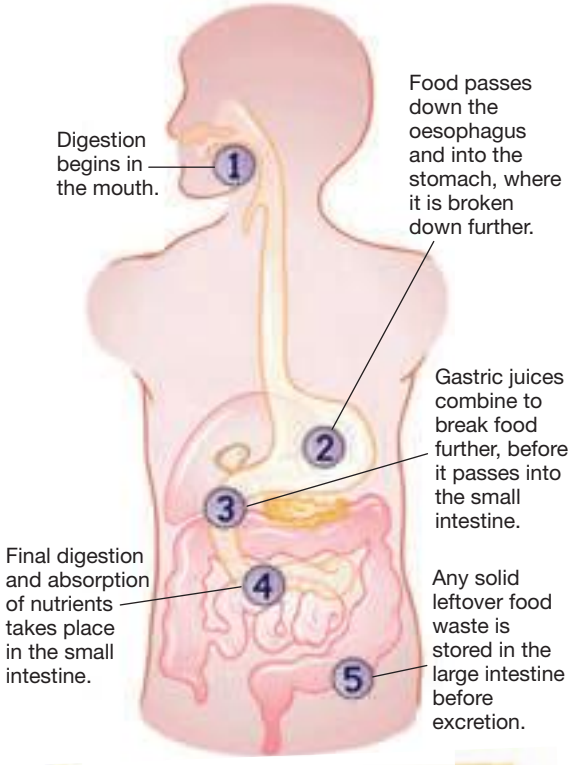
Web Destination

The gastro-intestinal tract

The gastro-intestinal tract, also known as the GI tract, is where the digestion of food takes place. It begins in the mouth, proceeds through the oesophagus to the stomach, then through the small and large intestines and finally to the rectum. This entire tract measures around eight metres in length.

The process of digestion

Digestion is the process whereby food is broken down into smaller chemical units that may be absorbed and used by the body.



6.2.2 The process of digestion

FOOD IN FOCUS

Hard to stomach

The stomach is a sack-like organ that not only breaks down the food you eat but also acts as a storage compartment. Your stomach can store two to three meals at a time. This prevents you from having to eat at intervals of 20–30 minutes in order to meet your constant energy needs.

The stomach has many functions:

- a storage device—it holds the food you eat
- a digestive sack—it helps break down or split the chemicals that make up food
- a food mixer—muscular stomach walls churn up the food
- a sterilising system—the strong acid in the stomach helps to kill any germs in the food that you may have consumed.

6.2.3 The stomach

Your senses of sight, smell and taste can stimulate your digestive system, causing stomach acid to bubble and gurgle, and the stomach walls to contract or squeeze. The smell of food or the idea of eating causes a message to be sent to the brain, which in turn controls the release of more stomach acid.

Activities

1 What are the main functions of the stomach?

2 Explain why it is helpful that the stomach can store two to three meals.

3 When you have an empty stomach, describe how you feel when you smell food cooking.

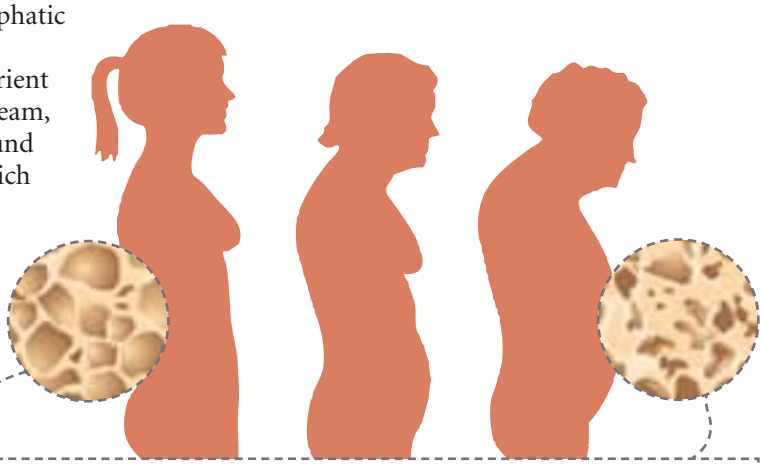
Absorption of nutrients

Most nutrients are absorbed in the small intestine. The villi that line the small intestine have a large surface area to allow the tiny units of each nutrient to pass through into either the bloodstream or the lymphatic system.

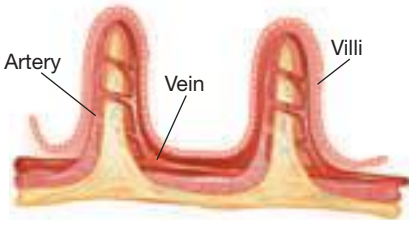
Carbohydrates are broken down into simple units of sugar called glucose. Protein breaks down into amino acids and globules of lipids break down into fatty acids and glycerol. Everything is absorbed into the bloodstream, except lipids. These pass into the lymphatic system. When each tiny component of each nutrient passes into the bloodstream, they can be carried around the body to the cells which require them.

Metabolism

People digest and absorb food at different rates. The rate at which food is absorbed and digested is known as metabolism. Metabolism refers to the speed that food is broken down and used by the body. Every person has a different rate of metabolism. It can be affected by factors such as age, height, activity level and genetics. Each person must then eat food according to how quickly they digest and absorb it. Have you ever heard anybody complain of a slow metabolism?



6.2.4 An osteoporotic bone looks like honeycomb and can lead to frequent breakages. Over time the spine may compress, fracture or crumble.



6.2.5 The intestine wall is lined with villi, which increase the surface area and assist with absorption.

When villi are damaged, nutrients cannot be absorbed properly. People with coeliac disease, who are intolerant to gluten from wheat, have great trouble absorbing nutrients. The wheat irritates the villi so that they shrink back and flatten. Deficiency diseases such as **osteoporosis** are commonly linked to this dietary problem.

osteoporosis: condition of weak and porous bones due to a lack of calcium in the diet

UNIT REVIEW

Looking back

1. How long is the GI tract?
2. Where does digestion begin? What happens at this stage?
3. At which stage does absorption take place?
4. What is metabolism?

For you to do

5. If someone claims to have a fast metabolism, what do they mean? Explain in your own words.
6. Pass a poster around the room with the heading 'Digestion', or get one student to act as a scribe on an overhead. Give your own definitions of digestion and display the poster for the class to see.
7. Interview someone with a digestive disorder such as coeliac disease (gluten intolerance). Find out the symptoms and causes.

Taking it further

8. Select one stage of digestion.
   a. Using the internet as your tool, research and report in greater detail what happens to food at that stage of the GI tract.
   b. Provide your class with a summary. Use diagrams or illustrations to support your findings.
9. Evaluate the digestive process. Discover which digestive enzymes are responsible. For example, carbohydrate digestion begins in the mouth with an enzyme called 'amylase'. Create a table with the headings 'Nutrient', 'Place(s) of digestion', and 'Enzyme(s) responsible'.
10. Research the role of the liver and pancreas in the digestive system. What do they do and where are they located?

6.3 Function and sources of food components

CORE

UNIT 2.1

Food nutrients perform special functions in the body. Different foods contain different amounts of each nutrient. Nutrition education teaches you what combinations of foods to eat in order to receive the correct balance of nutrients. Look at the table opposite to see the functions and food sources of each nutrient.

Alcohol is the only food that is absorbed through the walls of the stomach. This is the reason why alcohol affects the body so quickly, especially on an empty stomach.

Athletes fill up with huge quantities of carbohydrates, such as pasta and bread, before a marathon run. This is known as 'carbo-loading' and it ensures that their energy supply will not run out during their event.

6.3.1 Athletes consume carbohydrate-rich foods to fill their cells with glucose energy.

UNIT REVIEW

Looking back

1. List three protein foods.
2. What are the functions of vitamins?
3. List two important minerals and identify foods they are found in.
4. List three food sources of carbohydrates.

For you to do

5. Investigate two foods, other than those listed in this unit, that are good sources of Vitamin C.
6. Create a web page on 'The six food nutrients'. Use software such as Adobe® Dreamweaver® or Microsoft® FrontPage® and work in pairs. Link at least one page to each nutrient and include a variety of information, pictures and interesting facts. Present this to the class using a data projector or save it on a local network for your classmates to see.

Taking it further

7. Research the effects of consumption of an inadequate quantity and/or quality of protein. Use a variety of nutrition-based websites to assist your research.

Tip
Use the search words 'protein deficiency'.

6.3.2 Nutrients

Nutrient characteristics	Functions in the body	Food sources
Protein There are two main types: complete proteins and incomplete proteins. Complete proteins contain all of the eight essential amino acids required from food because the body cannot make them. Incomplete proteins lack at least one of the eight essential amino acids.	• Constituent of all body cells. • Building and repair of all hard and soft body tissue such as bone, teeth, muscle tissue and organs. • Required to make enzymes, antibodies, hormones and haemoglobin.	• Complete protein is found mainly in foods of animal origin: meat, fish, eggs, milk, cheese and yoghurt. • Vegetable sources mainly provide incomplete protein: nuts, pulses, seeds, wholegrain cereals and vegetables.
Carbohydrates There are three types of carbohydrates: simple sugars (monosaccharides and disaccharides), complex carbohydrates and dietary fibre. Simple sugars and complex carbohydrates are broken down into glucose during digestion. This is used by the cells of the body for energy.	• Source of energy in all cells of the body. • Glucose, which is not used by the body for energy, is converted into glycogen and is stored in the liver and muscles as an energy reserve. • Dietary fibre is not absorbed by the body. It adds bulk and helps to sweep the digestive tract. • Carbohydrates provide 16 kJ of energy per gram.	• Complex carbohydrates (which are usually high in dietary fibre) include wholegrain breads and cereals, rice, pasta, breakfast cereals, vegetables, legumes and fruits. • Foods supplying simple sugars include cakes, pastries, desserts, confectionery and aerated drinks. These should be consumed in limited amounts.
Lipids Lipids (also known as fats) come from both animal and vegetable sources. Animal fats are usually solid, high in saturated fat and should be eaten in limited amounts because of the high level of cholesterol. Fats from vegetable sources are usually liquid (oils) and provide mostly monounsaturated and polyunsaturated fatty acids, which do not increase cholesterol levels.	• Lipids are the most concentrated source of energy, providing the body with 37 kJ per gram, more than twice the amount of energy provided by protein or carbohydrates. • Fats are an important source of fat-soluble Vitamins A, D, E and K. • Omega-3 fatty acids are needed for development of the brain and retina of the eye. • Omega-6 fatty acids are needed for the formation of all cells of the body.	• Saturated fats: butter, lard, meat, dairy products, palm oil, coconut oil and chocolate. • Monounsaturated fatty acids: olive oil, canola oil, avocado and nuts. • Polyunsaturated fatty acids: most vegetable oils, oily fish and fish oils. • Omega-3: soy bean and canola oil. • Omega-6: olive and sunflower oils.
Vitamins There are two main groups of vitamins: the fat-soluble Vitamins A, D, E and K and water-soluble Vitamins B and C. Most vitamins cannot be made by the body and must be found in food. Vitamins are micronutrients because they are only required in small amounts.	• Vitamins are involved in a range of essential functions, including normal cell division and growth, the absorption of other key nutrients, the production of hard and soft tissue, the production of energy, healing wounds and burns and the development of good eyesight.	• Fat-soluble vitamins are found in fish oils, milk, butter, cheese, eggs, vegetable oils, nuts and green leafy vegetables. • The B Group vitamins are found in dairy products, lean meat, fortified breakfast cereals and vegetables. • Vitamin C is found in citrus fruits, strawberries, kiwi fruit and capsicum.
Minerals Minerals are only required in minute amounts in the body. Some Australians' diets are deficient in iron, calcium and zinc.	• The main minerals required by the body are calcium, iron, chloride, phosphorus, magnesium, potassium, sodium, sulphur and zinc. • Minerals perform many functions in the body. Calcium, for example, is essential for the formation of bones and teeth, iron is essential for the formation of haemoglobin in the blood, and chloride acts with potassium and sodium to maintain fluid and electrolyte balance in the body.	• Calcium: milk, yoghurt, cheese, nuts, fish and soy beans. • Iron: red meat, oysters, fish, chicken, breakfast cereals, lentils, vegetables and dried apricots. • Magnesium: wholegrain cereals, nuts, pulses and green leafy vegetables. • Potassium: plant foods such as avocado, nuts, seeds and wholegrain cereals. • Zinc: shellfish, whole grains, lean meat, poultry, eggs and dairy products.

Source: Adapted from G. Heath, H. McKenzie & L. Tully, *Food Solutions*, Pearson Education Australia, 2002, pp. 258–9

RECIPE

PLUM PORK AND VEGETABLES
p. 325

6.4

Nutritional needs

CORE

UNIT 2.10

Facts that affect nutritional needs

Each person requires different quantities of each nutrient, depending on factors such as age, gender, size, activity level, health and hunger.

Age

Children and adolescents are growing rapidly, so it is understood that they require large amounts of nutrients, such as protein, for new body cells and carbohydrates for supplying energy. Elderly people must maintain their body cells, particularly their bones and muscles. In this case, minerals such as calcium are especially important.

Gender

Men are generally more active than women and larger in size, so they require more energy foods that supply fat and carbohydrate. On the other hand, women menstruate every month and may undergo childbirth, so their iron requirements are often greater than those of a man.

Size

Larger people require more nutrients in order to function normally. Smaller-framed people do not need to carry a heavy body around, so need less food. Think about a car and its petrol usage. A small hatchback requires only a small amount, while a station wagon requires a large quantity.

Activity level

In order to be active, people require food as fuel. A person who lives an inactive lifestyle requires fewer nutrients than a physically active person needs. If you were an Olympic swimmer, you would need to eat a lot more food to be able to meet the physical demands placed on you.

Health

People who have diet-related health concerns could require more or less of certain nutrients. For example, those who suffer from osteoporosis must consume a larger than normal intake of calcium. Those with anaemia must consume larger quantities of iron. Those suffering heart disease or high **cholesterol** must reduce their intake of saturated fat.

Hunger

The feeling of hunger is the signal that is sent from the brain to tell the body that it needs to receive **sustenance** in order to perform properly. When your body becomes hungry, you begin to feel tired, sick, irritable and empty in the stomach. Every individual feels hunger at their own rate. Have you ever felt very hungry at morning tea and wanted to eat your lunch then? Hunger is not the same as appetite. Appetite is the desire to eat, even when you are not hungry!

Other special circumstances

In some circumstances an individual may need more or fewer food nutrients. Consider a pregnant woman who is required to provide nutrients for a growing foetus. The body provides this need by allowing for the delivery of nutrients to the baby via the mother's bloodstream. Calcium, protein, B Group vitamins and minerals are essential for the mother at this stage. She must ensure that she consumes the correct quantities of each nutrient to avoid deficiency in herself and her baby.

6.4.1 Elderly people must consume calcium-rich foods to maintain bone denisty.

cholesterol: constituent of some fats that sticks easily to the walls of the arteries

sustenance: nourishment in the form of food

PP Web Destination

Recommended dietary intakes for various life stages

As you grow and develop you require different quantities of each nutrient. Your requirements depend not only on the factors already discussed, but also on the stage of the life cycle that you may be at.

People need to have a general idea of how much of each nutrient they should be consuming. The specific quantities of each nutrient needed for each group of people are called Recommended Dietary Intakes (RDIs). These are the levels of daily intake of essential nutrients needed to meet the nutritional needs of the body. Look at RDI tables for a few selected nutrients. In which group do you belong? What are your particular nutrient needs?

6.4.2 Recommended Dietary Intakes

Infant (7–12 months old and on a solid diet)

Protein	1.2–1.6 g per kg of body weight
Energy	400 kJ per kg of body weight
Calcium	550 mg
Iron	9 mg
Magnesium	60 mg
Vitamin B1	0.15 mg
Vitamin C	30 mg

Young child (4–7 years of age)

Protein	18–24 g
Energy	7200 kJ
Calcium	800 mg
Iron	6–8 mg
Magnesium	110 mg
Vitamin B1	0.7 mg
Vitamin C	30 mg

Adolescent (12–15 years of age)

	Female	Male
Protein	44–55 g	42–60 g
Energy	10 400 kJ	12 200 kJ
Calcium	1000 mg	1200 mg
Iron	10–13 mg	10–13 mg
Magnesium	240 mg	260 mg
Vitamin B1	1.0 mg	1.2 mg
Vitamin C	30 mg	30 mg

Adolescent (16–18 years of age)

	Female	Male
Protein	57 g	64–70 g
Energy	9200 kJ	13 500 kJ
Calcium	800 mg	1000 mg
Iron	10–13 mg	10–13 mg
Magnesium	270 mg	320 mg
Vitamin B1	0.9 mg	1.2 mg
Vitamin C	30 mg	40 mg

Adult (19–54 years of age)

	Female	Male
Protein	45 g	55 g
Energy	7200–11 300 kJ	10 900–13 700 kJ
Calcium	800 mg	800 mg
Iron	12–16 mg	7 mg
Magnesium	270 mg	320 mg
Vitamin B1	0.8 mg	1.1 mg
Vitamin C	30 mg	40 mg

Pregnant and lactating (breast-feeding) woman

	Pregnant	Lactating
Protein	+ 6 g	+ 16 g
Energy	+ 8500–11 000 kJ	+ 20 000–40 000 kJ
Calcium	+ 300 mg	+ 700 mg
Iron	+ 10–14 mg	+ 12–16 mg
Magnesium	+ 30 mg	+ 70 mg
Vitamin B1	+ 0.2 mg	+ 0.4 mg
Vitamin C	+ 30 mg	+ 45 mg

Older people (55+ years)

	Female	Male
Protein	45 g	55 g
Energy	6500–9300 kJ	7400–11 000 kJ
Calcium	1000 mg	800 mg
Iron	5–7 mg	7 mg
Magnesium	270 mg	320 mg
Vitamin B1	0.7 mg	0.9 mg
Vitamin C	30 mg	40 mg

Source: Adapted from the National Health and Medical Research Council website

Many athletes, such as cricketers and ironmen, claim to eat ten to fifteen times the average amount of breakfast cereal daily. Generally they burn up the extra kilojoules during their exercise and training routine. Imagine if you ate ten times your normal cereal intake every day!

There are many different types of vegetarians. The strictest vegetarians are known as vegans. Vegans do not eat any animal products or animal by-products, such as milk from a cow or eggs from poultry. Some vegans will not even consume honey!

Web Destination

People with special nutritional needs

Many people in society have special nutritional needs that do not necessarily correspond with the RDI tables that you have looked at. Some special nutritional needs may be determined by factors such as health, beliefs or values.

Vegetarians do not eat flesh foods, such as red meat and poultry. The reason for their dietary requirements may be religious or based on their own beliefs, attitudes and health ideas. These people will have special dietary needs for protein, iron and B Group vitamins because flesh foods are completely absent from their diet.

Obesity sufferers have a high percentage of body fat and are required to cut down on food intake and increase exercise levels to try to overcome this nutritional disorder. These people may require a reduced intake of kilojoules in their diet.

Hands on

Planning diets for different people

Purpose

This activity is designed for you to use your research skills to investigate the nutrient needs of a particular group. Using this information you will then design, prepare and justify a nutritionally balanced meal.

Materials

RDI tables and recipe books

Web Destination

Steps

1. Study the RDI tables for your selected group and determine their nutrient needs.
2. Plan a complete lunch or dinner menu. You should set two to three courses and include beverages.
3. Select one part of this menu to prepare in class. Fill out a food order and complete the practical in class time.

Activities

1. In one to two paragraphs, summarise the nutrient needs of your groups.
2. Justify your choice of each food on the menu. Hand this to your teacher for marking.
3. Evaluate the success of your practical lesson. What went well? What looked good? What would you change or improve? Did you have any difficulties?

RECIPE

QUICK VEGETARIAN PIZZAS p. 326

Rosemary Stanton—nutritionist and dietitian

Practitioner focus

Dr Rosemary Stanton is Australia's best-known nutritionist. She is author of 24 books, including nutrition text books as well as recipe books. She has also written over 2900 articles to magazines and newspapers throughout Australia and New Zealand, features frequently on radio and television and lectures to medical students, doctors, teachers, nurses, sporting groups and to the general public.

Rosemary has a science degree in biochemistry and pharmaceutical chemistry, postgraduate qualifications in nutrition and dietetics and a graduate diploma in administration.

As a practising nutritionist, Rosemary has a consulting business which services clients such as State and Commonwealth government departments, sports associations, primary industry groups, sections of the food industry and a major retailer. Her role within these groups is to further the aims of educating the public about food and nutrition. She has a close relationship with customers and their viewpoints, and is a spokesperson that is not beholden to any one interest group.

Rosemary Stanton was involved in one of the first school canteen surveys in NSW in the 1960s. She believes that school canteens are ideal to foster healthy eating habits in children.

With the growth in obesity levels in Australia, Rosemary is trying to educate people to stop eating so much processed junk, eat less and, of course, be more physically active. Rosemary doesn't agree with dieting, as she believes that a temporary diet or eating plan won't keep weight off in the long term, and that people need to change their eating and exercise habits permanently.

As a member of many professional associations such as the Dietetics Association of Australia, the Nutrition Society, the Australian Institute of Food Science Technology, the Gut Foundation and the Australian Health Communicators Association (just to name a few), it is Rosemary's main aim to change poor eating habits of Australians so that people have healthier diets and eat more enjoyable foods that create minimal environmental damage.

Source: Adapted from information on the AIHW website

6.4.3 Dr Rosemary Stanton

Activities

1. Give details of how Rosemary Stanton educates the public. Explain why her role is important.
2. Why do you think Rosemary does not believe in diets?
3. Interview friends and family to ask if and when they have heard of Dr Rosemary Stanton. Provide examples of food- and nutrition-related issues she has been involved in.
4. Create a report on one of the professional associations or consulting groups that Rosemary is involved with.

UNIT REVIEW

Looking back

1. List the seven factors that affect nutritional needs.
2. Explain how age affects our nutritional needs.
3. What does RDI stand for?
4. Give another term for lactating.
5. How much protein does a pregnant woman need to consume?

For you to do

6. Explain why women might need more iron than men.
7. Design and print an information sheet for a medical practice that will help vegetarians select a healthy, nutritious and balanced diet.
8. Create a table in your notebook showing each major life stage and a summary of the nutrient needs of people at that stage in life.
9. Analyse your current canteen menu. Write a proposal to send to the principal or canteen manager expressing the need to update the canteen menu. Make sure you comment on the poor nutritional value of any unhealthy foods that are sold and suggest healthy alternatives.

Taking it further

10. Look at the tables listing the required Vitamin C for a pregnant woman. What does 30+ mg mean? Explain in your own words.
11. Select ten to fifteen meals that would be nutritious enough to serve infants at a childcare centre. Plan a weekly lunch menu that may be used to provide these infants with a balanced, nutritious diet each day.
12. Plan a new canteen menu for your school. Ensure that foods are nutritious and exciting. Try not to include any junk foods.
13. Present an oral report on the special nutritional needs of someone with anaemia. Research this by using a variety of nutrition-based websites.

Factors that influence food habits

6.5

Many factors influence what and when we eat. Think about your own eating habits. What factors influence how you select food to eat? Discuss this as a class and brainstorm your ideas.

Social practices

The society in which you live has a great impact on your eating patterns and habits. Social influences can be seen in a variety of situations. For example, when your family eats dinner, you often eat what they eat and when they eat. Some families have takeaway every Saturday night, while others have a baked chicken dinner early every Sunday evening. However, the trend of eating together as a family is changing due to our modern lifestyles and personal activities.

Peer pressure in society can affect when and what you eat. If your friends are eating something interesting from the canteen at morning tea, you may be influenced to purchase the same thing.

In many countries, people eat a large lunch that is followed by a nap or short sleep. In the evening, only a small meal is eaten.

Religion

Religious ties can have a direct impact on the food choices and habits of an individual. Religious restrictions or taboos may dictate food habits. For example:

- Jews do not consume meat and milk in the same meal
- Jews and Muslims do not eat any pork products
- Muslims fast for one month every year
- Hindus do not eat beef
- Christians do not eat meat on Good Friday.

Geographic location

Where you live has a great impact on your food habits. Consider the following examples.

- Certain foods cannot be grown in certain areas. Strawberries cannot be grown in areas that encounter cold frosts, as such conditions cause damage to the quality of the fruit. Wheat grows in hot, mostly dry conditions.
- Some isolated places do not get regular fresh food deliveries. If you lived in the desert of Central Australia, you would be lucky to receive a delivery of fresh fruit and vegetables once a fortnight!
- Climates in certain areas restrict food availability. Tropical fruits are available in warm conditions, but are hard to obtain at any other time of the year. It is unlikely that you would be eating fresh mangoes in the middle of winter, as the supply would be limited and the cost would be prohibitive. Drought or flood in an area can affect foods available. This could have a great impact on food supply and food cost.
- The landforms, soil types and frequency of rain in all continents of the world are different, and the conditions in each region will dictate which foods can be grown successfully.

6.5.2 Mangoes grow best in warm, tropical climates. This is an example of a climate and geographic location that could influence food habits.

6.5.1 Vegetarians consume these types of foods to meet their dietary needs.

Fresh meat is not always available in Mexico, so people eat corn tortillas such as burritos or tacos with bean filling. Together the corn and beans provide a complete source of protein.

Economic situation

The financial state of a country and employment levels for its population will determine the foods available to people. In some countries, some people can only afford to eat once per day, or even less, whereas in Australia we can generally afford to eat three good meals each day. The type of job you have and the amount of money that you earn will affect what you tend to eat. If you earn a lot of money you have the option to select fillet steak over chuck steak, brie cheese over cheddar cheese and lobster over leatherjacket.

6.5.3 A corn tortilla with bean filling

Some countries are unable to grow certain food crops, so must buy or import these foods from other countries. They are usually expensive to purchase.

If a country is at war, government money may be directed towards military uses rather than the provision of food. This then limits the food available to people.

FOOD IN FOCUS

Scheme looks to teach healthy eating

A free 10-week program will be run in Broken Hill by Greater Western Area Health to help children in the area become fitter and healthier.

The Go 4 Fun program, which is funded by the New South Wales Government, teaches children and their families how to make healthier food choices and how exercise can be fun.

The team leader of dietetics at the Broken Hill Health Service, Tracy Herlihy, says one in four children across Australia are classed as overweight or obese.

'Their eating habits have changed, a lot of processed foods are actually given to children or used to provide their meals and the other thing is this lack of exercise, so kids now are spending more time in front of a screen, so whether it be computers, video games or TV and less time being active and so we've seen a slow rise of children I suppose their size getting bigger,' she said.

The program will begin at the start of term three, with two sessions being run a week.

Source: ABC, 10 June 2010

Activities

1. How many children in Australia are classed as overweight or obese?
2. Identify two reasons why children in Australia are becoming overweight or obese.
3. If you were creating this ten-week program, what recipes would you teach children to make for their lunch?
4. What strategies would you recommend to parents to help children take more exercise and watch less TV?
5. Create a ten-week program for Years 5 and 6 children in your area to encourage them to exercise and eat healthy food. Tap into any local resources such as parks, farmers' markets etc.

Technological developments

The level of technology that is available has a great impact on our food habits. Consider the following.

- Farming technology means that food can be grown, harvested and processed faster than ever before. Food is then easier to obtain and less expensive in the long run.
- With the introduction of microwave ovens and microwaveable meals, foods can be just heated and eaten. This technology has changed family eating habits. Can you see how?
- Appliances such as breadmakers, coffee machines, blenders and sandwich grills mean that you are able to produce fresh, restaurant-quality meals in your own home, quickly and easily. Why buy bread from the local supermarket when you can bake your own bread and have it fresh every morning without leaving home?
- Internet shopping technology has meant that people do not have to leave home to purchase their foods. Now you can select your favourite fresh and processed foods online and have them delivered to your door rather than drive to the supermarket, line up to pay and carry your own groceries.

Individual preferences

Your individual preferences are shaped by many factors.

- **Your past experiences:** past experiences can have a great impact on what you do and don't want to eat. Were you force-fed a certain food as a child? Do you like eating a particular food because it reminds you of an enjoyable event?
- **Your ideas and beliefs:** some people do not eat meat because they have strong beliefs in animal rights. Others eat lots of fresh foods and limit fatty and sugary foods because they wish to keep their bodies in a state of good health.
- **Your health:** many people suffer from allergies and intolerances, and this will in turn affect what they choose to eat. If you suffer from a peanut allergy, you would obviously not consume a spread such as peanut butter.
- **Your individual needs:** every individual is different and has their own special needs. For example, some people need to consume more water and fibre than others in order to keep their bodies functioning.

6.5.4 Technological developments have had a great impact on our food habits.

6.5.5 Poor dietary habits are portrayed in the media, particularly in magazines and on television.

Mass media

The media are responsible for advertising, marketing and reporting on issues in today's society. You cannot avoid being exposed to persuasive marketing through television, magazines, newspapers, radio and the internet. Slogans and jingles are always there to remind you of particular foods. Multinational food companies such as McDonald's advertise in public locations, billboards and bus stops, so that you are constantly aware that these foods are available.

Advertising makes use of unrealistic and manipulated body images, mainly in magazines and television targeted at teens and young adults. A thin model is often shown eating food such as pizza or fried chicken. Models do not usually have curvaceous hips and breasts, so many teenagers start to become unnecessarily concerned about their body image. Girls often cut out meats and carbohydrate foods, leaving them lacking in iron and energy.

UNIT REVIEW

Looking back

1. List seven factors influencing food habits.
2. Give an example of how society influences food habits.
3. Explain how religion affects food habits.
4. Give an example of how individual preferences might influence eating habits.
5. Divide a poster into seven sections. Head each section with one of the seven factors influencing food habits. Under each heading provide a description and one to two examples.

For you to do

PP Web Destination

6. Name one food that is not available in a certain geographic area.
7. Provide your own example of how you think the media might influence eating habits.
8. Create a collage depicting how the media presents distorted body images to young people.
9. Design a list of instructions to help an elderly person shop on the internet. You may need to first investigate an online supermarket such as Coles or Woolworths. Do not log on or register during this activity.

Taking it further

10. Investigate three other technological appliances that are now available to us that could alter our food habits.
11. 'Our food habits are determined by many factors. Every individual around the world responds to different influences that affect what, when and how they eat.' Write a two-page response to this statement. Make sure you plan your answer first. Find the key words, use examples to support your argument, and use your own words.
12. Investigate new technologies in food manufacture and food packaging. Select one relatively new technology for each and provide a one-page summary sheet to be handed out to your class. Use a variety of food magazines, journals and internet sites to assist you.

Nutritional implications of food consumption patterns

6.6

CORE

UNIT 2.6

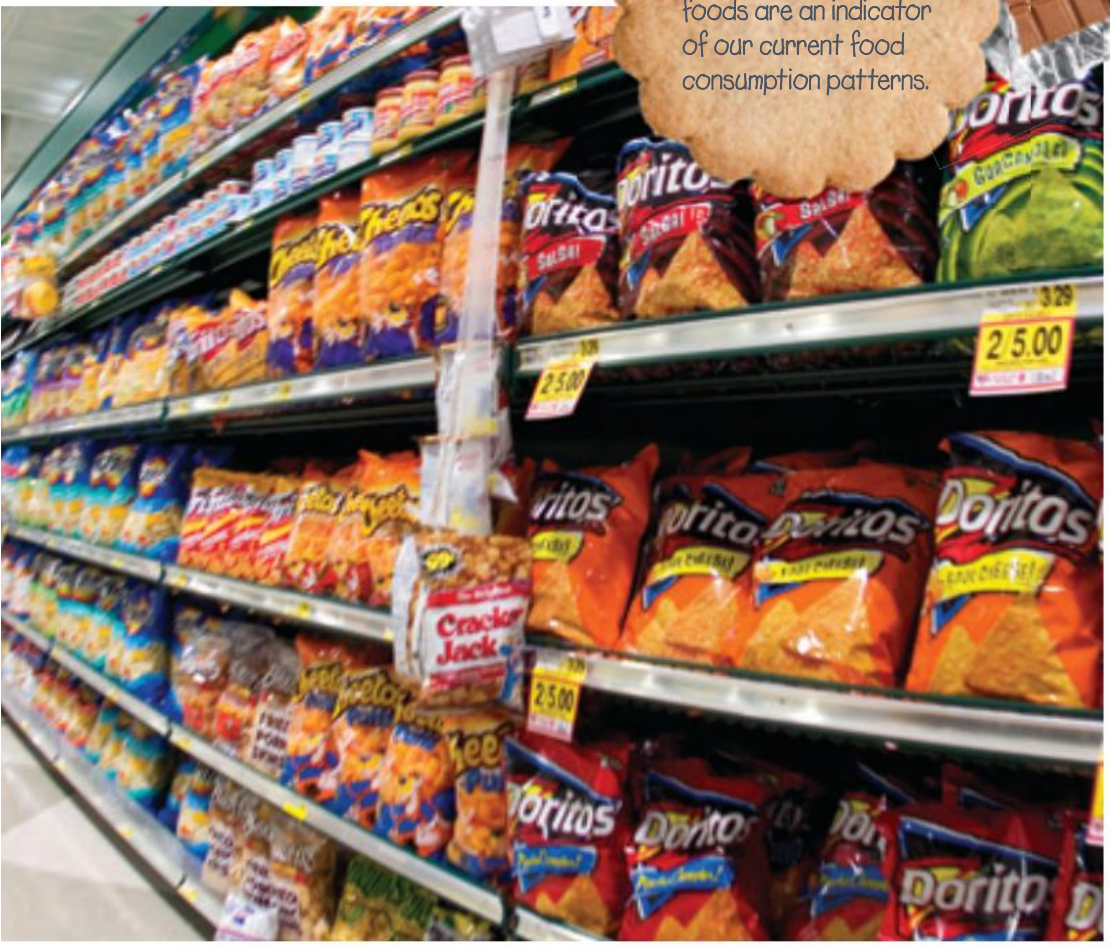
Undernutrition and overnutrition

We must be able to find the correct balance when it comes to food quantities. Having just the right amount of food is the key to good health. Too much or too little food can lead to some serious health issues.

Most people in our country have enough money to supply their basic dietary needs—undernutrition in Australia is often the result of conditions such as **anorexia nervosa**, anaemia, osteoporosis and bowel disorders such as diverticulitis.

Undernutrition is commonly seen in developing countries, where people suffer from a lack of nutrients such as protein and energy from carbohydrates. They have difficulty meeting their dietary needs and are underweight and **emaciated**.

The main problem that Australians increasingly face today is excessive consumption of food, or overnutrition. We are constantly bombarded with advertising for exciting, convenient foods to try. It is important to stay focused and take control of what you eat. Overweight, obesity, heart disease and diabetes are becoming serious health issues in Australia. Modern lifestyles, sedentary forms of entertainment such as gaming consoles and DVDs, cars, the internet, fast foods and a lack of education all contribute to the problems.



6.6.1 Supermarket aisles dedicated to snack foods are an indicator of our current food consumption patterns.

6.6.2 Overnutrition is common in Australia today.

PP Web Destination

anorexia nervosa: psychological condition whereby sufferers intentionally deny themselves nutritious food in an attempt to obtain an unrealistic body image

emaciated: very lean or underweight through lack of food

FOOD IN FOCUS

Fat labelling key to healthy eating: Heart Foundation

Barbara Miller

TONY EASTLEY: If you want to stay healthy, apparently stay at home.

That's the message from the Heart Foundation, which says while many consumers are buying healthier oils for home use, the catering industry is still relying heavily on cheaper saturated fats.

The foundation will tell the World Congress on Oils and Fats in Sydney today that the industry has run out of excuses for not switching to healthier alternatives.

Barbara Miller reports.

BARBARA MILLER: Consumers can often be found in supermarket aisles scrutinizing ingredients lists but they usually don't have that option when they dine out or buy take-away food.

The Heart Foundation says that's not good enough.

Susan Anderson is the foundation's director of healthy weight.

SUSAN ANDERSON: Unfortunately most of the outlets are using fats that are very high in saturated fats. Some of them are up to about 50 per cent, whereas there are healthier options available at saturated fat levels of 7 per cent.

BARBARA MILLER: Don't you think most people know though that restaurants and takeaway outlets wouldn't perhaps use the same oils that they use at home?

SUSAN ANDERSON: Well, many of the outlets advertise that they use a vegetable oil but vegetable oils can still be very high in saturated fat. For example, something like palm oil, which is imported into Australia, has about 50 per cent saturated fat.

BARBARA MILLER: Do you think the industry is trying to deceive consumers?

SUSAN ANDERSON: Well, I think they are not being transparent but I think we would really love the fast food sector and the food service industry to switch to these healthier oils. They have got great functionality and of course, they are better for Australians' health.

BARBARA MILLER: But the industry says many outlets are switching voluntarily anyway to healthier alternatives and that to enforce labelling would be too expensive.

John Hart is the CEO of Restaurant and Catering Australia.

JOHN HART: We can't afford to be able to introduce requirements of labelling of any sort that will make the cost of product prohibitive and we still all want to be able to go out and get take away or get a restaurant meal whenever we want to.

BARBARA MILLER: John Hart says once you start dictating what ingredients can be used, it would be hard to know where to draw the line.

JOHN HART: The problem is that it is the thin edge of the wedge and what we need to do is keep the options open to business and not close off what ingredients they use. I mean, if it starts with a particular type of oil, then it will be a particular type of butter, a particular type of margarine, a particular type of beef, a particular type of lamb and where does it end?

What we need to do is ensure that businesses have choice and that we're not limiting what businesses can do or increasing costs to a point where it becomes prohibitive for consumers to eat out.

BARBARA MILLER: But Susan Anderson says she doesn't buy those arguments.

SUSAN ANDERSON: Well, that's not true these days. We have a lot of supply of Australian oil seeds that have a healthy nutrition profile. They're used by some of the leading fast food chains who have made the switch so really that's just an excuse.

BARBARA MILLER: Food Standards Australia New Zealand says saturated fats and trans-fatty acids shouldn't make up any more than 10 per cent of daily energy intake

The Heart Foundation says many people are consuming twice that amount.

Source: AM, 29 September 2009

Activities

1. List the arguments for and against food labelling.
2. Why is the term 'vegetable oil' misleading for consumers? Give an example to support your answer.
3. Write a letter to Restaurant and Catering Australia, suggesting ways in which they could change the oils they use or make consumers more aware about the amount of fat in a product.

Hands on

Overnutrition

Purpose

To investigate dietary conditions relating to overnutrition.

You will select one condition such as diabetes and prepare a Microsoft® PowerPoint® presentation aimed at educating Australians on the condition, how it occurs and how it can be treated through good dietary practices.

Materials

Textbook, pen and paper, library nutrition resources such as books, magazines and journals, internet access and access to PowerPoint®

Steps

1. Select a condition of overnutrition and research it using a variety of sources. (Don't forget to record the details of each source because you will need to prepare a bibliography at the end of your presentation).
2. Determine which information is interesting and informative enough to include in your presentation.
3. Start working in PowerPoint® and use a combination of text and graphics. Experiment with sound and special effects.

RECIPE

EASY LASAGNE AND GARDEN SALAD p. 327

UNIT REVIEW

Looking back

1. What is the main nutritional problem in Australia today?
2. Where is undernutrition mostly seen?
3. Why are many Australians overweight and obese?

For you to do

4. In pairs, design a brochure aimed at educating Australians on how to eat the right quantity of the right foods. Make it as interesting and colourful as possible. Print the brochure in colour if possible and display it in your classroom.

Taking it further

5. List some diet-related disorders that might be linked to overnutrition.
6. What other health problems could occur if a person suffered from undernutrition?

6.7

Response to general nutrition levels

6.7.1 Unhealthy snack foods are readily available to some children at school.

Social, political and manufacturing directions

Society's response

As a society, we must take responsibility for the foods we eat and our state of health. We ultimately decide what goes into our mouths. As the level of health is falling nationwide, we must try to be more conscious of what we should and shouldn't eat.

Society needs to become more educated about healthy foods. Speaking up about nutrition issues is a way to show that we are dissatisfied. If healthy food is not made available to us, we have no option but to select from unhealthy alternatives.

Consider the school canteen. If the foods available to students include fast foods such as meat pies, crisps, soft drinks and sweet pastries, good, wholesome foods are often crowded out of the canteen menu. Students have no other choice but to purchase these less nutritious items.

FOOD IN FOCUS

Health Nazis losing obesity war as pies return to school canteens

Bruce McDougall

The Aussie pie, pizzas and sausage rolls are back in school canteens as the war against child obesity falters and threatens to collapse.

Lollies, ice-creams, chips and even banned sports drinks have also re-emerged on school menus because thousands of families are snubbing healthier foods.

Nutritionists and dietitians are desperately trying to rescue the $750 000 school health campaign launched five years ago by former premier Bob Carr.

They are offering 'low-fat' Aussie beef pies, pizzas made with wholemeal pita bread and vegetables and chicken burgers to children who turn their noses up at salad wraps.

In a bid to reverse the trend the Healthy Kids School Canteen Association is taking over some school food operations.

Canteens hit by the global recession claim profits have been eroded and students resist low-fat menus.

While most sugary drinks are banned from school canteens, the food industry has manipulated some products to get round the rules.

To get a non-milk based gelato accepted, the manufacturer added calcium and reduced the portion size.

Banned Powerade became 'Powerade Light' and juice was carbonated in a can so children would think it was soft drink. Under the nutrition rules, foods are divided into red (no more than twice a term), amber (to be selected carefully and in smaller servings) and green (fill the menu) categories.

But enforcement has been almost non-existent and the Catholic and independent school sectors are not bound by them.

Source: Adapted from *Daily Telegraph*, 15 June 2009

Activities

1. Which foods have been banned at your school canteen?
2. Why might children 'snub' healthier foods?
3. What healthy foods would you like to see sold in your school canteen?
4. Research the red, amber and green food categories and list foods found in each group.
5. Interview a parent and determine their understanding of the role of the school canteen.

FOOD IN FOCUS

Three steps to a thinner child

Peter Lavelle

Parents can help their children to lose weight by introducing three simple family routines, researchers say.

If your children are overweight, what do you do about it? Well, of course, you restrict their diet and you encourage them to exercise.

Mind you, that's easier said than done. It's tough getting kids to eat a balanced diet when so many of them hate the taste of healthy food and there is so much junk food readily available. And establishing an exercise regime is hard enough for an adult without the added distractions that kids get—TV, internet, Wii games, etc. It's enough to drive parents to distraction.

But it's important that parents address weight problems in their kids, as obese kids tend to grow up to be obese adults. And obesity in adulthood causes a host of health problems, such as increased likelihood of stroke, heart attack, cancer and many other conditions.

So parents with obese kids might be interested in US research that found preschool children are less likely to become obese if they: eat dinner with their family, get enough sleep and are only allowed to watch a limited amount of television.

Three family routines

Researchers from Ohio State University and Temple University in Philadelphia looked at 8550 US children, born in the year 2000 (using data from the National Center for Education Statistics in the US) The researchers wanted to know how often the children were engaged in three household routines:

- eating the evening meal as a family more than five times per week
- getting at least 10 1/2 hours of sleep per night
- watching less than two hours of TV per day on weekdays.

The researchers correlated this information with the children's body mass index (BMI), which is a measurement of obesity. (Previous studies had linked childhood obesity to these behaviours individually. This is the first to assess the effects of all three routines, the researchers say.)

Overall, about 18 per cent of the children in the study were obese. In households where children didn't follow any of the routines, almost one in four of the children (24.5 per cent) were obese.

But in households that practised all three routines, only 14.3 per cent of children were obese. That's about a 40 per cent reduction in the risk of obesity from following these measures, they say.

Adopting these three routines seemed to overrule other risk factors for being overweight, the researchers found. So even when children were already at higher risk for obesity because of other factors—such as having obese mothers, having a household income below the poverty line, and growing up in a single-parent home—the association with these routines had a protective effect.

However, in some of the families, children were obese even if their family practised all three routines.

What was it about these habits that helped keep children's weight down? It wasn't the quality of the television programming or the convivial conversation at the dinner table. It was the fact that the children snacked less on high-calorie foods if they were eating regularly with the family. And if they watched less TV they were more likely to be active and less likely to be sedentary.

Good advice

Professor Lousie Bauer, director of the Physical Activity, Nutrition and Obesity Research Group at the University of Sydney, says that the study is also relevant for Australian parents too.

'I'd encourage parents to follow these straightforward routines. There is good evidence to say that this is useful for all family members, not only in terms of having a healthy weight, but also in terms of improved mental health and general wellbeing,' she says.

But she says parents also need to provide healthy food choices for their children. This includes providing water to drink, making sure the child eats breakfast and providing healthy snack choices, she says.

'If parents are concerned that their child might have a weight problem, then I would encourage them to speak with their family doctor about this as some families and children may need individualised advice,' she says.

Source: ABC, 20 May 2010

manufacturer: business involved in the making, processing or production of goods

Manufacturer's response

Food **manufacturers** must also take some responsibility. Society's concern over nutrition levels has led to improved food standards in the marketplace, such as:

- clear, informative and detailed food labels—for example, many now display the percentage of Recommended Daily Intake (RDI) of energy, fat, carbohydrates etc.
- more nutritious convenience foods sold through supermarkets—for example pre-prepared salads and low-fat microwave meals
- modified versions of existing food products such as low-fat, salt and sugar—for example low-salt margarines, low-fat yoghurt and reduced sugar and reduced fat chocolate bars
- controlled portion sizes—for example snack-sized potato chips and smaller chocolate bars
- product and company information available over the internet—many companies will offer extra nutrition information via their website, particularly if the information does not fit onto a small food package
- the creation of company nutrition policies—these are often displayed on a food manufacturer's website
- improved menus at fast-food and takeaway outlets—for example McDonald's 'healthy choices' menu offering salad wraps, apple slices, bottled water and low-fat yoghurt.

FOOD IN FOCUS

Action call on fast-food ads

Susie O'Brien

Irate parents sick of pester power want the federal government to outlaw characters and toys used to sell fast foods.

And there are new signs the government might be listening to them.

Popular characters from movies such as **Shrek, Monsters vs. Aliens** and **Batman** are regularly used to market foods that are high in salt, fat and sugar to children.

And more than half [of adults] want the government to bring in a total ban on such advertising.

The results come as a government inquiry issued a warning to the fast-food and grocery industries, insisting they bring in more stringent self-regulation or face a mandatory crackdown.

The House of Representatives inquiry into obesity was chaired by Labor MP Steve Georganas, who yesterday said new standards were needed.

'The government is committed to tackling the obesity problem and will do whatever it takes,' he said.

Jane Martin, senior policy adviser to the Obesity Policy Coalition – a lobby group that includes the Cancer Council and VicHealth – said government regulation was necessary … [but] 'self-regulation is woefully inadequate to protect children.'

Source: Adapted from *Herald Sun* (Melbourne), 9 June 2009

Activities

1. Name food companies that use toys as tactics to lure children.
2. What other methods of advertising do food companies use to attract young children?
3. Do you agree that strict regulations should be implemented? Why/why not? Do you think food industry self-regulation could work?

FOOD IN FOCUS

Junk food ads hard to defend, inquiry told

Emma Rodgers

A Senate inquiry is hearing evidence on junk food advertising aimed at children (AFP)

The Australian Psychological Society has told a Senate inquiry there is almost no justification for continuing to allow junk food advertising to be directly aimed at children.

The Inquiry into Protecting Children from Junk Food Advertising is examining a bill put forward by Greens Senator Bob Brown, which would ban all advertising of junk food on free-to-air television during certain times.

The Australian Psychological Society's Professor Debra Rickwood has told the inquiry that evidence shows the amount and influence of junk food advertising strongly influences what children want to eat, and the younger the child, the greater the impact of advertising.

'It's very hard to argue that advertising of foods high in sugar, fat and salt to children is not an area of significant influence,' she said.

'The evidence is so strong regarding the impact of advertising on children that it's hard to imagine a defensible argument in favour of continuing such advertising in terms of the influences on children's health.'

While Professor Rickwood admits that several factors contribute to childhood obesity, she says children are 'awash' with advertising which promotes the idea that junk food is normal.

'The pervasive view and impression that people are getting is that these are the foods that are out there,' she said.

'They're being bombarded with messages of these foods ... these are the fun foods, these are the ones people notice.

'We have strong evidence in psychology [that] the more familiar you are with something the more you like it.'

Professor Rickwood also told the inquiry that many psychologists work in marketing because techniques used to change behaviour are highly sought after in the industry.

'The marketing of junk food to children uses most of the psychological and social techniques that we know to be effective in changing behaviour,' she said.

However, industry spokespeople have told the inquiry the bill will not reduce childhood obesity, is heavy-handed, and will not encourage manufacturers to make healthier products.

Australian Food and Grocery Council chief executive officer Kate Carnell says the industry has recently brought in self-regulatory guidelines which are broader than the measures taken in the bill.

'What we are committing to in that document is that food and grocery and beverage manufacturers in Australia will not advertise products that are not deemed to be healthy under appropriate government standards and guidelines during children's television timeframes,' she said.

'[The bill] doesn't encourage industry to be advertising healthy eating and health activity and to be reformulating product to make it more in line with established scientific guidelines.'

Ms Carnell says the industry is prepared to conduct a review of the effectiveness of the new initiatives in a year's time.

She says she is not aware of the use of child psychologists in advertising.

Source: ABC News, 19 November 2008

subsidise: provide financial aid

policy: management plan or strategy devised by a government or legislation

legislation: law passed by a government

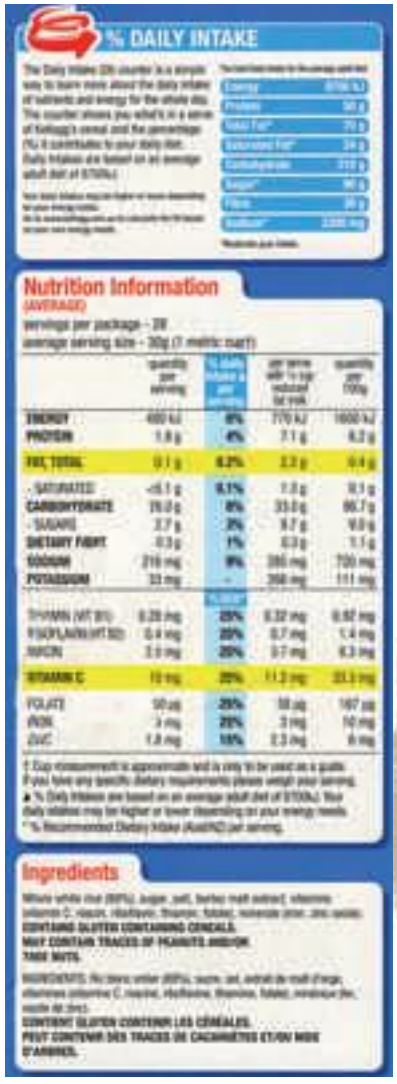
An overweight man in America tried to sue fast-food companies in 2002 because he claimed that they did not inform him that he would become overweight if he consumed their food on a regular basis. Do you agree with his claim?

Kraft Foods have capped their portion sizes of single serve packages, added extra nutrition information and eliminated all in-school marketing. They have also set up a global council of advisers to respond to current nutrition problems. Do you know of any other companies that have taken a similar approach?

Ethical responsibilities of governments and manufacturers

The issue of responsibility is a controversial one. Nobody really wants to take responsibility for current nutritional concerns, but it seems that somebody must take charge! So who gets the blame?

Doing the right thing on behalf of society lies in the hands of the government and food companies. Governments determine which foods are imported, exported, bought, sold and **subsidised**, and are responsible for any **policy** or **legislation** related to food.



6.7.2 New food labels are clear and highly informative.

Nutritionists believe that governments must take a firm stance on nutrition levels and introduce special taxes on processed junk foods so that people find them more expensive to buy in relation to healthy foods. Other ideas include banning food advertisements aimed at children and including health warnings on food products.

Doctors in Australia have begun a new program to educate Australians by prescribing diet and exercise instead of drugs for those with diet-related conditions such as obesity or diabetes.

Food companies must do the right thing by listening to the needs and wants of consumers and providing healthy and nutritious foods that are low in fat, salt and sugar, but high in nutrients such as vitamins, minerals and fibre. They must also consider the ethics of advertising their product. Manufacturers have to be careful that they do not mislead consumers or make incorrect claims about their products.

FOOD IN FOCUS

Doubling in boys' obesity rates earns health warning

Julie Robotham

AN INCREASE in the proportion of extremely overweight boys has prompted experts to warn against complacency over children's diet and exercise.

Compared with 1995, there was no increase in the proportion of boys who were simply overweight in 2007–08, according to the results released yesterday by the quarterly Australian Social Trends report of the Bureau of Statistics.

But the proportion of boys classified as clinically obese doubled during the same period, to 13 per cent of those aged between 13 and 17 and 8 per cent of five to 12-year-olds.

For girls, the opposite picture emerged, with overweight levels increasing among teenagers, but obesity levels for all ages remaining static.

Louise Baur, a pediatrician who specialises in obesity at the Children's Hospital at Westmead, said: 'The general trend is of some concern because we'd like to see some plateauing by now.'

Research carried out overseas had shown programs intended to treat obesity, such as counselling by GPs or after-school sports groups, were ineffective, and it appeared only intensive programs that touched many aspects of a child's life could help them lose weight.

Professor Baur said it was not surprising that different patterns were emerging between girls and boys. 'Even prior to puberty, girls and boys have significant though quite small differences in their body composition,' she said. 'Even young girls have slightly more body fat.'

As well, boys' weight seemed to change more readily than girls' in response to physical exercise, suggesting they might be more susceptible to the effects of sedentary pastimes such as computer games.

Overall, the figures, collected as part of the National Health Survey, revealed a quarter of children were overweight or obese, putting them at higher risk of health consequences such as heart disease, cancer and type 2 diabetes.

The results suggest the epidemic of obesity in Australian youth may continue to accelerate, despite more reassuring analysis earlier this year by Timothy Olds from the University of South Australia's School of Health Sciences, which found weight gain had started to level off.

Earlier this month the Federal Government's National Preventative Health Taskforce recommended a ban on TV advertising of high-calorie foods low in nutritional value at times when children were likely to be watching. This would be a central strategy in reducing childhood weight gain, which it said could cut the current generation's life expectancy by two years. The Government has yet to respond to the proposal, which the taskforce said should be phased in over four years.

Professor Joe Proietto, of the University of Melbourne, said efforts to reduce obesity should be targeted at preventing weight gain in children, because by adulthood the body reprogrammed itself to return to its heaviest weight, defeating even the most punishing diet and exercise regimes.

'I believe in exercise,' he said. 'But as a measure to stop obesity in children it's a waste of time.'

Source: *Sydney Morning Herald*, 25 September 2009

Hands on

Who is responsible?

Purpose

To make you aware of different people's opinions on who is responsible for nutrition levels in Australia.

Steps

1. Interview four or five adults of different age and occupation and ask them the following questions:
   - What do you think society's role is in regard to Australia's poor nutrition levels?
   - What do you think your role is?
   - What do you think the government's role is?
   - What do you think the food manufacturer's role is?
2. Generate a summary sheet with each response shown clearly.
3. Discuss your findings with the class.
4. Write down your own responses to the questions.
5. What was the most interesting finding in your survey activity?
6. Did the class come to any conclusions about who is responsible?

UNIT REVIEW

Looking back

1. What strategies have governments taken to improve nutrition levels?
2. What does FSANZ stand for?
3. What does AFGC stand for?

For you to do

4. How do governments determine which foods are available to us?
5. Imagine that the Department of Health has asked you to design a television advertisement to promote healthy eating and lifestyle. In groups of four or five, role-play a suitable advertisement. Make sure you video and upload the advertisement onto the school network for your class to watch and evaluate.
6. Think of another strategy that may improve poor nutrition levels. Give details to your class.

Taking it further

7. What is your opinion of taxes being levied on fast foods? Do you think it would help our nutrition levels?
8. Research the 'Life. Be In It' campaign. Write a short report on the campaign.

Using food guides for menu planning and food choices

6.8

Over the years, the Australian Government and other associations have provided guides designed to educate the Australian population. Some models have proven to be more successful than others. The most commonly used and well-known food guides in Australia are the Dietary Guidelines for Australians, the *Australian Guide to Healthy Eating* and the Healthy Eating Pyramid. Refer back to page 54 and, as a class, discuss each guide.

How can people apply these guides?

Each of these guides is aimed at different age levels or groups in society. Consider the Healthy Eating Pyramid and the *Australian Guide to Healthy Eating*. They both provide a basic diagrammatic representation of the foods that you should eat in the right proportions. These types of food guides would be helpful for young children or people who do not have a deep understanding of the English language. They can thus rely on pictures of foods and graphic representations to help them choose the right foods to eat.

On the other hand, the Dietary Guidelines for Australians are aimed at the average adult who speaks English fluently and can understand and act on each diet and lifestyle recommendation. The guidelines are based on the simple models described above, yet require a deeper level of understanding of nutrition and health.

Everybody should use these guides to assist in planning healthy diets every day. However, the type of guide each person uses will depend on who they are, how old they are and what level of understanding they have.

Healthy diet planning for teens

Purpose

To allow you to design, plan and prepare a nutritious menu for teenagers.

Materials

three nutrition guides, recipes suitable for teenagers, pen and notebook

Steps

1. Plan a suitable daily menu for a teenager.
2. Select one part of this menu to prepare in a practical lesson. Have it approved by the teacher.
3. Fill out a food order and complete the practical in class time.
4. Have a friend taste and evaluate the meal while referring to the nutrition guides.
5. Complete a one-page justification of your food choices.

CORE
UNIT 2.8
UNIT 2.11

RECIPE
HOT, RICH POTATO SALAD p. 328

FOOD IN FOCUS

Pick the junk food (it isn't the Maccas)

Rosie Squires

Some supermarket salads contain more fat, sugar and salt that a McDonald's cheeseburger or large French fries. An analysis of the labels of ready-to-eat Mediterranean and caesar salads sold in supermarkets show they contain high levels of sodium, sugar and saturated fat.

Nutritionist Catherine Saxelby said salads seem like a healthy option but may contain hidden fat content in added cheese or dressings.

'I am a big advocate of salad and, when people don't have enough time to make it themselves, they think they're doing the right thing,' she said.

Dietitian Rosemary Stanton said ... 'We have Westernised a lot of these products to make them appeal to the Australian palate by adding sugar ... I think manufacturers need to realise they don't need so much sugar in dressings on salad.' She said caesar salads were also an unhealthy option because of the creamy mayonnaise and processed bacon.

Source: Adapted from *Sunday Telegraph*, 5 July 2009

Activities

1. Have you ever purchased a pre-prepared supermarket salad? Describe the ingredients used.
2. Were you deceived by the label?
3. List healthier, alternative salad ingredients.

Looking back

1 Why are food models designed?

2 Who funds the development of these food guides?

3 List the Dietary Guidelines for Australians.

4 Name the food groups in the *Australian Guide to Healthy Eating*.

For you to do

5 Why might girls, women, vegetarians and athletes need more iron?

6 Why do you think you might need some fats and oils in your diet?

7 Plan a nutritious weekly dinner menu to be used at either a school cafeteria or a retirement village for elderly people. Remember to use the dietary guides.

8 Analyse the following menu for an 8-year-old child. Discuss good and bad points. Rewrite the menu to make it healthier.

Breakfast: 1 cup cocoa bubbles, ½ cup skim milk, 1 cup fruit drink

Morning tea: small packet plain potato chips

Lunch: cheese and tomato white bread sandwich, small chocolate milk

Afternoon tea: 2 sweet biscuits

Dinner: ¾ cup macaroni cheese, ¼ cup steamed vegetables

Dessert: 2 scoops vanilla ice-cream with canned peaches in syrup

Taking it further

9 Construct a table displaying the three main dietary models used in Australia. List positive and negative points of each and include suggestions for possible improvements.

10 In groups of three or four, design a food guide aimed at teaching society about good eating. Prepare this strategy electronically (as a Microsoft® Word document, PowerPoint® presentation or web page) as though you were going to present it to the government.

11 Research and select a recipe for a meal that does not reflect the format of the Healthy Eating Pyramid and Dietary Guidelines for Australians. Redesign the ingredients so that the recipe does follow the pyramid and guideline recommendations.

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6.9

Additional content: active non-nutrients and health

CORE

UNIT 2.3

6.9.1 These foods are rich in phytoestrogens.

What are they?

Active non-nutrients fit into the family of functional foods. These are products or ingredients that provide an extra health benefit beyond the normal. Active non-nutrients are substances that are 'not nutrients' and are therefore not required in the diet, but may help with the functioning of body processes or assist to maintain or **enhance** good health.

Phytochemicals

Phytochemicals are special chemicals that come from plants and help reduce the risk of several diseases. Phytochemicals act as antioxidants in the body. Antioxidants are substances that protect the body against the harmful free radicals that are present in cigarette smoke, pollution and X-rays. Antioxidants also help to control blood cholesterol levels.

Phytoestrogens are a form of phytochemical. They produce a special **hormone** similar to one that the body produces called oestrogen.

Oestrogen is known to:

- help reduce the risk of cancer, **hypertension** and cardiovascular disease
- help to reduce hot flushes in menopausal women.

Foods that contain phytoestrogens include soy bean products (such as tofu, soy milk and soy and linseed bread) and a variety of coloured vegetables (such as tomatoes, corn, oranges, celery, broccoli and carrots).

enhance: improve or build on

hormone: chemical substance made by the body to perform a specific function, for example to stimulate growth and development

hypertension: very high blood pressure, often linked to a high salt intake

Probiotics

These are good **micro-organisms** which are found in dairy products. They:

- help to maintain the health of the intestinal tract
- fight intestinal disease
- help with gut functioning and digestion
- assist with **immunity** from diseases.

A probiotic product is a functional food that comes from a live organism known as a 'culture'. Examples of friendly probiotics are lactobacillus and bifidobacteria. Too many unfriendly bacteria in the system can cause symptoms such as diarrhoea or abdominal pain. Most probiotics are found in foods like yoghurts, cheeses, fermented milk drinks such as Yakult and sour cream.

Prebiotics or modified resistant starches

Prebiotics are parts of food products that are not digested by the body. They resist digestion and help maintain good intestinal bacteria levels. Hi-maize is an example of a resistant starch. It acts like dietary fibre in the body and assists with regularity in passing stools. It is very fine and white, and mixes easily into breads and other baked products.

6.9.2 Hi-maize is a resistant starch found in many bread products.

micro-organism: microscopic organism such as bacteria

immunity: ability to fight or resist disease or infection

Probiotics need cold temperatures in order to stay alive. If the temperature rises above 4°C, the good bacteria begin to die.

FOOD IN FOCUS

Yoplait elivaé

Yoplait elivaé is a smooth, delicious 98 per cent fat-free yogurt with a unique blend of probiotic cultures, including digestivus culturus™, Acidophilus and Casei. Yoplait Elivae has been designed to naturally regulate the digestive system, which can relieve bloating.

Yoplait Elivae also has these benefits:

- Probiotic. A natural fibre that nourishes 'good' bacteria in your body, helping them to stay active.
- Gentle. There are no artificial colours or flavours. Gluten free. Gelatine free.
- Low GI. Helping you feel satisfied for longer.
- Calcium. An essential mineral for body and bones.

A 150 g tub of Yoplait elivaé contains over 10 billion probiotic cultures, and 2 g of probiotic fibre.

A balanced inner digestive system is necessary for maintaining health, and includes having more 'good' bacteria, than 'harmful' bacteria.

To help maintain adequate amounts of 'good' bacteria in your digestive system, probiotic cultures must be consumed on a regular basis, ideally daily. By eating foods with probiotics, the healthy bacteria that survive transit through the gut and arrive in the large intestine, can help favourably alter the balance of bacteria and promote internal health.

Source: Adapted from information on the Yoplait website

Activities

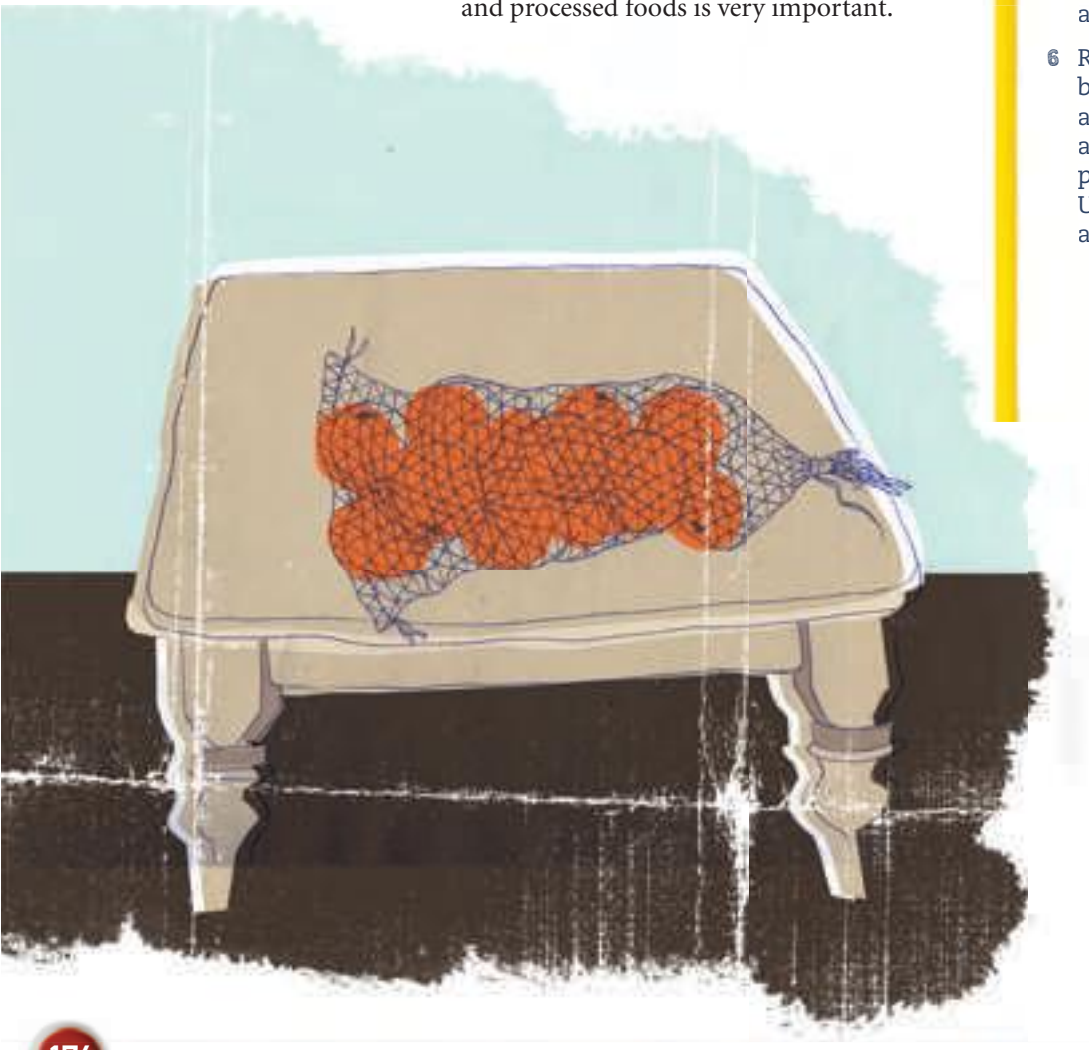
1. Name the cultures found in Yoplait elivaé.
2. Explain what 'low GI' means.
3. What do probiotic cultures provide for our bodies?
4. Research the factors that may cause digestive system imbalance.

Potential health benefits of active non-nutrients

The main purpose of using functional foods is to try to improve the health of the population. Health care costs are increasing fast, so research into active non-nutrients is needed to help solve some of the problems.

Certainly these products give some form of relief and are generally widely accepted. However, they are not the only answer or resolution to the growing concerns over our nutritional problems. Some people may start to think that they can solve all of their dietary problems just by consuming these foods.

Functional foods can be used alongside a variety of other strategies. Educating consumers about good foods and the problems associated with fast, convenience and processed foods is very important.



UNIT REVIEW

Looking back

1. What are active non-nutrients?
2. Give one example of a phytochemical.
3. Name one probiotic food available on the market.

For you to do

4. Are functional foods the answer to our problems? Evaluate the health benefits of active non-nutrients and discuss your response as a class. Create a poster during the discussion. Divide it into two sections: 'Pros' and 'Cons'.

Taking it further

5. Summarise different types of active non-nutrients, functions and food sources.
6. Research one active non-nutrient by using a variety of sources such as books, the internet, journals and magazines. Provide an oral presentation (about 3 minutes). Use pictures and diagrams to assist you.

Chapter review

Looking back

1 What are the three main functions of food?

2 List the six food nutrients.

3 How is food digested in the stomach?

4 What is metabolism?

5 List two high-protein foods.

6 Name one vitamin and mineral and identify the main function of each.

7 List four factors that affect nutritional needs.

8 What does RDI stand for?

9 List four factors influencing our food habits.

10 Give an example of how our individual preferences might influence our eating habits.

11 Identify one food that is not available in one geographic area.

12 What is the main nutritional problem in Australia today?

13 Name two food models designed for Australians.

14 What is legislation?

15 Define 'active non-nutrient'.

For you to do

16 Identify the protein, fat and carbohydrate foods present in your daily diet.

17 Describe lactose intolerance and provide examples of symptoms and foods to avoid.

18 Draw and label the GI tract.

19 Research the lymphatic system and provide information to describe its purpose.

20 List one day's worth of food choices for a strict vegetarian.

21 Provide a summary of each life stage and the nutrients required by each group.

22 Identify five tactics used by the media to influence food choices.

23 How might you educate society to eat the right quantity of the right foods?

24 Investigate the positives and negatives of functional foods.

Taking it further

25 In a detailed report, explain the role of the liver in human digestion.

26 Investigate protein/energy deficiencies such as kwashiorkor on the internet. Explain how and why they occur.

27 Design and produce six healthy snack options that could be supplied by school canteens.

28 Create a report on one recent technology and how it has affected both food availability and choices.

29 Investigate and report on one diet-related disorder that is linked to overnutrition.

30 Evaluate the government's response to nutrition levels. What actions have they taken? What do they plan to do? Will this be adequate to improve the health of Australians? Submit an extended response of three to four pages.

31 How can each individual person take responsibility for their own nutrition levels? Prepare an oral presentation (3–5 minutes) to express your thoughts to the class.

32 Plan a dinner menu to be used in a hospital maternity unit. Remember to use the RDI tables and food guides.

33 Analyse the following diet of a 16-year-old boy:

Breakfast: Milo, cereal, whole milk, 1 slice white toast with Nutella, water

Morning tea: water, 4 milk arrowroot biscuits, an apple

Lunch: chicken schnitzel and salad, white bread roll with mayonnaise, chocolate milk

Afternoon tea: packet of M&Ms, water

Dinner: spaghetti bolognese, orange cordial

Dessert: 4 jelly snakes, tea with milk and 2 sugars

34 Design, produce and evaluate a handout or e-brochure aimed at educating people about active non-nutrients.

Chapter 7

What's on the menu?

Food service and catering

Throughout history there have always been occasions when non-family members prepared meals for the family. Rich ancient Greeks and Romans employed chefs to prepare elaborate feasts. Travellers have always needed food and accommodation. Large cultural celebrations like weddings have traditionally depended on the assistance of outside caterers.

Chapter outcomes

In this chapter you will learn about:

- different food service and catering ventures and their value to society
- employment opportunities in the food/hospitality industry
- employer, employee and consumer rights and responsibilities
- menu planning
- recipe development
- purchasing systems
- food service and catering considerations
- operating a small food business.

In this chapter you will learn to:

- examine the operations and contribution of different food service ventures
- conduct web searches
- outline employer, employee and consumer responsibilities
- identify and demonstrate safe work practices
- compare and develop menus and recipes for different catering events
- identify elements of a recipe
- design, plan and prepare food for functions
- set tables
- create a proposal for a small food business.

Food service and catering ventures

7.1

Catering involves the cooking of food, while food service involves the serving of food.

Profit and non-profit ventures

Most food service and catering ventures operate to make a profit (monetary gain). Some ventures are non-profit operations that support communities or provide an essential service.

7.1.1 Profit-making and non-profit-making ventures

Typical profit-making ventures	Typical non-profit-making ventures
Restaurants	Canteens • schools, colleges and universities • sport • work
Cafés	Fundraising food stalls
Bistros	Caterers: • hospitals • nursing homes • prisons • defence service • boarding schools • childcare centres • charities • relief and emergency services
Cafeterias	
Taverns	
Hotels and motels	
Room service	
Function rooms	
Restaurants	
Fast-food and takeaway stores	
Function and convention centres	
Food stalls	
Mobile food vans	
Caterers: • public events • private functions • transport, for example airlines • film and television • for other food ventures	

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Economic and social value

Economic contribution

Ventures that operate for profit contribute to the economy. Businesses pay government taxes that allow many projects and community services to be funded. They also purchase food and supplies from other businesses and so contribute to their incomes.

Preparing food is labour intensive. Workers use wages to purchase goods and services which helps to promote economic growth. Workers also pay taxes.

Social contribution

Australians are relying more on food service providers. Working parents find that it often saves time and energy to eat out, buy takeaway or organise a function outside the home. Australian households are also on average much smaller than in the past and preparing meals for one or two people is considered more difficult than purchasing a meal already prepared.

Non-profit food service organisations provide essential social contributions. For example, charities often feed people who are sick, frail and homeless or provide emergency services during disasters.

Many sporting and service clubs operate ventures such as bistros and canteens to earn income to help provide facilities, equipment and services for its members as well as other groups in society. Some community organisations such as Rotary hold food stalls to raise money to fund local community projects.

7.1.2 Many families enjoy sharing a meal at a restaurant, as an occasional alternative to eating at home.

The word 'bistro' comes from the Russian word *bystro*, meaning 'quickly'. It entered the French language during the Russian occupation of Paris in 1815, when Russian Cossacks who wanted to be served quickly would shout 'bystro'.

RECIPE

CHOCOLATE CARAMEL SLICE p. 329

Casual workers now make up 53 per cent of the restaurant industry.

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FOOD IN FOCUS

The Loaves and Fishes Free Restaurant

The Loaves and Fishes Free Restaurant opened its doors in 1989. It is located in Ashfield, in Sydney's inner-west in a Uniting Church hall. It has been serving healthy, nutritious and free meals to Sydney's needy ever since.

The restaurant is open Monday to Saturday for breakfast between 9 am and 10.30 am and for lunch between 11:30 am and 1:00 pm and serves as many as 400 guests every day. Additionally, another 300 meals are served every night of the week to the homeless and disadvantaged in the city.

From humble beginnings, the Loaves and Fishes Free Restaurant now employs a full-time cook, an assistant cook, a volunteer and logistics coordinator, a driver and a storeman. It also relies on an army of volunteers and supporters in the community. More often than not the Saturday meals are managed by community groups that have different spiritual traditions—from Buddhists, to Sai Baba, or Jewish.

Exodus also provides help and support services such as social workers, counselling, food parcel assistance and appropriate welfare assistance. Each week The Exodus Foundation distributes over 200 food parcels to the disadvantage. These parcels consist of canned and packaged goods, many of which can be opened without can openers and eaten cold. Commonly the parcels consist of longlife milk, canned food (fruits, vegetables, soup, fish, and baked beans), rice and pasta, coffee and tea, breakfast cereals and dry snack foods.

The Exodus Foundation cannot achieve their work without the donations and effort of many individuals, schools, universities, the business community, the media and religious institutions. Some donations are cash but food too is often donated, particularly food used in the food parcels.

Source: Adapted from information at http://www.billcrews.com.au

Activities

1. How many needy people a day are catered at The Loaves and Fishes Restaurant?
2. Who is employed by this organisation?
3. What support services are provided by the Exodus Foundation? Why do you think they provide these services?
4. How does the Exodus Foundation fund their work?
5. Plan a breakfast menu for the Loaves and Fishes restaurant. Give reasons for your food selection.

UNIT REVIEW

Looking back

1. Distinguish between the terms 'catering' and 'food service'.
2. Give three examples of profit-making food service and catering ventures.
3. Give three examples of non-profit food service.
4. Identify three groups in society who may benefit from the services of non-profit food service and catering ventures.

For you to do

5. Write a paragraph about your favourite food service and catering establishment. Give reasons why you like the establishment.
6. Plan a dinner menu that could be prepared by an airline catering company for a flight from Sydney to Perth.
7. Using this unit and other resources, write a short paragraph that explains how governments use taxes in the community.

Taking it further

8. Design your own catering company and produce a web page. Include the following information on your page:
   - company name and contact details
   - services you would provide, for example private function catering
   - examples of foods you offer.

Employment opportunities in the industry

7.2

There are many more male chefs than female chefs yet in the home more females cook than males.

The food service and catering industry is a large, expanding and diverse industry that offers full-time, part-time and casual work opportunities.

Full-time employees work between thirty-five and forty hours a week, while part-time employees work between twelve and thirty-five hours a week. Both are permanent positions and entitled to leave such as sick days, family leave and holidays. Casual employees work when required. Most casuals receive no or limited leave entitlements but they do earn a higher rate of pay.

7.2.1 Requirements for working in food service and catering

Requirements	Opportunities
Communication skills	Select from a variety of careers
Good manners	Work in a variety of venues
Smart presentation	Work full-time or part-time
Team work	Learn about different cultures
Food skills	Travel
Organisational skills	Start at the bottom and work up to management level
Initiative	Learn skills in food preparation
Enthusiasm	
Fitness	
Dedication	

Back-of-house and front-of-house careers

In the hospitality industry 'back of house' refers to where meals are prepared. Those working 'front of house' are responsible for serving and greeting guests.

7.2.2 Back-of-house and front-of-house careers

Back of house	Front of house
Kitchen hand	Food and beverage attendant
Catering assistant	Bar staff
Counter hand	Coffee machine operator
Sandwich hand	Customer service assistant
Cook	Supervisor
Chef	Host

7.2.3 Working in hospitality

The food service catering industry offers many opportunities
Select from a variety of careers
Work in a variety venues
Work full- or part-time
Learn about different cultures
Travel
Start at the bottom and work up to management level
Learn skills in food preparation
Learn skills in dealing with a variety of people
Requirements for working in food service and catering
Communication skills
Good manners
Smart presentation
Team work
Food skills
Organisational skills
Initiative
Enthusiasm
Dedication
Fitness

7.2.4 Career pathways in hospitality: front of house

Career pathway of front-of-house
Owner, operator, manager: manages the whole operation—hiring staff, marketing and ensuring profitability
Head waiter (maître d'): organises service staff, allocates tables for bookings, greets guests and compiles staff rosters
Food and beverage attendant: takes orders, serves food and/or drinks to guests
Trainee attendant/runner: assists food and beverage attendant by removing plates, setting tables and collecting glasses

PP Web Destination

7.2.5 Working in hospitality. There are a range of different career options.

7.2.6 Career pathways in hospitality: back of house

Career pathway of back-of-house
Owner, operator, manager: manages the whole operation—hiring staff, marketing and ensuring profitability
Executive/head chef (chef de cuisine): manages the whole operation of the kitchen such as ordering, stock control, planning menus and training kitchen staff
Second chef (sous chef): second in command, manages day-to-day activities of the kitchen
Specialist chef (chef de partie): specialist cook in area such as sauces, soups, fish, pastries, or grills and roasts
Assistant cook (commis chef): has completed apprenticeship and works in any area of the kitchen preparing, cooking or finishing food
Apprentice: trainee cook who works under the direction of a chef. Apprenticeships last four years
Kitchen hand: carries out cleaning duties and helps with simple food preparation

Management

Managers make decisions regarding the operations of an establishment. The food service and catering industry provides a good opportunity for employees to progress into management positions. It is not uncommon for chefs to open and manage their own food businesses after just a few years working in the industry, or for team leaders in some establishments to become managers.

Delivery

Consumers like the convenience of prepared foods—from pizzas to diet foods—delivered to them both at home and at their workplaces, and technology makes a contribution. For instance, many pizza deliverers use one nationwide phone number for customers to place orders. This is linked to the nearest store. Staff prepares the food, places it in containers to keep it warm and it is delivered to the customer. Of course, many food service establishments rely on suppliers to deliver ingredients and foods and as a result there are employment opportunities in this field.

FOOD IN FOCUS

Hot Rocks Events + Catering

Hot Rock Events + Catering is operated by Michael and Melissa with a staff of thirty. Based in Newcastle, Hot Rock Events + Catering applies a fresh, contemporary and professional approach to its catering, functions and event management business.

Melissa has an event management background, having worked as a banquet coordinator for a hotel and as and events coordinator for the Australia Jockey club. Michael has had extensive experience as a chef, including being a head chef in many restaurants both in Australia and overseas.

In Newcastle Melissa enjoys coordinating over thirty weddings a year and large events from conception to completion with such companies as OneSteel and Newcastle Permanent. Hot Rock, however, offers its services throughout New South Wales.

The company caters for all sorts of functions, ranging from sandwich platters delivered to an office, to a cocktail party or a wedding at home or a corporate event for 2000. Indeed, they offer the following menu types to their customers:

- boardroom
- conferences
- morning and afternoon teas
- platters and salads
- buffet barbecue
- party and cocktail
- food standing dishes
- sandwich platters
- weddings and celebrations.

Source: Adapted from information found at the Hot Rock website

Activities

PP Web Destination

1. How many employees are used by Hot Rocks Events + Catering?
2. What experience did Michael have before managing this company?
3. List four types of menus offered by Hot Rocks Events + Catering.
4. Why is it best to choose a meatless dish when choosing from the cocktail menu?
5. Pick nine canapés you would choose if you were using Hot Rocks Events + Catering for a function.
6. Using the menu, show how four different cultures have been represented on the menu.
7. Predict five dishes/foods that could be on the buffet barbecue menu.

Practitioner focus

Matt Moran—chef

Matt Moran is a high-profile Australian chef who has appeared on numerous food shows on television, and has also written numerous cookbooks.

Matt Moran finished school in NSW to initiate a career as a chef. He admits he did not like school but found he had a real passion for food. He commenced his four-year apprenticeship at La Belle Helene Restaurant, Roseville where he learnt classical French cooking skills.

In 1991 Matt, with his business partner Peter Sullivan, launched their first restaurant—The Paddington Inn Bistro. They opened their second restaurant in 1995, Moran's Restaurant and Café, which was also well received on the food scene. In 1999 Matt and Peter opened the award-winning restaurant ARIA which overlooks the Sydney Opera House. They have also opened ARIA Brisbane.

Matt believes that seasonality is an important basis for menu production and one of the most significant ingredients in achieving a flavoursome, balanced and premium quality menu. As such, ARIA's contemporary menu is inspired by his passion for sourcing the finest seasonal produce available. Matt describes his food as 'modern Australian', which is a fusion of flavours, cultures and fresh produce.

Matt likes to give something back—taking on new apprentices in his restaurants. Matt says, 'If we don't have apprentices we don't have an industry'. Not surprisingly, eight of the twenty-four kitchen staff at ARIA are new apprentices and Matt is proud of the close working relationship they all enjoy.

'They mean a lot to me. It's a real team in the kitchen. It's something you have to have to get the best out of them. You're the boss, but you've got to be their mate too.

'I'm fairly hands on … swanning in and out of the kitchen … working with them and showing them exactly what we want. We expect a lot from them from day one. It all comes back to me because it's my name on it. So what we want on the plate has to be perfect.'

Matt believes, 'I've still got something to achieve and somewhere to go. When I started, I never thought I would own my own restaurant by the time I was thirty. But it hasn't been easy. It's been a long hard slog'.

Source: Adapted from information at www.lifestylefood.com.au

Activities

1. What is Matt Moran's award-winning restaurant called?
2. How does Moran describe his food?
3. Name at least three other TV chefs.
4. How do celebrity chefs influence your impression of professional chefs and the food service industry? Give a specific example.

7.2.7 Matt Moran

Party and cocktail food

From the list of canapés below:

Select 12 canapés @ $21.50 per person
Select 9 canapés @ $17.00 per person
Select 6 canapés @ $11.50 per person

Served cold

Assorted sushi: nori omelettes, Atlantic salmon and cucumber, poached chicken with avocado
Rare peppered beef with baby spinach and parmesan on a crouton
Smoked salmon on a pancake with sour cream and chives
Prawn cocktail with seafood sauce in filo cup
Thai-style prawn, pork and chicken on fresh pineapple and watermelon
Fresh soft cheese (or goat's cheese), roasted tomato and basil tartlets
Greek salad skewers—olive, fetta, cherry tomato, cucumber and lemon thyme
Poached chicken, apple, celery and walnut 'Waldorf' on costini
Mediterranean frittata topped with onion cream and olive
Sesame cracker with tofu, avocado and coriander

Served hot

Spicy lamb meat balls with garlic and yogurt
Thai fish cakes with cucumber dipping sauce
Chicken san choy bau
Pumpkin and sage risotto balls (veg)
Polenta wedges topped with pesto and roasted capsicum (vegan and gluten free)
Zucchini flowers filled with ricotta, olives and basil (veg, summer time only)
Savoury tartlets with pistachio nuts and blue cheese (veg)
Mini beef pies with tomato sauce
Mini sausage rolls with tomato sauce
Mini hamburgers with slow-cooked onions, tomato, lettuce and bbq sauce
Spinach and cheese filo triangles (veg)

7.2.8 Party and cocktail food

UNIT REVIEW

Looking back

1. List four back-of-house employment opportunities in the food service and catering industry.
2. List four front-of-house employment opportunities in the food service and catering industry.
3. Outline the role of management in an establishment.

For you to do

4. You are planning to operate your own café.
   - **a** Choose a location and give reasons why you have selected this location.
   - **b** List five dishes on your menu board.
   - **c** List five beverages on your menu board.
   - **d** Outline the roles of three staff members required to operate your café.
   - **e** Justify four qualities you would expect from staff.
   - **f** Write an advertisement for a staff position available at your café.

Taking it further

5. Plan and prepare a function for your teachers, parents or community members such as morning tea or a dinner. Your event could also help to raise money for a charity. Assign front- and back-of-house positions to different class members, for example kitchen hand, food and beverage attendant, head chef, manager.
6. Visit a restaurant or café and interview the staff about their role in the operation of the venture.

Employer and employee rights and responsibilities

7.3

Employers and employees have specific rights and responsibilities to follow in order to ensure safety and fairness in the workplace.

Occupational health and safety

The food service and catering industry is fast-paced and involves heat, water, tools and machinery. Common injuries include:

- slips and falls
- sprains and strains
- scalds and burns
- cuts and abrasions.

To prevent injury it is important that food service and catering staff:

- use safety signage
- wear protective clothing and shoes
- have easy access to first aid and emergency contact numbers
- are trained in safety
- keep work areas clean and clear
- store chemicals appropriately
- lift objects correctly.

Under the *Occupational Health and Safety Act 2000* (NSW) all employees have the right to a safe workplace. Failure of employers to provide safety for workers can result in heavy fines, business closure or imprisonment.

Industrial legislation

Industry awards

Awards are the minimum working conditions of employees in a particular industry. They are negotiated between unions and employers and are permanent until new improved awards are agreed to. Employers who provide less than award conditions can be prosecuted.

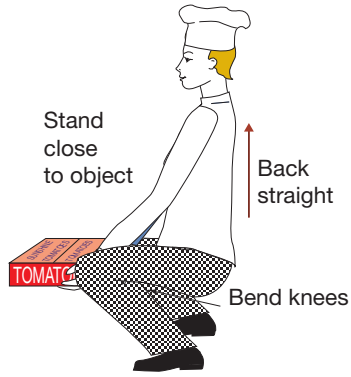
Through awards all employees have the right to receive from their employer:

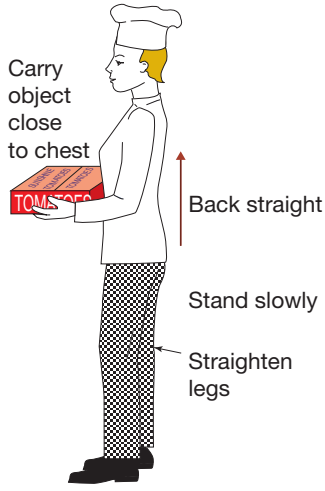
- award wages
- award conditions such as leave entitlements
- staff amenities such as access to toilets
- superannuation towards retirement
- workers' compensation in case of illness and injury resulting from work
- training, for example in use of machinery and safe work practices.

Employees have a responsibility to:

- work award hours
- follow all reasonable instructions relating to employment
- maintain confidentiality.

The government organisation WorkCover can inspect premises at any time to check on health and safety issues. It must close and inspect all workplaces where a death has occurred as a result of an accident.





7.3.2 Correct lifting and carrying techniques

7.3.1 Employer and employee responsibilities

Employer responsibilities	Employee responsibilities
Ensure the safety and welfare of employees	Cooperate with employers
Supply safe equipment and machinery	Work safely
Provide safe access to the workplace	Report problems
Provide information, supervision and training	
Consult with employees on health and safety matters	

RECIPE

BATTERED FISH AND CHIPS p. 330

Workers can choose whether to join a union or not and it is illegal to force someone to join a union. However, unions play a valuable role in protecting the rights of workers and improving their conditions.

Enterprise agreements

Under enterprise agreements employees can negotiate with employers to gain conditions better than the award. Once an agreement has been reached the improved working conditions are then written down and cannot be breached.

Anti-discrimination legislation

Under anti-discrimination legislation, employees and customers cannot be discriminated against on the basis of:

- age
- gender
- religion
- race
- culture
- disabilities
- sexual preferences.

Equal employment opportunity principles

Equal employment opportunity is about ensuring that everyone who is qualified for a job is given an equal opportunity of being employed regardless of age, gender, religion, race, sexual preference, disabilities, marital status or political opinion. Employees can be discriminated against in relation to their qualifications and experience when applying for jobs and promotions.

UNIT REVIEW

Looking back

1. Name the legislation that ensures workers have a right to safety.
2. Name four injuries common to the food service and catering industry.
3. What are three areas covered by industry awards?
4. List five areas in which you cannot be discriminated against.

For you to do

5. Conduct a 'silent conversation' negotiating an enterprise agreement with another student. Partner 1 (the employee) writes on a piece of paper that they would like a pay rise and then passes it on to partner 2 (the employer). Pass the paper back and forth, negotiating the agreement in silence by writing to your partner. Read out the agreement once the negotiation is complete.
6. Demonstrate how you would lift a box full of frozen chips or another item weighing around 10 kilograms.
7. Design a set of safety rules that can be displayed in your school kitchen.

Taking it further

8. Investigate current award wages and conditions of different careers in hospitality using the website link to access government and union websites.
9. Examine the first aid kit for your food technology classroom. Does it contain everything it should? How can you check?

Consumer rights and responsibilities

7.4

CORE

UNIT 1.1

When you purchase goods or use a service you become a consumer. Consumers have a right to:

- safety
- choice
- be heard
- redress (refund, repair or exchange)
- satisfaction of basic needs
- consumer education
- a healthy environment.

Consumers also have a responsibility to:

- use products wisely
- choose carefully
- make use of available information
- speak out and express satisfaction
- seek redress.

Safety and hygiene

In NSW, the *Food Act 2003* and Food Regulation 2001 are the primary laws protecting the right of consumers to clean and safe food. According to these instruments:

- food has to be fit for human consumption
- foods have to meet certain standards, for example meat pies must contain a certain percentage of meat
- consumers cannot be deceived, for example beef meat pies must contain beef
- fair trading is promoted, for example a food cannot be advertised with false and misleading information.

Environmental health officers enforce legislation by inspecting food premises. They can enter at any time and have the power to take samples, issue warnings, and fine or close a food premises if hygiene standards are not met.

Under this legislation, food for sale must be prepared in a commercial kitchen where materials and equipment meet set standards. Most food ventures need council approval and inspection before they can operate. Food businesses also need to have a supervisor in charge of food safety in order to implement practices that prevent food poisoning.

Under the *Smoke-Free Environment Act 2000* (NSW) enclosed public places such as restaurants and cafés are required to be smoke-free. The law protects the rights of non-smokers as passive smoking is a health risk. Smoking is permitted in outdoor dining areas, but many of these are also becoming smoke free.

Under the law, establishments serving alcohol require a licensee and staff trained in Responsible Service of Alcohol (RSA). Public liability insurance is also compulsory in case customers are injured or fall sick as a result of an establishment's operations.

7.4.1 Staff have to be trained in the RSA before they can serve alcohol.

On the NSW Food Authority website you can find names of businesses that have breached the Food Act.

PP Web Destination

FOOD IN FOCUS

Dodgy diners dish up roach droppings

Rosie Squires

ONE in five food outlets in NSW have breached hygiene standards, with the worst fined for filthy or rat-infested kitchens, poor handling practices and meals served with cockroach droppings.

In a massive review of 36 000 food outlets across the state, more than 8000 businesses were given formal warnings by the NSW Food Authority for breaching safety guidelines or having poor handling practices, and 1700 restaurants were fined for repeatedly failing to comply with food standards.

The Blacktown region had the worst record. One club was fined $660 for serving out-of-date T-bone steak, fish and chicken. One restaurant was fined $330 for storing raw meat uncovered on the floor. Another restaurant was fined $660 for having no hand-washing facilities in the kitchen. Almost 100 restaurants in inner Sydney have also been fined. City of Sydney Council issued 177 warning letters, 127 improvement notices and 95 penalty notices, and shut down two premises.

Across the state, there were 576 consumer complaints of 'foreign matter' in food, including sticking plasters and cockroaches served in meals. A bakery in northern NSW was fined $550 for selling a loaf of bread containing a cockroach, while a food bar in Penrith was fined $330 after rat droppings were found in the pie warmer and on the benches.

In 2010, a mandatory food-handler training program will come into effect to ensure that every food business has a designated food safety supervisor. NSW food laws require councils to inspect all food businesses and report results of inspections and action taken to fix problems to the NSW Food Authority. The law also allows the Food Authority to publish the names of those businesses fined for breaches in food safety.

Source: Adapted from *Sunday Telegraph*, 20 December 2009

Activities

1. List four breaches in hygiene referred to in the article.
2. What can happen to a business when they have breached hygiene regulations?
3. Who do councils have to report to when inspecting food businesses?
4. Do you think naming a business that has breached hygiene regulations on the Food Authority website is fair? Argue points for and against.

Traditionally, many pubs and clubs would use the beer that spilt from their taps into the bar trough to make their beer-battered fish. Today this is a breach of the Food Act.

Value for money

Consumers know that it costs more to purchase a meal than to make it at home, but they still have a right to receive value for money. Consumers expect fresh, high-quality, nutritious ingredients and adequate, consistent portion sizes. They also expect friendly and efficient service. At restaurants, consumers often tip staff if the food is appealing and the service is exceptional.

By law, food service providers must provide menus where items are priced and adequately described. Consumers also have the right to complain and be compensated if the food or service is poor.

Food labelling and marketing

Food service providers are not required to label their products like packaged foods, but they must still inform the consumer of the main ingredients, cooking method and **portion size** of the dishes available. Some providers use photographs and displays to inform customers while others describe their menu items verbally, for example 'Chicken Montrose (grilled chicken breast served with a fresh tomato and basil sauce)'.

A consumer has the right to ask if a dish has ingredients such as peanuts to which they may be allergic. Nor should they be told a fish is barramundi if it is flake.

The food service and catering industry is very competitive. Common marketing practices employed to entice customers include **media** advertising, sponsorships, competitions, food deals, memberships and giveaways.

UNIT REVIEW

Looking back

1. List four rights of consumers.
2. Name two pieces of legislation that the food service and catering industry must abide by when preparing food.
3. Describe the role of an environmental health officer.
4. What marketing techniques do food service providers use to entice customers?

For you to do

5. Write up some headlines that could appear in newspapers regarding poor hygiene practices at food service establishments.
6. A restaurant reviewer has given a restaurant one star out of ten for value for money. List factors that may contribute to poor value for money in food service.
7. Write informative but short descriptions and a price for the following menu items:
   - a seafood family feast
   - a chocolate lover's dream
   - healthy tropical chicken.

Taking it further

8. Produce a visual presentation to explain the standard of hygiene expected in the kitchen.

portion size: specific size, shape and weight of food to be served

media: forms of communication—radio, television, newspapers, magazines—that reach large numbers of people

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7.5

Menu planning considerations

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A menu is a list of dishes offered to customers that is usually presented in courses. Many factors need to be considered when planning menus.

Scale of function

Functions can involve a small or large number of guests. With smaller functions it is easier to provide more courses and options than it is when dealing with larger numbers. Typical courses in a menu are:

- appetiser: tasty food that is not too filling and stimulates the desire for more food
- entrée (or first course): usually a fish, soup, salad in small portions
- main course: usually meat, fish or poultry with vegetable accompaniment
- dessert: sweet dishes, fruit or cheese.

Degustation menus have become popular. They involves sampling many courses of small portions of food that show off the chef's specialities. Each course is commonly served with an appropriate wine.

Types of menus

An à la carte menu:

- lists all the dishes available, arranged in courses and each priced separately
- provides an extensive choice of menu items
- allows the customer to choose the number and type of dishes
- means the food is cooked to order so that there is a waiting time
- can be expensive as skill is required to prepare each dish individually
- is usually used in restaurants.

A table d'hôte menu:

- provides a set menu with a set price
- includes a fixed, limited number of courses—usually a three-course meal with coffee
- offers a limited choice within each course
- the guests are usually served at one time (this is most common at a function)
- allows for faster service, making it easier to control costs and minimise wastage
- is a popular choice for cafés, restaurants and function rooms.

A cyclic menu:

- offers a series of fixed meals (usually breakfast, lunch and dinner) that rotates over a period of time, such as a week, fortnight or month
- provides only a few choices to pick from for each meal
- is usually well balanced nutritionally
- is commonly used by hospitals, nursing-homes, camps and airline catering.

A function menu:

- is used for special occasions such as weddings, formals, parties and business conventions
- is usually a fixed menu similar to table d'hôte, but with little or no choice
- varies depending on budget, venue and the number of people, for example a four-course dinner or a variety of appetisers or sweets
- is usually prepared in advance and the customer is charged a set price.

A du jour menu:

- changes daily
- is presented on a blackboard or verbally to the customer
- is a useful way to accommodate seasonal produce, test new recipes and use excess ingredients.

RECIPE

MINI QUICHES
p. 331

7.5.1 A set function menu

Arnold's Riverside Restaurant à la carte menu

Starters

Garlic and herb damper	$3.70
Soup of the day served with Turkish bread	$5.00
Wedges served with sweet chilli sauce and sour cream	$5.00

Entrees

Garlic prawns served on a jasmine rice timbale	$11.90
Caesar salad—cos lettuce, egg and croutons served with chef's own parmesan and anchovy dressing	$8.90
South Australian oysters (½ dozen)	$11.50
Chicken skewers, two skewers served on cos lettuce with a creamy sweet chilli sauce	$8.90
Penne pasta Dijon—chicken tossed in cream, sundried tomatoes, Dijon mustard and served with penne pasta	$9.20

Main courses

Chargrilled prime eye fillet—350 grams, with your choice of sauce and cooked to your liking	$21.00
Chicken filo—chicken breast fillet pocketed with sundried tomatoes and ham wrapped in filo pastry and baked	$21.00
Fettucini puttanesca—olives, chilli and anchovies, tossed in tomato concasse and served with parmesan cheese	$16.00
Honey and soy duck—pan-fried with crispy skin with honey and soy jus, served on bok choy	$18.90
Fisherman's catch—grilled barramundi, prawns, oysters, scallops and calamari, with lemon and mango mayonnaise	$21.00
Herb-crusted lamb-racks—local lamb oven-baked and served with couscous and a basil pesto sauce	$19.90
All main meals served with your choice of seasonal vegetables or a fresh garden salad	

Desserts

Chocolate bavarois served with raspberry coulis and fresh chantilly cream	$6.90
Banana crêpes served with banana and mango parfait	$6.90
Bailey's cheesecake—homemade cheesecake served with Tia Maria sauce	$7.20

7.5.3 An à la carte menu

Jordan's table d'hôte menu

$45 three courses
$39 two courses

Appetisers
Chicken Caesar—chicken, bacon, croutons, cos lettuce and anchovy dressing
Deep-fried salted calamari served with a marinated green paw-paw and mint salad
Vegetarian nori roll plate—vingared rice, pickled and fresh vegetables, wasabi and soy

Main courses
Chargrilled Atlantic salmon served with baby spinach, roasted red onion and tzatziki
Free range chicken breast served with grilled sweet potato, chive and coriander salad
Penne pasta—tomato, pesto, eggplant and kalamata olives

Dessert
Fresh seasonal fruit plate
Chocolate pudding served with double cream
Ice-cream terrine

All mains served with bread rolls, chips, salad

Coffee or tea also provided

7.5.2 A table d'hôte menu

Specials of the day

Entrée	
Herbed eggplant, cheese and tomato stacks	$7.00
Creamy gnocchi with prosciutto	$8.00
Mains	
Seared fish cutlets with creamy pesto	$13.00
Chargrilled Mexican chicken	$16.00
Desserts	
Coconut and almond pudding	$7.50
Zabaglione	$6.00

7.5.4 A du jour menu

7.5.5 A cyclic menu used for film catering

Meal	Monday	Tuesday	Wednesday	Thursday	Friday
Breakfast	Fried eggs Grilled tomatoes Banana pancakes Fresh fruit platter Cereals/milk/yoghurt Fresh juices	Scrambled eggs Bacon and sausages Cinnamon waffles Fresh fruit platter Cereals/milk/yoghurt Fresh juices	Omelette Breakfast burrito Miso and rice Fresh fruit platter Cereals/milk/yoghurt Fresh juices	Frittata Bacon and sausages Hash browns Fresh fruit platter Cereals/milk/yoghurt Fresh juices	Fried eggs Bacon and sausages Sautéed mushrooms Fresh fruit platter Cereals/milk/yoghurt Fresh juices
Lunch	Lemon couscous Moroccan lamb Harissa chicken Steamed vegetables Roast beef with Yorkshire pudding Fresh garden salad Tabouli	Vegetarian jambalaya Cajun chicken and dumplings Blackened snapper and tofu Beef and sausage gumbo Steamed seasonal vegetables Oven-roasted chicken Windsor court salad Tossed green salad	Greek spiced rice pilaf Moussaka Chicken kebabs Spanokopita BBQ marinated calamari Roast lamb with mint sauce Greek salad Green salad	Herb-tossed noodles Beef stroganoff Portuguese chicken Eggplant marsala Tomato and rosemary quiche Steamed vegetables Fresh garden salad Potato salad	Fragrant rice Lamb rogan josh Tandoori chicken Pumpkin curry Roast pork with apple Pappadums Banana and coconut salad Fresh green salad
Dessert	Chocolate pudding Ice-cream Fruit salad	Pecan pie with cream Ice-cream Fruit salad	Chocolate mousse Ice-cream Fruit salad and toppings	Sticky date pudding Ice-cream and caramel sauce Fruit salad	Crème brûlée Praline ice-cream Fruit salad
Afternoon tea	Vietnamese spring rolls Meat and cheese platters Fresh fruit	Hot dogs Vege dogs Fresh fruit	Pasties Potato wedges Fresh fruit	Assorted wraps Hot chicken kebabs Fresh fruit	Sushi Sausage rolls Fresh fruit

Facilities, staff, time and money

An establishment plans menus according to the facilities, staff, time and money they have available. For example, an à la carte menu requires chefs with skill. It also requires a lot of equipment to prepare the varied dishes and is costly because many ingredients are required. Offering a table d'hôte menu limits choice and may help an establishment to save time and money.

Some caterers such as those in nursing-homes need to feed a large number of people at one time. They usually have limited funding and facilities and many dishes on their menus contain inexpensive ingredients and methods of cooking such as baking, which allows a lot of food to be cooked at once.

Year, time and occasion

Menus are often planned with consideration to the time of year. In winter more soups and warm desserts are on a menu, while more salads and cold desserts are available in summer. In spring lots of fresh vegetables are offered.

Depending on the time of day many establishments will offer a breakfast, lunch or dinner menu. Breakfast menus and lunch menus are often lighter, quicker to prepare and include fewer options than dinner menus.

Different occasions also influence menus. For example, a wedding commonly uses function menus, and cake is included as part of the menu.

RECIPE

CAESAR SALAD p. 332

Types of customers

The health, occupation, gender, age, preferences and number of people a food service provider has to cater for affect menu planning. Hospital caterers, for example, must take into account the health, gender and age of patients in order to provide a nutritious meal and so consult with dietitians to plan suitable meals. Men, for instance, often have a higher energy requirement than women, and those recovering from heart disease may require low-fat meals. In order to cater for personal preferences they often include several options, for example a vegetarian item, as part of their cyclic menus. These days there are also strict nutritional guidelines for childcare and school catering services.

Fruit tingle

Purpose

Many food service establishments offer fancy drinks. In this activity you will make a drink called a Fruit Tingle.

Materials

crushed ice

equal parts of: orange juice, raspberry (red) cordial, lime (green) cordial, lemonade

Steps

1. Put crushed ice into a glass.
2. Hold a spoon in the glass and pour the different ingredients slowly onto it. This will help you keep the layers separate.

UNIT REVIEW

Looking back

1. List three courses on a menu.
2. Explain the difference between an à la carte and a table d'hôte menu.
3. List the factors you need to consider when planning menus for different customers.

For you to do

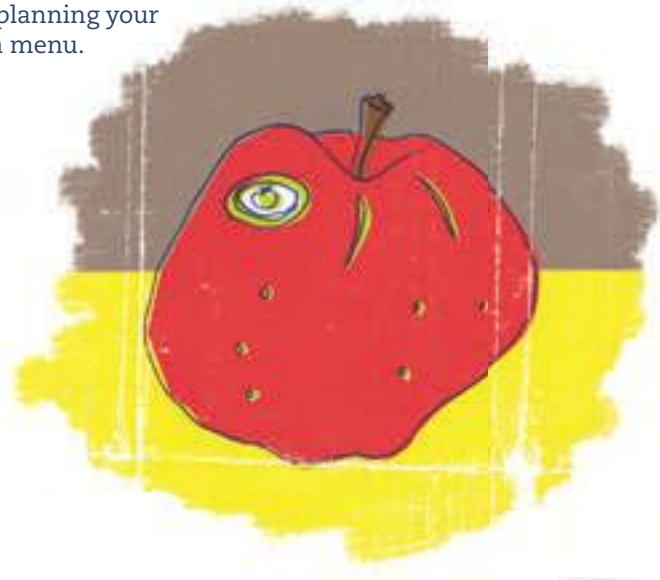
4. List five foods that may be on the menu of a mobile food van catering for construction workers. Give reasons.
5. Plan a blackboard menu for a summer breakfast at a holiday resort café.
6. Plan a day's menu for a boarding school.

Taking it further

7. You are catering for a school formal. Prepare a professional-looking table d'hôte menu for your function.
8. Choose a particular culture and research on the internet to find an à la carte menu from a restaurant of this culture in NSW.
9. Find a degustation menu that you like on the internet and save the menu. Use this menu as a springboard for planning your own degustation menu.

7.5.6 Different occasions can influence the choice of food served.

Christmas in July menus have become popular, as the weather in Australia at that time is more suited to traditional Christmas cookery.



7.6

Recipe development

Famous French chef Fernand Point said, 'If the menu is not appealing, the people will lose their appetites and their desire to part with their money'.

Many food service and catering establishments develop new recipes or modify existing recipes to add interest to their menus or to suit the needs of diners. For example, a restaurant chef may modify a basic recipe for chocolate mud cake into a white chocolate mud cake, while a hospital cook may produce a low-fat version of this dish to offer patients with heart disease.

Once they are proved reliable, recipes in the food service and catering industry become known as standard recipes. These recipes make it easier to cater for both large and small functions.

Ingredients

Ingredients in a recipe must always be of high quality and preferably fresh but in large-scale production some prepared ingredients may be more viable, for example frozen and pre-cut vegetables. When modifying ingredients to provide healthier options, many low-fat, low-sugar and high-fibre ingredient alternatives are available.

Tuna quiche

Name

Preparation time: 10 minutes

Cooking time: 40 minutes

Cost per serve: $1.90 — Cost per portion

List of ingredients to be used

Serves 10	Serves 25	Serves 50	Ingredient
10	25	50	eggs
940 millilitres	2.3 litres	4.7 litres	reduced-fat milk
2½ cups	625 grams	1.25 kilograms	reduced-fat cheese, grated
2	6	12	onion, chopped
460 grams	1.15 kilograms	2.3 kilograms	tuna, drained and flaked
1¼ cups	400 grams	800 grams	wholemeal plain flour
2½ teaspoons	1½ tablespoons	3 tablespoons	baking powder

Quantities required

Method

1. Beat eggs and milk together.
2. In a separate bowl, mix together cheese, onion, tuna, flour and baking powder.
3. Add egg and milk mixture to the flour mixture.
4. Pour into a lightly greased dish.
5. Bake in 200°C oven for 35–40 minutes.

Method of preparation

Method of preparation

The method in a recipe provides instructions on preparing the ingredients.

When serving a large number of people at one time, baking and roasting are more suitable methods than frying or grilling, as they require less constant attention. These methods are also more appropriate than frying when developing low-fat recipes. Dishes that can be made in advance, such as chilled desserts, save time when preparing food for functions.

Portion size

A standard recipe indicates a number of servings, or the number of people it should feed. It also assists with ordering. For example, if a recipe serves ten, and 100 portions are required, then the quantity of each ingredient is multiplied by ten.

Cost per portion

The cost per portion is useful in assisting to set menu prices. It is also useful when selecting recipes to suit a budget.

Measuring

No matter how small or large the quantity of ingredients that are required in a recipe, they must be measured accurately. Too much or too little could spoil the appearance or flavour of a dish.

Recipe writing

When a recipe has been developed, it is important that it is written as procedural text so that others can follow it and produce a quality product.

Lemon and passionfruit butter

Goal or aim

Ingredients

Materials resources

2 egg yolks
1 teaspoon lemon rind, grated
2 dessertspoons fresh lime juice
125 grams softened butter
1 tablespoon passionfruit pulp

Equipment

double saucepan
whisk
paring knife
chopping board
wooden spoon

Steps in order

Method

1. *Place* egg yolks, lemon rind and juice **in the top of a double saucepan**.
2. *Stir* with a wooden spoon over simmering water for 1 minute.
3. *Cut* softened butter **into small pieces**.
4. *Whisk* into mixture **gradually**.
5. *Continue* whisking **until sauce thickens**.
6. *Remove* from heat **immediately**.
7. *Stir* in passionfruit pulp and *cool* to **room temperate before serving**.

Italicised text indicates verbs, which usually begin sentences containing instructions.

Bold text indicate words that qualify given information—about how, where, when and for how long.

Delicious served on toast. Optional serving suggestion

7.6.2 Breaking down a recipe

Fruit muffins

Makes 20

Ingredients

2 cups flour

1 teaspoon baking powder

⅓ cup castor sugar

1 teaspoon nutmeg

2 tablespoons oil

1 cup creamy yoghurt

1 egg

1 cup fruit, for example fresh blueberries or fresh strawberries

Hands on

Design a canapé

Purpose

To engage in developing and creating canapés. Canapés are popular finger foods that are easy to prepare.

Materials

cream cheese

mini toast

choice of ingredients cut to size, such as stuffed olives, gherkins, smoked salmon, cold meats, caviar

finely chopped herbs such as dill, parsley or chives

piping bag

Steps

1. Whip cream cheese.
2. Pipe onto mini toast.
3. Decorate the toast with a topping of your choice so that the canapés look colourful and appealing. You can garnish with herbs if necessary.
4. Take a photo of your design.

Hands on

Produce your version of scones

Purpose

In this activity you will find and practise a scone recipe then change it to make it your own recipe, such as pizza scrolls.

Materials

cookbooks or recipe websites, ingredients for scones, other ingredients you want to use

Steps

1. Find a basic scone recipe that uses Australian standard measurements.
2. Practise this recipe.
3. Come up with a variation for your scone such as other ingredients or changes in shape.
4. Write up your idea as a recipe.
5. Trial the recipe.
6. Evaluate the recipe.
7. Rewrite the recipe with any changes you made.

UNIT REVIEW

Looking back

1. Identify the five elements of a standard recipe.
2. Explain the importance of cost per portion in a standard recipe.
3. Explain the importance of measuring in recipe.

For you to do

4. Using your knowledge of food and nutrition, suggest how a caterer at a sports and recreation camp could modify the ingredients in the fruit muffins recipe above so that it:
   - feeds 100 athletes
   - is low in cost
   - is highly nutritious.

Taking it further

5. Watch a cooking show. Report to the class the following information:
   - the name of the chef or presenter
   - the name of the dish they prepared
   - a description of how the dish was prepared and what the chef did to make the dish interesting and appealing.
6. In groups, produce your own five-minute cooking segment of an interesting recipe you have developed or modified.

Purchasing systems

7.7

Ordering

Quantities of food are commonly ordered in bulk in the food service and catering industry and usually from wholesalers. Some establishments have contracts with suppliers to ensure that they receive consistent and exclusive products. Some caterers and chefs still do some of their own shopping and it is common to see chefs at early morning markets selecting the best quality ingredients. A business will telephone, fax, email or use the internet to place orders.

Receiving

When receiving supplies of food, the staff checks that:

- orders are correct
- food and packaging are undamaged
- ingredients are fresh.

Incorrect or poor quality stock is rejected. If the stock meets the standards, it is quickly stored in its correct location to prevent risks to hygiene and safety.

Controlling

Stock control is very important as it ensures that there is sufficient good-quality stock when required, but not so much stock that there is waste or a problem with storage.

Some stock is checked daily while other stock is checked weekly or monthly. For example, cafés check milk supplies daily and coffee supplies weekly. Supplies of items such as straws may be checked monthly.

There are different systems used in stock control. Some establishments use computer programs and others use a card system, while some simply list foods low in stock on a board or piece of paper.

Issuing

In most food establishments, food is collected from the dry, cool or frozen storage area as required. In larger establishments food required may be requested using a requisition sheet and then issued by a stock controller.

The first-in, first-out (FIFO) system is employed when issuing food. When new stock arrives the fresher ingredients go to the back while the older stock moves to the front so that it is used first. This helps to prevent food wastage.

RECIPE

CHICKEN PARMIGIANA
p. 333

stock control: determination of the supply of goods kept by a business

7.7.1 Food is often ordered in bulk as it is more cost-effective.

UNIT REVIEW

Looking back

1 What is checked when a food is received?

2 Why is it important to quickly store food after it has been delivered?

3 What procedures are involved in FIFO?

For you to do

4 Consider a takeaway shop located in a busy workplace.

a Estimate how often you think they would need to order:

- bread
- frozen chips
- fresh tomatoes.

b For each food above, describe how you would judge the freshness of food delivered.

c Besides chips, what other frozen foods may a takeaway order from a supplier?

Taking it further

PP Web Destination

5 Visit your school canteen and interview the manager about their food purchasing system.

6 Find wholesale food suppliers in your area using the telephone or internet directories and produce a database to store the information about three of these suppliers.

7 Using the website link, practise ordering food supplies over the internet from one of the supermarket websites.

Food service and catering considerations

7.8

When serving food a number of factors need to be taken into consideration.

Plating food

Depending on the occasion and the establishment there are different ways of plating food but no matter what form of plate service is used, good presentation of food is essential as first impressions count. So when plating foods remember to:

- control the portion so that everyone gets the same amount but do not overload or have too little food on a plate
- warm plates for hot foods and chill plates for cold foods
- arrange foods so that they look colourful
- use garnishes and decorations to add interest to dishes but ensure that they complement the food
- use clean and unchipped plates and wipe away any spills with a clean cloth
- place the best side of the food facing up.

Style of meal

Styles of meals can range from casual to formal. Takeaway food is served packaged and taken away or eaten at the venue on uncovered tables with plastic cutlery. For many casual meals such as those served in bistros, plates and cutlery are provided, and again tables are commonly uncovered.

A popular style of meal is the buffet where diners select foods from a variety of prepared dishes on display either on a table or from behind a counter. Providing **finger foods** for a guest to select at a function is also considered self-service. With more formal meals, the food and beverage attendant will be more involved in serving the guests and the table setting will be more structured.

7.8.1 Styles of plating food

Plate service	All the food is put on a plate before being served.
Part plate service	The main item is put on the plate while the vegetables are served in a separate container from which customers help themselves.
Semi-silver service	The main item is put on a plate while vegetables are placed onto the plate at the table by a food attendant.
Silver service	An empty plate is presented to the customer and the food attendant serves all the food using a fork and spoon.
Guéridon service	The food attendant prepares all or part of a dish at a small table or trolley beside the customer's table.

Number of courses

Buffet and self-service work well when there are only a few courses to be served. As courses increase in number, it may be easier to provide plate service using traditional formal table setting.

When setting a table for formal service:

- allow 60 centimetres from the centre of one place setting to the centre of the next
- use clean, crisp tablecloths with dry, shiny, clean and undamaged glassware, cutlery and crockery
- working from the outside in, arrange cutlery 2 centimetres from the table edge in the order of courses with the knife blades facing the plate (in à la carte service only the main course knife and fork are set, the rest are laid out after orders have been placed)

Smorgasbord is the Swedish term for 'buffet'.

finger food: small appetiser or sweet item that can be picked up and eaten with fingers rather than cutlery

RECIPE

PROFITEROLES
p. 334

7.8.2 Attractively presented food entices diners.

7.8.3 A table setting for a table d'hôte

- dessert cutlery may be presented with the dessert or laid on the table before the meal either next to the other cutlery or horizontally above the plate—if horizontal the dessertspoon handle faces right and the dessert fork is placed below the dessertspoon with its handle facing left
- clear all plates, condiments and unused cutlery prior to serving desserts
- place glasses at the top of the dinner knife—in formal settings there are different glasses for different drinks
- place serviettes in the centre of the plate, to the left of the forks, above the plate, on the bread-and-butter plate or in the wine glass
- use attractive and appropriate table decorations that do not interfere with service or communication between guests.

Customer requirements

Families, couples, groups, business people, young children and seniors all require different styles of food service. For example, families with young children often prefer low-cost dining with prompt service and a children's menu.

Cost

Service where dining facilities are provided as well as waiting staff to serve food is more costly than self-service, buffet or takeaway service. Usually the more a customer pays the more an elaborate and attentive service can be expected.

Time available

When a meal needs to be eaten quickly, takeaway service or self-service works well. When more time is available a more formal table service may be appropriate.

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Hands on

Folding serviettes

Purpose

To practise different approaches to table settings. Serviettes folded in different ways catch the attention of diners and are fun to do.

Materials

paper serviettes

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Steps

The fan

1 Fold serviette in half

2 Concertina with narrow fold (5 peaks)

3 Fold in half

4 Fold long end down

5 Fold flat along dotted line

6 Let fan spread out and fall

The boomerang

1 Roll serviette from corner

2 Complete the roll

3 Fold roll in half and place in glass

Activities

1. Which style of folding is more suitable for a casual barbecue?
2. Which style of folding is more suitable for a sit-down function?

FOOD IN FOCUS

Fratelli Del Mare

Fratelli Del Mare is Italian for 'brothers by the sea'. This name describes perfectly the two brothers-in-law who work together and surf together and who run the restaurant Fratelli Del Mare at Cronulla beach. The two Pauls, as they are known to their friends, Paul Farrugia and Paul Breheny, have worked as chefs at some of the finest restaurants and resorts in the world. Their restaurant features Italian cuisine with a modern Australian twist.

The restaurants seats 110 people but on a busy night it can turn over 180 covers. It employs two chefs and four apprentice chefs. Indeed, both Pauls are committed to training future chefs as both also teach commercial cookery at TAFE. Their back-of-house employees work full-time but their eight wait staff work causally. Both Pauls take on the maître d' role on the floor of the restaurant, but with an open kitchen design and their experience in cooking they also keep a good eye on what is going on in the kitchen.

The restaurant offers a variety of menus to suit their customers' needs. On Monday nights and Sunday lunch the restaurant holds a lot of functions such as christenings and birthdays and as result they offer function menus. The restaurant also has à la carte and table d'hôte menus, which are popular with diners when they want to eat out. It also offers a degustation menu, which is popular with couples. A degustation menu provides many menu courses but small portions of food. It also highlights the chef's signature dishes. As Italian cuisine is family oriented, there is an also a special deal for kids' meals.

House specialities include eye fillet Del Mare (beef eye fillet wrapped in prosciutto, topped with prawns, red wine, tarragon, dill and lime butter sauce), duck rigatoni (slowly roasted duck tossed with red wine and fresh pecorino cheese with chilli), and vitello pane (herb crusted veal, with rocket and parmesan, served with oven-roasted tomato sauce on lemon-scented potato). The rocket salad is very popular with rocket, spinach, caramelised maple pear, gorgonzola cheese and lemon.

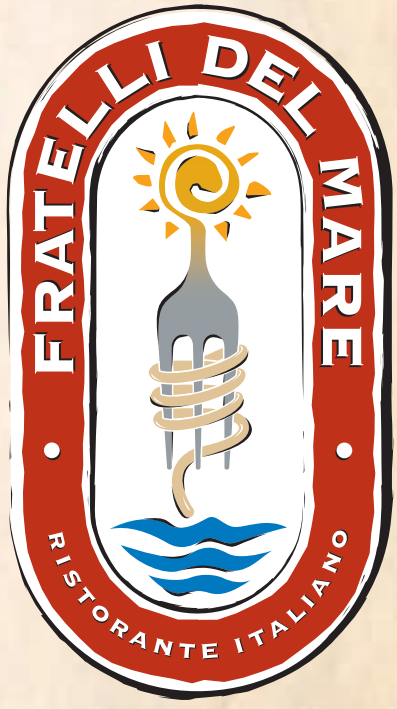
Fratelli Del Mare is dedicated to ensuring that their food is of high quality and they source from reputable suppliers. They also believe in making recipes from scratch such as freshly made tomato sauces for their pasta dishes. All their food is fresh and prepared daily to ensure the best taste.

Fratelli Del Mare advertises in the local newspaper and they also have a website; however, they have become a popular restaurant through word of mouth. They have had successful business for over six years. Both Pauls believe that if your food is good and you offer value for money customers will come back and recommend your restaurant to other people. Their restaurant has won numerous local business awards based on community vote and they were also voted as state finalists by the NSW Restaurant and Catering Association in 2008. These awards are proudly on display in their restaurant.

Source: Based on information on the Fratelli del Mare website

Activities

1. What type of food service establishment is Fratelli Del Mare?
2. Who is employed in the kitchen at Fratelli Del Mare?
3. What front-of-house positions are there at Fratelli Del Mare?
4. List three menus types available for customers to select at Fratelli Del Mare.
5. Describe a house speciality of Fratelli Del Mare.
6. How do Fratelli Del Mare promote their restaurant?



7.8.4 The Fratelli Del Mare logo

UNIT REVIEW

Looking back

1. Compare two styles of plating food for service.
2. List five tips for plating food attractively.
3. Identify four different types of customers common to the food service and catering industry.

For you to do

4. You are a wedding planner. Make some suggestions to a couple with 100 guests on:
   - styles of meal service
   - number of courses
   - costs per head
   - reception time
   - decorations.
5. Practise setting tables for the following function menu (or sketch the table setting):
   - spring vegetable soup
   - rack of lamb served with puréed kumara
   - lemon ricotta tart.

Taking it further

6. Prepare a dish suitable for a Valentine's Day dinner in class and then set the table appropriately for the occasion.

Additional content: operations of a small business venture

7.9

A small business usually has fewer than one hundred employees. Many restaurants, cafés, takeaway outlets and function caterers are run as small businesses.

Most owners of small businesses claim that working in their own business is enjoyable and rewarding but it is also time-consuming and hard work. To ensure success, small food ventures are encouraged to write proposals prior to establishing new businesses.

A proposal usually includes:

- a description of the business—where, what and why
- a market analysis—the opposition and the opportunities, strengths and weakness of the business
- a marketing plan—how the business will be promoted
- a financial plan—where finances will be obtained and how income is expected.

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7.9.1 Factors to consider when establishing and operating a small business

Economic	Legal	Environmental	Commercial
Equipment and decor Menus Advertising Rent Utilities such as water and gas Labour costs Food Insurances Cleaning Taxes such as GST Loans	Businesses registration Council approval Legislation—health and hygiene, occupational health and safety, fair trading, industrial	Environmentally friendly packaging Recycling glass, paper, water and grease Energy-saving techniques	Producing goods and services that consumers want Setting prices to cover costs and that consumers are willing to pay Appropriate location and operating times

FOOD IN FOCUS

Barclay's Café

John Lewis and his wife Judy run the Barclay's Café. Judy had been in catering and so had some experience in the field. But John had no expertise. The business employs fifteen staff, including a bookkeeper. They also use computer software to get an understanding of which products sell best and which don't meet sales expectations.

The café caters for breakfast and lunch and their venue provides tables indoors as well as outdoors in a courtyard. Functions are also held at the café.

Barclay's has a healthy approach to its menus. For breakfast their ingredients include gluten-free muesli, whole-grain breads, free-range eggs, a range of low-fat milks and soy milk. Freshly prepared sandwiches are popular for lunch. Barclay's caters for local business with sandwich platters, cake selections and custom-made orders.

John says it took at least six months of planning and putting ideas together and getting resources before they were able to open the café. 'We also had to get a bank loan, and to do so we had to produce a business plan, work through what we really wanted to do, what our resources were, who and what staff we would have. The hardest bit was working out how many cups of coffee we would sell two years down the track'. John also had to find out all the rules and regulations for starting a food business. Local council was most helpful in this area.

After a lot of hard work, time and stress, John and Judy have decided to purchase a second café. Because of the learning involved in operating their first café they believe it may be easier second time round.

Activities

1. How many staff does the cafe employ?
2. What were three things John had to include in their business plan?
3. Who assisted John in finding out about rules and regulations for operating a food business?
4. Who do you think uses the café?
5. What roles do you think a bookkeeper would have?
6. What other staff do you think are required to operate the café?

UNIT REVIEW

Looking back

1. Define the term 'small business'.
2. Give three examples of small businesses that operate in the food service and catering industry.
3. List five operating costs in operating a business.
4. List two legal issues that need to be considered when starting a business.

For you to do

5. Make a proposal for a small food business that you would like to operate. Include the following information in your proposal:
   - what type of business you would like to start
   - where your business will be located and why
   - what foods will be sold
   - what equipment your business will need and why
   - what staff will be required and why
   - how you will promote your business.

Taking it further

6. Visit a small food business in your community and report on the business, for example products sold, opening hours, location and staff duties.

Chapter review

Looking back

1 List three profit-making food service ventures.

2 Describe the role of two back-of-house career opportunities in the food service industry.

3 Describe the role of two front-of-house career opportunities in the food service industry.

4 Describe the role of a manager in the food service industry.

5 Give three requirements for working in the food service and catering industry.

6 Outline two responsibilities of employees.

7 What is an award?

8 Outline four consumer rights.

9 What does the acronym FIFO stand for?

10 Identify four parts of a recipe.

11 Outline three menu planning considerations.

For you to do

12 a Find examples of an à la carte menu and a table d'hôte menu, and compare them.

b Discuss the advantages and disadvantages of both menus.

13 Explain how a menu may be different for a sit-down function than for a function where the guests stand.

14 Make a list of different ways in which you can modify a basic muffin recipe.

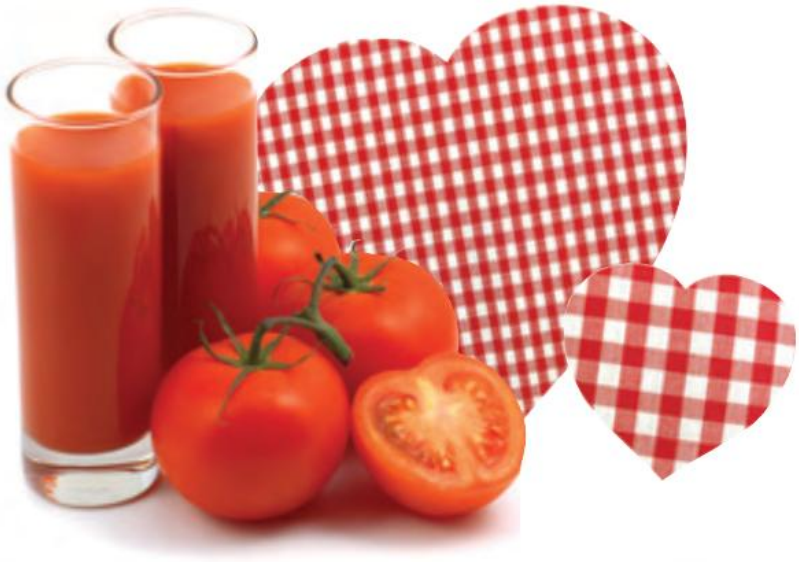
Taking it further

15 Prepare a mother's day breakfast on a tray. Create a menu that explains your choices.

16 a Look up employment opportunities in the food industry on the internet.

b Find a front-of-house and a back-of-house opportunity.

c Identify the qualities and qualifications required for the job.



Chapter 8

Food for life

Focus area: Food for special needs

The food needs of individuals are determined by a number of factors, including cultural influences and location, as well as changes in age, health and lifestyle. This chapter investigates the special food needs of individuals. The recipes included in this chapter are quick to make and nutritious and can be easily adapted to meet the specific needs of all individuals.

Chapter outcomes

In this chapter you will learn about:

- circumstances that lead to special food needs
- support networks for individuals with special needs
- preparation and processing of foods for special needs such as low kilojoule, low salt, high fibre, high protein, low fat
- planning considerations for safe and nutritious foods for special needs.

In this chapter you will learn to:

- identify the circumstances that may lead an individual to have special needs
- examine a range of support networks available for individuals with special needs
- prepare and assess the suitability of a range of processed/prepared foods for dietary disorders
- design, plan and prepare a menu/meal/dish suitable for a special need
- research the circumstances of a particular group and organise a dietary plan.

Circumstances that lead to special food needs

8.1

The stages of the human **life cycle** are infancy, childhood, adolescence, adulthood and older age, as well as pregnancy and lactation. Nutritional requirements are different at each stage of the life cycle (see Chapter 2).

Pregnancy

In pregnancy, a woman's diet must provide all the nutrients required for the development of the embryo and foetus. This is why it is important for the mother to have a well-balanced, nutritious diet established prior to her becoming pregnant.

A developing foetus does not use a lot of energy, so a large amount of extra food is not necessary.

A pregnant mother requires:

- a good supply of protein for the growth of new cells
- additional calcium, phosphorus and Vitamin D to assist bone and teeth formation
- B Group vitamins, which aid the metabolism of carbohydrates
- iron and folate to prevent **anaemia**
- increased fibre intake to prevent constipation
- 6–8 glasses of water per day.

Alcohol consumption should be restricted during pregnancy, as it may cause foetal alcohol syndrome. Smoking and the consumption of illegal substances are not recommended at any stage of the life cycle and during pregnancy they can reduce the supply of oxygen, which significantly affects the growth of the baby.

Lactation

When a woman is breast-feeding she is said to be lactating. An increase in nutrients, specifically protein, vitamins and minerals, is essential at this time as the mother is producing the food requirements for her newborn child. This production of breastmilk is known as **lactation**. Breastmilk is high in energy and a complete source of nutrition for most babies up until the age of six months.

8.1.1 Pregnancy requires a nutrient-rich diet.

life cycle: stages through which people pass that begin when a female egg is fertilised and end at the time of death

anaemia: condition resulting from an inadequate intake of iron, causing the sufferer to feel weak, tired and fatigued

lactation: production of milk for breast-feeding

The recommended weight gain during pregnancy is between 10 and 13 kilograms..

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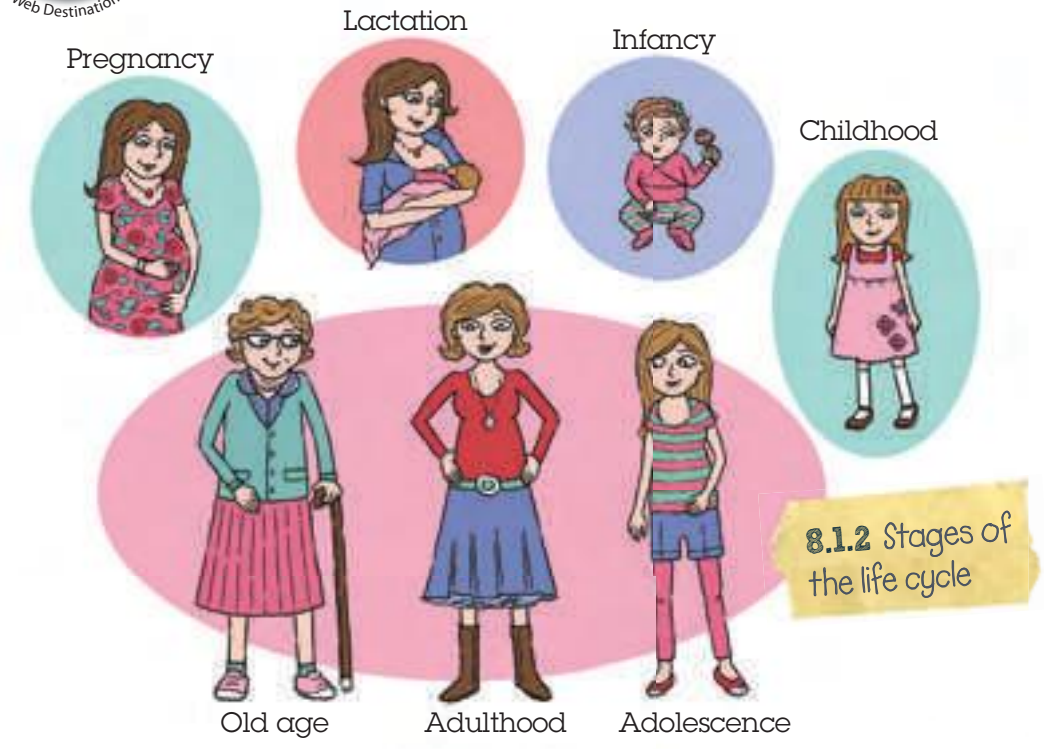

8.1.2 Stages of the life cycle

RECIPE

CHARGRILLED BEEF SALAD p. 335

8.1.3 Breast-feeding supplies a baby with all food and nutrient needs. Mothers are being encouraged to breast-feed under new government policies.

colostrum: first breast liquid produced by a mother after childbirth; it is high in proteins, minerals and antibodies

antibody: protein produced by the body to fight foreign particles

The sense of smell is intensified during pregnancy. This is why some pregnant women suffer from nausea when they smell certain foods.

Breastmilk provides perfect nutrition and important substances for protection against infection, and is easily digested by an infant. The first fluid to come from the breast is a substance called **colostrum**, which is rich in **antibodies**, proteins and minerals but has less sugar and fat than the milk that follows.

FOOD IN FOCUS

Breast is best for six months

MOTHERS will be encouraged to feed their babies only breast milk for at least six months as part of an ambitious new national breast-feeding policy.

The goal of this policy is to increase breast-feeding levels as currently only 14 per cent of mothers are fully breast-feeding their babies to six months. Nearly half of mothers have abandoned breast-feeding after three months.

Federal and state health ministers have endorsed the new strategy, which calls for more community acceptance of breast-feeding in public, more support and training for mothers before and after delivery, and increased access to parental leave.

Breastfeeding expert Jennifer James said government leadership was vital to making breast-feeding more socially acceptable in Australia. Considering over a quarter of Australians think that breast-feeding in public is unacceptable, we know there is a long way to go. Dr James said it was particularly worrying that recent research had shown many women aged 18–25 disapproved of breast-feeding in public.

Dr James welcomed the new strategy's recommendation for more practical support for mothers to begin breast-feeding and support for workplaces to adapt to the needs of breast-feeding mothers. Health Minister Nicola Roxon said Australia did not have high levels of breast-feeding compared with many countries, even though there was strong evidence of health benefits for babies and mothers.

Source: *The Age*, 14 November 2009

Activities

1. Identify why the new national breast-feeding policy is being developed.
2. Why do you think many 18–25-year-old women disapproved of breast-feeding in public? Do you think older women also find it socially unacceptable? Discuss your thoughts with the rest of your class.
3. Explain how community acceptance and increased parental leave would support breast-feeding mothers.
4. Use the internet to research a country with high levels of breast-feeding. Compare this country with Australia and identify the similarities and differences that are evident.

Infancy

Infancy is the stage of the life cycle from birth to 12 months of age. Nutrition is important during this time, as rapid growth and development take place. A well-balanced diet is required for the total development of the child. After about six months of thriving on breast or formula milk, a baby may need some solid food for extra nutrients. From about six months of age babies also need texture in their food to encourage them to chew and develop the muscles that will be required for speech. From the very first time a baby is offered food other than milk, the process of **weaning** has started. It is important not to introduce solid food too early as the digestive system and kidneys are not developed enough to cope with food.

Childhood (1–12 years)

During childhood there are increasing energy and nutrient needs. Some children are more active than others and may require more complex carbohydrates to meet energy needs. Healthy eating habits developed in early childhood will lay the foundation for healthy eating habits in adulthood. Healthy eating may reduce the risk of nutrition-related disorders in the future. Many Australian children are suffering from obesity to the point where it has almost become an epidemic. Too many children come home from school and sit in front of the television or computer rather than run and play outside with friends. This can lead to children being overweight and obese.

Adolescence (12–20 years)

The teenage years are a time of rapid growth and development, when adolescents need more energy. Rapidly growing bones also need plenty of calcium. The increase in body tissue and hence blood volume in boys and the onset of menstruation in girls mean that extra iron is needed by both sexes. There is an increased need for:

- energy for functioning of the body
- protein for growth and repair
- vitamins for maintenance, health and development
- minerals, especially calcium, phosphorus and iron.

wean: introduce semi-solid foods into the diet of the infant and reduce milk intake

Approximately 25–30 per cent of Australian children are overweight or obese. Australia has one of the highest rates of childhood obesity in the world and it is rapidly increasing. Overweight and obese children have a 80 per cent risk of becoming overweight or obese adults.

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RECIPE

VEGIE PANCAKES WITH HAM, TOMATO AND AVOCADO p. 336

RECIPE

TUNA AND FETTA TURNOVERS p. 337

FOOD IN FOCUS

Adult measures on food labels mislead parents

Parents are being duped into pumping their children full of high-kilojoule foods because of misleading labelling.

Children could be eating the same amount as an active 70 kg man despite well-meaning parents closely studying the backs of food packets. Many food labels aimed at children give nutritional information based on the recommended intake for an active male, which can be more than 25 per cent higher than what children should eat.

One in five Australian children and adolescents are overweight or obese and are consuming amounts of salt well above the recommended maximum levels. The recommended daily intake of kilojoules for a five-year-old is 6500–7000, but the recommended daily intakes of fat, sugar, carbohydrates and sodium found on the backs of some food packaging are based on an active male's 8700 kJ per day allowance.

Nutrition information for Maggi Super Noodles, oriental flavour, for example, show the food contains 76 per cent of the sodium and 32 per cent of daily recommended saturated fat intake. But although the packaging suggests it's aimed at children, the recommended intakes are for an adult male.

Source: *Herald Sun*, October 2009

Activities

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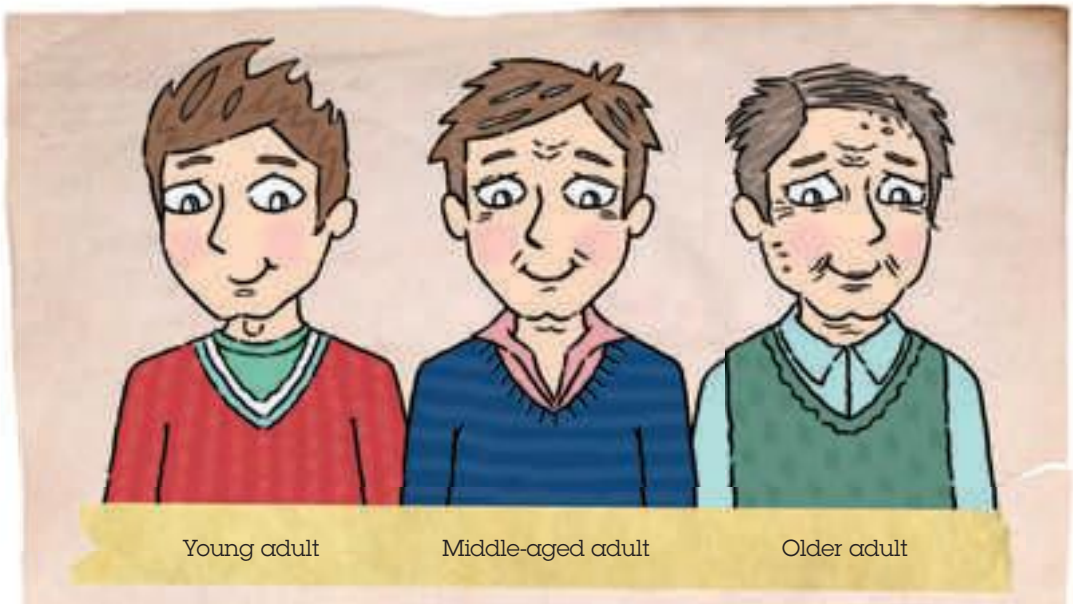
1 Revisit Chapter 2 and locate the Recommended Dietary Intake (RDI) for children and adolescents. List five of your favourite foods and investigate whether the sodium, sugar and saturated fat levels are higher than Food Standards Australia recommends.

2 Using the website link, visit the Food for Kids website and select a food product that you consume regularly. Does it meet the RDI levels set down for your gender and age? Discuss your findings with the rest of your class.

3 Discuss strategies that could be implemented to prevent children becoming overweight or obese.



8.1.4 Nutritional requirements are different at each stage of the life cycle.

Adulthood

At this stage in the life cycle, growth has usually stopped and activity levels have stabilised or declined. If a **balanced diet** is consumed all nutrients necessary for good health will be obtained. Adults need to ensure that their energy intake balances their energy output so that weight gain is avoided. By middle age approximately 50 per cent of Australians are overweight, due to a combination of high kilojoule intake and decreased physical activity. The dietary guidelines for Australian adults have been developed to encourage healthy lifestyles that minimise the risk of developing diet-related disorders. Refer to these dietary guidelines in Chapter 2.

The aged

Australians are living longer than ever before. In 2008, around 13 per cent of Australia's population was aged 65 and over; by 2056 this figure is expected to be between 23 and 25 per cent. Good nutrition and an active lifestyle are vital in maintaining the well-being and health of older people.

Older Australians, particularly those living alone, can lose the motivation to prepare meals for themselves and this can lead to **malnutrition**. While appetite and energy requirements generally decrease, a balanced diet is important. Attention should also be paid to specific nutrients such as protein, calcium, iron and Vitamin C. Being overweight or obese may become a problem unless sufficient exercise is undertaken.

The nutritional needs for older people have been recognised through the development of the following specific guidelines for healthy independent Australians aged 65 years and over.

8.1.5 Good nutrition and an active lifestyle are vital in maintaining the well-being and health of older people.

1. Enjoy a wide variety of nutritious foods.
2. Keep active to maintain muscle strength and a healthy body weight.
3. Eat at least three meals every day.
4. Care for your food—prepare and store it correctly.
5. Eat plenty of vegetables (including legumes) and fruit.
6. Eat plenty of cereals, breads and pastas.
7. Eat a diet low in saturated fat.
8. Drink adequate amounts of water and/or other fluids.
9. If you drink alcohol, limit your intake.
10. Choose foods low in salt and use salt sparingly.
11. Include foods high in calcium.
12. Use added sugars in moderation.

balanced diet: nutrition intake that provides energy, nutrients, dietary fibre and fluids in amounts appropriate for good health

malnutrition: ill-health caused by an imbalance in food intake that results in the body not receiving an adequate supply of nutrients; results from not enough food or too much of the wrong food

RECIPE

MARINATED SEAFOOD WITH TABOULI p. 338

UNIT REVIEW

Looking back

1 Why is it important for pregnant women to consume sufficient dietary fibre?

2 What is meant by the term 'lactation'? Explain why the mother needs a good supply of protein during lactation.

3 Why is it important to establish good food habits during very early childhood? Explain how the diets of parents can influence what their children eat.

4 Compare the Dietary Guidelines for Australian Children and Adolescents to the Dietary Guidelines for Australian Adults. Outline the differences and similarities. (These guidelines are in Chapter 2.)

5 How can adolescents be encouraged to take responsibility for their own nutrition?

6 Explain how the nutritional requirements of adults are different from adolescents.

7 Why is it important for the elderly to select nutrient-dense foods rather than energy-dense foods?

For you to do

8 Breast-feeding offers nutritional advantages. Research other reasons for breast-feeding.

9 Research the nutritional composition of infant formula. Compare the nutritional composition of breast milk with infant formula.

10 Refer to the *Australian Guide to Healthy Eating* (see page 54).

   a Compare the recommended food serves for pregnant women with those of adult females. Outline any similarities and differences.

   b Design a daily menu that would be appropriate for a pregnant woman.

   c Identify foods in the menu that provide iron, calcium, Vitamin C, folate and protein.

11 Identify your ten favourite foods. Why do you like these foods? How many of these foods are nutrient-dense?

12 Outline the major faults in the following meal pattern of some teenagers: no breakfast; a packet of chips at recess; a sausage roll, soft drink and chocolate bar for lunch. How can such eating habits be changed?

13 Suggest five nutritious meals that are suitable for adults. Explain why the meals are nutritious.

14 Prepare an easily made dinner that would be appropriate for a frail older person. Use your imagination to make it nutritious and delicious, yet relatively inexpensive. Visit a supermarket and cost the ingredients used to prepare this meal.

Taking it further

15 Investigate the problems that teenage mothers may face in meeting their own nutritional needs as well as those of the growing baby.

16 In class, debate the following topic: 'Breast-feeding or bottle-feeding: Which is best?'

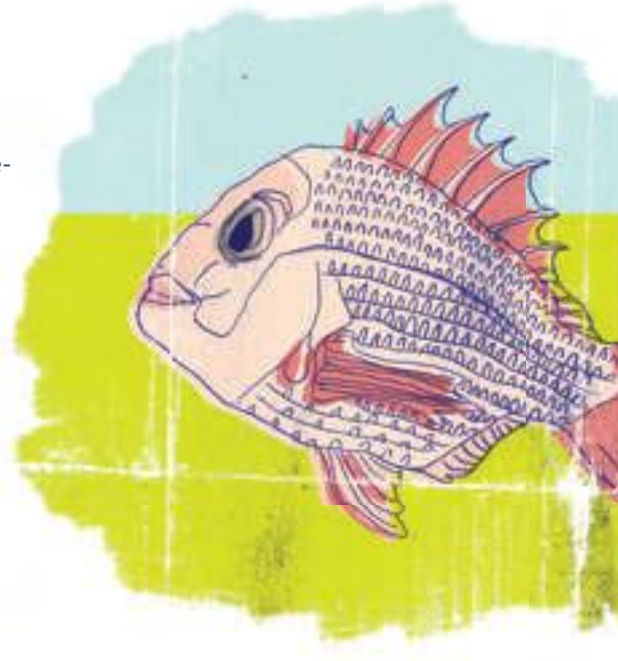
17 Design a brochure promoting nutritious diets for children between the ages of 2 and 5 years. This brochure could be handed out to adults at preschools or displayed in doctors' surgeries.

18 You have the chance to make a New Year's resolution to improve your eating habits. Using no more than sixty characters, send a text message to a friend, highlighting the changes you intend to make.

19 Plan a national television advertisement or presentation to improve the health of Australian adolescents. Use a desktop publishing program to develop ideas and plan a storyboard to show you would present your ideas. Consider:

- the information you want to get across to your audience
- the methods you will use to make adolescents aware of your campaign.

20 Jack is an 80-year-old pensioner who lives alone in a one-bedroom apartment on the third floor of an inner-city block of flats. Jack has no family and cannot be bothered to cook for himself. Jack has a small refrigerator, a stove and an electric jug. His diet is not well balanced and his health is poor. Discuss how Jack's diet could be improved and write down a plan that he could follow.



Health status

8.2

8.2.1 Foods produced from soy are lactose-free.

Food allergies and food intolerances affect nearly everyone at some point in their life. You may have had an unpleasant reaction to something you've eaten and wondered whether you have an allergy or intolerance to that particular food. Such reactions, if severe enough, can cause devastating illness and, in some cases, can be fatal.

Allergies

A **food allergy** occurs when your immune system responds to a food it mistakenly believes is harmful. When you eat it, the immune system immediately releases huge amounts of chemicals into your body to try to 'protect' it against the food consumed. These chemicals then trigger allergic symptoms that can affect your breathing, skin, gastrointestinal tract and cardiovascular system.

Common triggers for food allergies include:

- seafood
- gluten (wheat, rye, barley and oats)
- cow's milk
- nuts—especially peanuts
- soy beans and soy products
- sesame seeds.

Intolerance

Food intolerance occurs when the nerve endings in different parts of the body become irritated, causing symptoms such as stomach and bowel troubles, headaches, swelling or hives.

Telling the difference

Food allergy and food intolerance can be difficult to distinguish, as both have very similar symptoms. The main difference is that a reaction to a food intolerance takes a lot longer to appear, often several hours or a day or two later. The body reacts only when a food chemical (natural or added) builds up in sufficient quantities to cause a reaction.

Common triggers for food intolerances are:

- milk
- eggs
- nuts
- fish/shellfish
- wheat/flour
- chocolate
- artificial colours
- pork/bacon
- chicken
- tomato
- soft cheese
- yeast.

PP Web Destination

food allergy: abnormal, unpleasant or adverse reaction to food by the body's immune system

food intolerance: abnormal, unpleasant or adverse reaction to food caused when the nerve endings in different parts of the body become irritated

Each year, between ten and twenty people in Australia die from anaphylaxis, an extreme allergic reaction where the mouth, tongue and throat swell and constrict breathing. Many more have severe allergic reactions.

Food intolerances affect 5 to 10 per cent of the adult population, whereas food allergies affect 1 per cent.

FOOD IN FOCUS

Riley's story

Riley is almost 10 and has suffered from food allergies and intolerances all of his life. Riley was first diagnosed with an allergy to dairy foods when he was 6 months of age and 6 months later he was also diagnosed with an allergy to egg. Severe wheat intolerance occurred when he was 2 years old and at 6 years old he suffered a serious reaction to red meat, requiring immediate hospitalisation and the administration of adrenalin; this was his first anaphylactic reaction. With a reaction as serious as this, appointments with specialists and dietitians became more frequent. Under instruction from an immunologist, the services of an accredited dietitian were sought, as Riley had to undertake an elimination diet. All known allergens and food chemical triggers were removed from his diet, and then in stages, once Riley was symptom free, foods were then reintroduced to determine tolerance levels, symptoms and their severity. The outcome of this testing was so life-changing that Riley must always make sure that the following foods are completely eliminated from his diet.

1. wheat and wheat-containing foods
2. all artificial colours and preservatives
3. all amine-containing foods
4. some foods that contain salicylates.

As a result of these food allergies and intolerances, Riley has to maintain a very strict diet. If he deviates from this diet then he and those around him have to suffer the symptoms that occur—severe hyperactivity, extreme fatigue and lethargy, vomiting, aggressive and violent behaviour, inability to concentrate, rashes, reflux and insomnia.

Riley is still able to maintain a very happy, normal life, despite the fact that he is required to carry antihistamine medication and an Epi-pen at all times and is unable to indulge in a slice of pizza, packet of chips or many foods that others can tolerate. Riley has competed at state level in swimming, athletics and cross country, and he continues to be dedicated to training, excelling in middle-distance running and all aspects of swimming—he has his sights set firmly on becoming a triathlete in the future!

Riley and his family are lucky to have an active support network in their town, with Riley's school also being very supportive and proactive in educating other children in his peer groups about allergies and ensuring that they realise that Riley isn't any different.

Riley believes that the main thing to remember is that a food allergy or intolerance is not a disability; it does require some special attention and care to ensure that sufferers are accommodated in all social situations. It isn't necessary to exclude a person from a situation because of fear; people need to simply educate themselves to ensure safety in all situations.

8.2.2 Riley

Activities

1. Explain the difference between food allergy and food intolerance.
2. Define the term 'anaphylactic reaction' and outline the cause and symptoms.
3. Find out more about one of Riley's intolerances. Identify foods that should be avoided by people affected by this intolerance. List alternative food sources.
4. Make a list of commercial food products that cater for people affected by this intolerance.
5. If you were asked to plan a diet for Riley, what difficulties would you face? How can these difficulties be overcome?
6. List the different ways that you could make a person with an allergy and/or intolerance feel welcome and included at a social function you were hosting.

RECIPE

CHICKEN RISOTTO p. 339

Recovery from illness or injury

When people are recovering from an illness or an injury they are **convalescing** or getting better. Injury and illness create stress on the body. Adequate nutrition can really make the difference in the recovery of people with severe injury or illness.

Injury increases the body's metabolism, and larger quantities of protein, vitamins and minerals are especially important. However, hunger may decrease, as illness or injury tends to reduce the appetite. A patient may not feel well enough to eat a high-protein meal such as fish and vegetables yet will be able to benefit from an intake of protein by consuming a protein-rich drink made from milk and eggs, or by eating yoghurt.

Small, regular meals play an important role in the recovery from illness or injury. It is important to remember that all meals do not have to be soft for them to be easily digested, unless the patient has no teeth or is too ill to chew food. Foods that are more difficult to digest should be avoided, for example fried foods, pastries, cakes, nuts or any fatty foods.

convalescence: period of recovery of health and strength after injury or illness

8.2.3 Supermarkets now stock a variety of gluten-free products.

Looking back

1. Outline the causes, symptoms and treatment of a person suffering from a food allergy or intolerance.
2. Explain the cause and symptoms of coeliac disease.
3. Define the term 'convalescence'.
4. Outline the special nutritional needs of convalescent people.
5. Suggest ways of making a convalescent person's meals attractive.

For you to do

6. Interview your family and friends to find out if any of them suffer from a food allergy or intolerance. Make a list of the foods they must avoid. Suggest suitable alternatives for each of the foods.
7. Plan a day's menu suitable for a teenager with an allergy to milk and gluten. Did you find this task difficult?
8. Interview a relative or friend who has been hospitalised for surgery. List the types of foods served during their hospital stay. Suggest three recipes that would assist recovery after surgery.
9. Think of an occasion when you were ill and recovered slowly. Which foods did you consume? Did the doctor recommend any special foods? Why?

Taking it further

10. Design an information pamphlet for parents whose child has a particular allergy or intolerance. The pamphlet should include an explanation of the allergy/intolerance symptoms. You should also include menu suggestions for breakfast, lunch, dinner and snacks. It may also have a feature recipe of a food product or meal you have tested that would be suitable.
11. Plan a day's menu for:
    - a person who has facial injuries and is finding it difficult to chew
    - a person who has a knee injury but no difficulty in chewing.

    Explain why you chose these menus. Are the same nutrients provided in both menus?

UNIT REVIEW

8.3

Diet factors

Results from the 2007–08 National Health Survey run by the Australian Bureau of Statistics were released in 2009. The results were as follows.

- 61 per cent of Australian adults were overweight or obese.
- More men (68%) than women (55%) were overweight or obese
- Approximately 25 per cent of all children were overweight or obese.
- More boys (26%) than girls (24%) were overweight or obese.

PP Web Destination

The major causes of death in Australia are linked to diet and lifestyle. Some people consume a well-balanced diet while others do not. Poor nutrition and an unhealthy lifestyle are related to many disorders, including alcoholism, anorexia nervosa, bulimia, dental cavities, diabetes, heart disease and obesity. Making the right food choices can significantly reduce the risk of developing diet-related disorders.

Diet-related disorders

Alcoholism

Alcoholism is the regular consumption of large quantities of alcohol over a long period of time, which can lead to serious health problems, such as liver disease, disease of the pancreas and some types of cancer. Alcoholic drinks also provide many extra kilojoules and often can lead to obesity.

Anaemia

Anaemia is a blood condition and is the most common deficiency disease in Australia, particularly in females. Estimates suggest that around one in five menstruating women and half of all pregnant women are anaemic. Anaemia has a wide range of causes, including certain diseases, conditions and medications. Iron deficiency is the most common cause.

Anorexia nervosa

One of two common eating disorders, anorexia is a condition in which a person refuses to eat sufficient food to maintain a minimum normal weight for age and height. The consequent wasting away has serious effects on many body systems, and may result in death.

Bulimia

Bulimia is an eating disorder marked by cycles of binge eating of excessive quantities of food, followed by purging through vomiting or use of laxatives or diuretics. The purging can seriously damage health. Unlike anorexia, a person with bulimia is rarely grossly underweight.

Dental cavities

The incidence of dental cavities in the Australian population has reduced over the past decades, mainly due to improved nutrition, fluoridated water supplies and improved dental hygiene. Dental cavities occur when bacteria in the mouth convert sugars and refined starches from foods and liquids into acids. The acid that is produced in the mouth can dissolve the outer layer of tooth enamel, resulting in a cavity.

Diabetes

Diabetes can be life-threatening if not carefully controlled. It is expected to affect one in four Australians within the next few years. Diabetes occurs when there is too much glucose in the blood. If blood glucose levels are constantly higher than the recommended range, health problems can develop.

Coronary heart disease

Coronary heart disease kills one in three adult Australians and is the leading cause of death in Australia. It occurs when the arteries in the heart become clogged with fatty deposits that restrict the amount of blood that can be pumped through them—sometimes they even become totally blocked. This makes the heart work harder to pump blood around the body and places extra pressure on the heart.

Obesity is a very serious problem in Australia—approximately two-thirds of the adult population are overweight and 20 per cent are classified as obese. It is estimated that, if the current trend continues, by 2010, seventy per cent of Australians will be above their healthy weight range. Too much food and too little physical exercise result in an increase in weight. Obese people are those who are 20 per cent or more above their recommended weight for height. People who are obese are also at a higher risk of developing other diet-related disorders.

8.3.1 Key facts about diet-related disorders

Prevalence—number of Australians with condition in 2004–05	637 900
Incidence—number of events in 40–90-year-olds in 2005	47 730
Hospitalisations in 2006–07	162 328
Deaths in 2006	22 983

Source: ABS 2004–05 National Health Survey; ABS 2003 Survey of Disability, Ageing and Carers; National Hospital Morbidity Database & AIHW National Mortality Database.

8.3.2 Too much food and alcohol and too little exercise can lead to diet-related disorders.

FOOD IN FOCUS

Coronary heart disease

Garry Cornius, a 57-year-old man, is one of the increasing number of Australians who have experienced coronary heart disease. He is now learning to modify his lifestyle, with the assistance of many support agencies, so that he can continue to lead a happy and healthy life.

In 2009, Garry was enjoying a movie when he started to experience indigestion, a shortness of breath and pains in his arm, neck and chest. He was close to his local hospital and decided, luckily, to visit the emergency department to see what was causing these symptoms. Garry was quickly admitted. After many blood tests, X-rays and other procedures, Garry was asked to undergo a stress test on a treadmill. This stress test caused Garry's heart rate and blood pressure to elevate rapidly and induced a heart attack. He was medicated and rushed to Royal North Shore Hospital in a critical care ambulance. On arrival, Garry was immediately worked on by a cardiac surgeon, who discovered that Garry's main artery to his heart was 99 per cent blocked.

After undergoing surgery, spending one week in intensive care and another six weeks in recovery, he began the slow process of making changes to his lifestyle. Through this process Garry has discovered that exercise, rehabilitation and lifestyle modification are beneficial in preventing and controlling coronary heart disease.

Risk factors that can be easily modified are:

- tobacco smoking
- physical inactivity
- alcohol misuse
- poor nutrition
- high blood pressure
- high blood cholesterol
- excess body weight
- diabetes.

Garry continues to access a wide network of agencies who provide support and information for people with special needs. These networks include his family, friends, private organisations and government agencies, all of which were invaluable to his recovery and continued good health.

Activities

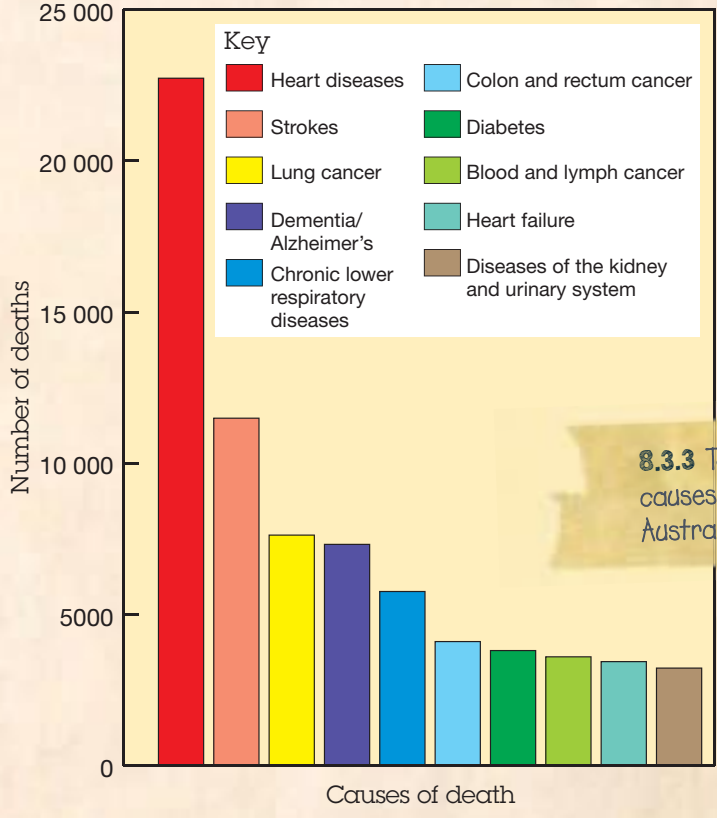
1 Define the term 'coronary heart disease'.

2 Using the website link, visit the Virtual Medical Centre website. View the video titled 'Cardiovascular Disease Prevention' and design a flyer that could be used to educate people on the ways in which the disease can be prevented.

Web Destination

3 Using the website link, visit the Heart Foundation website and outline the dietary advice you could provide to a person who was at risk of developing coronary heart disease.

4 Use the recipe finder on the Heart Foundation website to plan a day's menu that would meet Garry's special dietary needs.



8.3.3 Top ten major causes of death in Australia

Source: Australian Bureau of Statistics, 2009

FOOD IN FOCUS

Surgeons fear rapid rise in super-obese

Jill Stark

Almost 500 000 Australians are 'super obese', a five-fold increase over two decades, with weight loss surgeons reporting they are treating more patients at serious risk of premature death.

Obesity experts estimate that 2 to 3 per cent of the population is so large they have outgrown obese and morbidly obese classifications to become super obese—those with a body mass index (BMI) of 50 or more.

Some Australians weigh more than 200 kilograms and there is a prediction that super obesity will double in the next decade if there is no intervention. This group of people cannot be ignored; they have the most disturbed health, the most disturbed quality of life and often have a lot of physical and psychological issues such as diabetes, sleep apnoea, social isolation and depression.

All the signs show that Australia is following the same trend as the United States, where extreme obesity has been commonplace for a decade. Surgeon Harry Frydenberg sees up to 50 super-obese patients a year who want to access surgery such as lapbanding. Ten years ago such patients were extremely rare.

For some, surgery is far too dangerous. There have been patients whose chance of dying is just too high, they have serious cardiac or respiratory problems and anaesthetically they would just have no chance of survival. Dr Frydenberg doesn't see too many people with BMIs of 50 who are 70 years old because they just don't survive that long.

The obesity trend has escalated of late with many overweight people becoming larger. The more overweight you are, the less easy it is for you to take those steps to prevent further weight gain. The ability to recognise when your body is telling you to stop eating has been lost. The problem remains largely hidden, with many people either too embarrassed or unable to leave the house, because of the stigma attached to this disease.

Obesity is an environmental epidemic. The idea that people suffering from this disease are lazy, don't exercise or choose wrong foods is incorrect. People don't choose to be obese; our modern environment has a lot to do with it. The intensity of life has changed, computers are commonplace and people just don't move as much anymore. Vending machines are all over the place and the food we eat is riddled with fat.

Source: Adapted from 'Surgeons fear rapid rise in super obese', *Sydney Morning Herald*, 17 January 2010

Activities

PP Web Destination

1. Identify how our modern society is contributing to the increase in obesity.
2. Discuss the implications of obesity for our society.
3. Visit the Virtual Medical Centre and search for 'an introduction to obesity treatments'. Watch the video 'The Management of Obesity' and provide a summary outlining suggested problems caused by and the possible treatments for this disease.
4. Suggest two main meals for a person who is obese.

UNIT REVIEW

Looking back

1. Explain why females and vegetarians may develop anaemia.
2. Compare the symptoms, causes and long-term effects of anorexia and bulimia.
3. Outline the risk factors for coronary heart disease. What dietary advice could you provide to a person who was at risk of developing heart disease?
4. List five strategies you could adopt to avoid dental caries.
5. Some doctors suggest that one in every hundred girls in their late teens suffers from anorexia nervosa. What do you think may have led to the high incidence of this disorder among adolescents?

For you to do

6. Collect or design five recipes that are high in iron. Prepare one of these at home or at school.
7. Design an advertisement promoting healthy and safe guidelines for reducing weight.
8. Design a healthy eating pyramid for sufferers of diabetes. Using the website link, compare yours with the version on the Diabetes website.

PP Web Destination

9. Using the internet or magazines, locate some examples of weight-reducing diets. Evaluate the soundness and effectiveness of these diets.

Taking it further

10. Contact the diabetes association near you. Invite a representative to come and speak with your class about the different ways you can support a person with diabetes and their family.
11. Research some food service and catering establishments near you. What provisions do they make for customers with special dietary needs?
12. Design and prepare a PowerPoint® presentation about one of the diet-related disorders. This presentation could be used to educate members of your community. Include information about the groups of people most at risk, causes, symptoms and treatment of the disorder and strategies to stop people getting this disorder.

Lifestyle choices

8.4

Different lifestyles require different food and energy intakes to encourage and support a healthy and long life. People with very active daily lives need different foods from those who lead more sedentary lives, as they expend more energy.

Athletes

The quality and quantity of food eaten makes a great difference in the way an athlete can train and compete. Good nutrition is important to develop a strong body and energy has to be stored for endurance. Special attention to nutrition will ensure that you get the best from the activities of your choice, and maximum benefits over the long term.

Here are some important principles of sports nutrition.

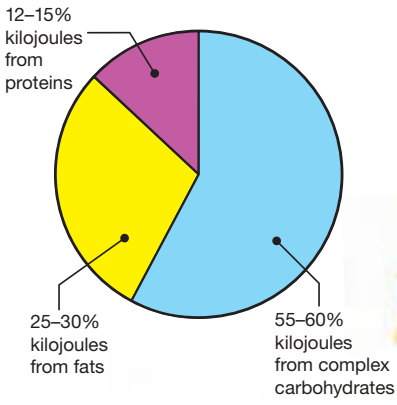
- Keep fat intake to 25–30 per cent of your kilojoules.
- Keep your muscles fuelled by eating plenty of complex carbohydrate foods, as they supply the body with sustained energy. Fifty-five to sixty per cent of the total kilojoule intake should come from complex carbohydrates such as breads, cereals and grains.
- Consume 1 gram of protein per kilogram of body weight per day—12 to 15 per cent of kilojoules should come from protein-rich food.
- Drink fluids before, during and after exercise sessions to prevent dehydration, overheating or heat stroke.
- Female athletes should make sure that their iron intake is high by including iron-rich foods in their diet.

Athletes in heavy training are at risk of iron deficiency because they lose iron through the sweat and tissue damage that occurs when the body is injured during exercise. Female athletes are particularly at risk.

An athlete's last meal before an event should be consumed three to four hours before competing and should not be too rich or heavy as they cannot perform at their peak with a stomach full of undigested food.

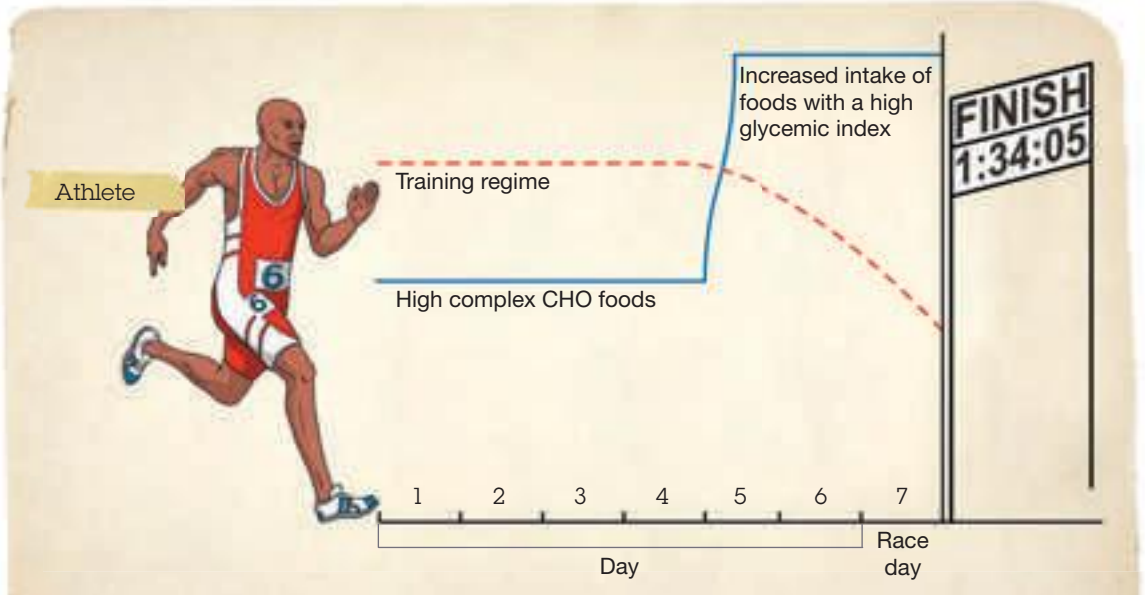
RECIPE

STEAK SANDWICH p. 340



8.4.1 Energy sources from nutrients for athletes

PP Web Destination



8.4.2 Carbohydrate consumption for endurance athletes

8.4.3 These foods are popular with vegetarians.

Web Destination

There are vegetarian eggs currently on the market. They come from hens that have not been fed any meat or fish products. These hens are kept in cages, so no unwanted meat products (such as worms) can be eaten.

Albert Einstein was not only famous for developing the theory of relativity but also for promoting the benefits of vegetarianism!

RECIPE

TOFU, MISO AND VEGETABLE SOUP p. 341

BAKED BANANAS p. 342

Vegetarians

Vegetarians are people who prefer not to eat any meat. Many vegetarians have lower rates of heart disease, diabetes and bowel cancer, and are less likely to have high blood pressure or high cholesterol. They also tend to be slimmer and have longer life expectancy than non-vegetarians. Many vegetarians choose this lifestyle for these health benefits. Other reasons for adopting a vegetarian diet include compassion for animals, environmental concerns and religious or spiritual beliefs.

There are three types of vegetarian diets:

- pure vegetarian diet or vegan diet, which consists entirely of plant foods, such as cereal products, legumes, nuts, seeds, fruits and vegetables
- lacto-vegetarian diet, which does not include meat or eggs, but does include milk and milk products
- lacto-ovo-vegetarian diet, which does not include meat, fish or poultry, but does include milk, milk products and eggs.

Vegetarians need to take special care when designing their diets to ensure that the correct proportions of all nutrients are included. Meat, which is an important source of protein and iron, can be replaced with soy beans or soy bean products, which are sources of complete protein. Lentils and beans are also sources of protein but, being incomplete, they lack some of the essential amino acids and need to be combined with other protein-rich foods to make them complete and more nutritious. This is often called the supplementary value of protein.

A vegetarian diet should be based on the following Guidelines for Healthy Vegetarian Eating.

- Eat a wide variety of foods from the vegetarian food groups.
- Eat plenty of fresh fruit and vegetables and wholegrain cereal products.
- Ensure an adequate and reliable supply of Vitamin B12.
- Consume foods rich in Vitamin C with meals to increase iron absorption.
- Ensure regular exposure to sunlight (a few hours a week) in order to maintain Vitamin D status.
- Limit your intake of foods high in saturated fats and cholesterol. Vegetarian foods in this category are eggs, full-fat dairy products, and butter and coconut products.
- Limit your intake of added salt and salty foods.
- Limit your intake of sugary foods, such as lollies and soft drinks.
- Drink plenty of water.
- Avoid excessive alcohol consumption.

Cultural backgrounds and religious beliefs

Many religious and cultural groups have special food needs.

- Seventh Day Adventists and Buddhists are vegetarian.
- Hindus do not kill any animal for food, although they do eat meat from animals that have been killed by non-Hindus.
- The Jewish religion has many strict laws associated with the foods eaten and the way in which it is obtained and prepared; for example, meat from the pig (pork, ham or bacon) is not allowed to be consumed. The meats that are permitted can only come from an animal that chews its cud and has divided hooves, for example cows,

8.4.4 Muslims choose halal food as part of their diet.

sheep, ox or goats. In very strict Jewish homes, meat and dairy products are not served at the same meal. They have to be prepared and served on separate plates using different utensils. The dishes must be cleaned in separate sinks.

- Muslims do not eat pork or drink alcohol, and follow very strict guidelines when it comes to selecting foods to include in their diet. Animals must be slaughtered by Islamic law. The word 'haram' means unlawful and the word 'halal' means lawful. Pig meat, blood, carnivorous animals and alcohol are 'haram'. Milk, honey, fish, legumes, grains, fruits and vegetables are halal. Animals such as cows, sheep, goats, deer, moose, chickens, ducks and game birds are also halal, but they must be slaughtered according to Islamic rites in order to be suitable for consumption—this is known as 'zabihah'.
- Fasting is required by some religions during particular times, for example during Ramadan among Muslims. The sick, as well as children and pregnant women, are usually excused from fasting.

8.4.5 Food preferences of major cultural and religious groups

Food	Hindus/Buddhists	Muslims	Jews
Eggs	Some*	Yes	Yes
Milk and yoghurt	Yes	Yes	Yes
Cottage/curd cheese	Yes	Yes	Yes
Chicken	Some*	Halal#	Kosher+
Mutton	Some*	Halal#	Kosher+
Beef	Hindus no, Buddhists some	Halal#	Kosher+
Pork	Some*	No	No
Fish	Some*	Yes	Yes
Butter/ghee	Yes	Yes	Yes
Margarine/ vegetable oils	Yes	Yes	Yes

* Very strict followers avoid this.
\# Halal meat must be killed, dedicated and prepared in a special way.
\+ Kosher meat for Jews requires special rituals and butchering procedures in preparation.

Hands on

Investigating halal food

Purpose

To explore how cultural backgrounds and religious beliefs impact on your dietary requirements.

Materials

five everyday food products with and without halal certification labelling attached

Steps

1. Divide into groups of four and review the definitions of 'haram' and 'halal'.
2. View the five foods presented and read each label.
3. Decide whether the food would be classified as halal or haram.
4. Copy the grid below into your notebook and list each item you have classified.

Food	Haram	Halal
1		
2		
3		
4		
5		
6		

Activities

1. Discuss the constraints Australian Muslims may face when shopping for halal foods.
2. Use the library or the internet to investigate meals that would meet the dietary needs of this particular group.
3. Review your completed worksheet and findings with the rest of the class.

logistics: planning and carrying out of any complex or large-scale activity

perishable: having a short shelf life; spoiling quickly and needing careful storage

The danger zone is between 5°C and 60°C. This is the temperature at which the bacteria in foods start to multiply and is why foods must be stored outside this danger zone.

Beginning walkers are likely to require slightly more energy than experienced walkers, as their strides are not as efficient.

Logistical considerations

The supply of food for a large number of people presents **logistical** issues. This could include preparing food for people who are bush walking or camping, in hospitals, in canteens, in nursing homes and for plane travel.

Enjoying outdoor leisure activities is something that many Australians do. When the decision is made to eat food outdoors it is important that some planning takes place. When undertaking outdoor activities it is important to remember to keep foods either very cold (refrigerator cold) or very hot (steaming hot) so that foods do not enter what is known as the danger zone (see page 3)! As soon as the temperature of **perishable** foods enters the danger zone, bacteria begin to multiply—and this can be very dangerous.

Bushwalking

There are many foods available which are suitable to take with you when you are planning to go on a bush walk. The selection really comes down to personal preferences. The basic requirement is to provide a balanced healthy diet to give you enough energy to complete the walk, depending on the distance, terrain and the load you are carrying.

Food selected for your backpack should be light in weight, high in energy value, easy and fast to prepare, appetising and not be at risk of spoiling in hot weather. With freeze-dried and dehydrated foods readily available, the bush walker has a wide range of foods to choose from that are lightweight, quick and tasty. All you really have to do is add water, wait, heat and eat!

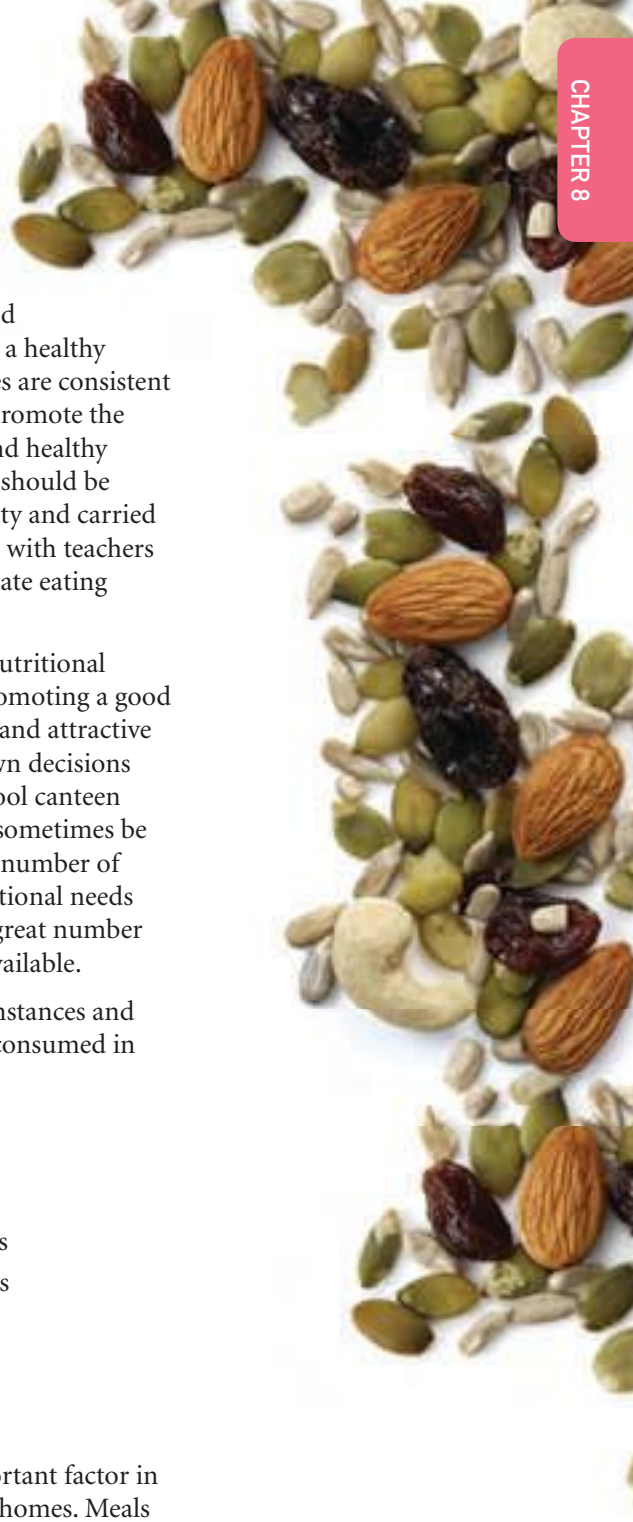
Be sure to pack some high-energy food bars or sultanas or nuts to snack on as you are walking. These foods also come in handy if you are required to spend an unexpected night in the bush. You should eat small amounts often, so that your energy is high throughout the entire walk and your body functions effectively. Drinking water constantly is also essential to keep your body hydrated and to convert the food eaten into energy.

PP Web Destination

RECIPE
CUPBOARD MUESLI BARS p. 343

8.4.6 Bushwalking and camping require lightweight, easily transported nutritious food.

8.4.7 Foods for bushwalking and camping need to be convenient and lightweight.



Camping

Meals on holidays need not be complicated, boring or lacking in nutrition if you plan and pack with a little imagination.

Perishable foods are generally unsuitable for camping unless you have access to a refrigerator. It is best to use dry, UHT and canned products such as:

- pasta, rice and instant noodles
- long-life fruit juice, milk, cream and custard
- bottled mustard and pasta sauce
- canned fruit in natural juice, or meats such as tuna, salmon and crab
- dried peas, beans, herbs, soups and fruits.

Hospitals

Apart from special diets advised by doctors, in general, hospital food should be light in fat, presented attractively, small in portion and offered frequently. Dietary restrictions may make it impossible for some patients to eat hospital food. For instance, unless the hospital caters for special dietary arrangements, it may be logistically impossible for kitchens to provide halal or kosher food, and patients may have to organise the delivery of their own meals.

Canteens

The school environment has a special role to play in the education, health and well-being of students and the school communities that they serve. Given the current trend towards buying more meals away from home and the increasingly busy lifestyle of Australian parents, school children are purchasing more of their daily food intake from school.

There are many different food environments in a school. In a healthy school the nutrition messages are consistent across all food settings and promote the benefits of a balanced diet and healthy food choices. Healthy eating should be modelled at every opportunity and carried through into the classrooms, with teachers also demonstrating appropriate eating behaviours.

Schools can help to reduce nutritional problems by offering and promoting a good selection of nutritious, tasty and attractive foods. Schools make their own decisions about what to sell in the school canteen and other settings. This can sometimes be difficult because of the large number of students, the variety of nutritional needs that have to be met and the great number and type of food products available.

The different types of circumstances and settings which food may be consumed in schools are:

- canteens and tuckshops
- lunchboxes
- vending machines
- incursions and excursions
- school sponsorship events
- healthy food fundraising
- classroom rewards.

Nursing homes

Meals are an extremely important factor in the quality of life in nursing homes. Meals satisfy physical requirements as well as psychological, emotional and social needs. Care needs to be taken when designing and preparing food for residents of nursing homes.

Menu plans should take into consideration the individual preferences and special dietary needs of all residents.

School canteens are the largest takeaway food operation in Australia in terms of numbers and volume—bigger than McDonald's, Pizza Hut and small takeaway food outlets combined!

FOOD IN FOCUS

Clermont Nursing Home

Clermont Nursing Home takes pride in the quality of food it serves. Each day a menu is handed out and the residents have a choice of quality foods, three meals a day plus morning and afternoon tea. Extra fruit, tea and coffee are also available to the residents. A consultant dietitian reviews the menus and the meals regularly, especially when a new resident arrives at the nursing home.

Activities

PP Web Destination

1 Using the website link, visit Clermont Nursing Home website and click on the sample menu. Select one day's food for an elderly woman with weak bones.
2 The consultant dietitian reviews this menu regularly. Suggest appropriate changes that could be made to make it more appealing.
3 Identify five factors that the consultant dietitian would need to be aware of when reviewing the menu and residents' meals.

8.4.8 Clermont nursing home

RECIPE

PIZZA SUB PRODUCTION LINE p. 344

Airline food

There are many constraints in the provision of food to airline passengers. However, airline food has improved dramatically over the years, with many airlines now treating their customers to a broad selection of international and regional foods in menus that fuse current trends with traditional flavours. Most airlines also cater for special dietary, medical, cultural or religious requirements, with the selection of special meal options varying depending on the airline. Qantas, for example, offers diabetic, non-lactose, gluten-free, lacto-ovo-vegetarian, Hindu, halal and kosher alternatives if pre-ordered.

Menus are constantly being improved, particularly on long flights, and some airlines even enlist top chefs to help develop their menus. Qantas is one example of this—they have been working closely with leading Australian restaurateur Neil Perry of Rockpool to design a unique restaurant-style dining experience with the opportunity to indulge in an eight-course tasting menu, delicious canapés, light meals or even gourmet toasted sandwiches on selected services.

FOOD IN FOCUS

Flying high

The sky's the limit when it comes to preparing meals for airline passengers. Head chef Janell Millington is putting the finishing touches to a plate of baby barramundi served with saffron rice and blanched snow peas.

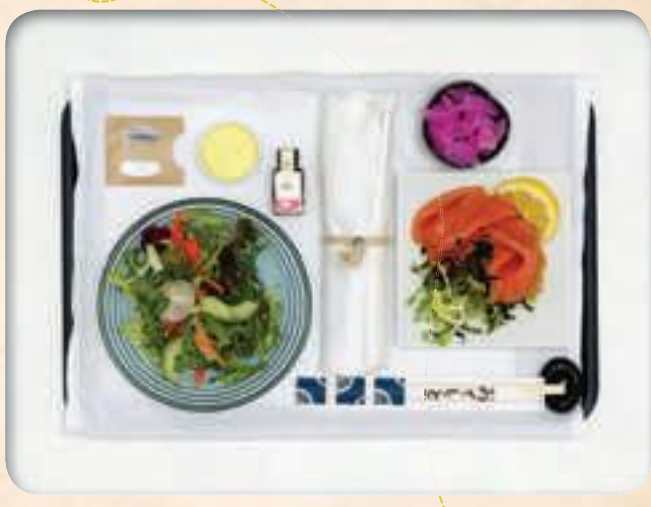
She has worked in some of Australia's leading hotels and the dish she's serving now could easily grace a table at any smart restaurant around town but in fact it is a dish being served to customers on board Gulf Air.

Millington, 32, is now based in Bahrain. She is one of Gulf Air's new corps of Sky Chefs—100 restaurant-trained experts from 23 nations who do their cooking 9000 metres in the air, catering for the whims of Gulf's first-class passengers.

Millington and her fellow Sky Chefs are the most dramatic sign that airline food is undergoing a revolution. To some, the future looks exciting—a world where we'll be able to order nutritious meals of our choice online a few hours before take-off.

Millington undertakes her work in a massive, high-tech food processing centre in Mascot, a cathedral of stainless steel and cold stores—the Sydney headquarters of Caterair, one of the three big airline catering companies who supply meals to many airlines. Most airline passengers don't realise the food served by competing airlines is often prepared in the same kitchens.

As Millington walks through Caterair's enormous open-plan kitchens, an army of white-coated, hair-netted workers assemble meals for competing airlines. Each one has a coloured photo of what their particular finished meal should look like, issued by the airline's chefs at head office.



8.4.9 An example of airline food

There's no room for improvisation. Each airline's menu is designed and refined according to the airline's specifications. Even if the kitchen is communal, the food itself is prepared precisely as the client airline demands.

There is also a segregated halal enclosure, a self-contained commercial kitchen where the food for Gulf Air and Malaysia Airlines is prepared according to Islamic dietary requirements.

Airline food has improved immeasurably in the past decade but Millington says few passengers realise the difficulties facing airline caterers.

First, your palate changes at 30 000 feet [9000 metres]. Things don't taste the same as they do on the ground. So the blandness people associate with airline food has, often, more to do with their own reduced sense of taste than the food itself.

Second, economy food is usually served in plastic containers with disposable cutlery to reduce weight, fuel costs and air fares. Try eating food at your favourite restaurant from a plastic tray and see if it tastes the same.

Continued >

Third, airline food has to appeal to the majority. Though you might like your food highly spiced, many passengers won't. Most Western airlines avoid using garlic in their food, for example, because the cumulative effect in the cabin of 200 people would be off-putting, to say the least. Asian airlines, however, have fewer problems serving spicy food because pungent aromas are more culturally acceptable.

The big issue is hygiene. Certain ingredients are automatically ruled out: oysters and any raw fish or meat—it has to be seared before it is allowed on board. Raw bean sprouts, peanuts or peanut oil are considered high-risk because so many passengers are allergic to them.

Finally, airline catering is 90 per cent logistics and only 10 per cent about the food. Apart from the huge volume of meals which have to be produced each day, the penalties for delaying an aircraft, even for a few minutes, are phenomenal.

Traditionally, the answer to this logistical nightmare has been a process called cook-chill. Meals are cooked on the ground a few hours before a plane's departure, assembled in plastic or foil dishes, refrigerated for a minimum of three hours at five degrees, loaded onto the planes, then put into convection ovens by the cabin crew and served. The result is all the flavours move together and become muted.

However, two things have changed recently. Aircraft ovens have improved with computerisation and more airlines are switching to the new generation of quick-frozen meals for their economy cabins. Better ovens have had a big impact, particularly in economy. Steamer oven technology has been introduced, which allows food to be cooked under dry heat or wet heat. It makes sure certain food retains moisture and doesn't dry out like it did in the past.

In Qantas, under head chef Perry's guidance, fewer Qantas meals in first and business are cooked on the ground, with cabin crew now cooking the majority of meals from a fresh base, which delivers a much better result than reheating food. Vegetables are steamed fresh on board while fish is grilled. The food is no longer pre-plated by the on-ground caterers but plated in the galley, restaurant-style. Unlike Gulf Air, Qantas doesn't employ in-flight chefs, as the cabin crew are competent and confident about preparing and plating food in flight.

Source: Adapted from 'Flying high', *Sydney Morning Herald*, 18 February 2004

Activities

1. Identify the constraints of preparing meals 9000 metres in the air compared to on land.
2. Explain why it is important for each assembly worker to be issued with a coloured photo of what their particular finished meal should look like.
3. Research Islamic dietary requirements and justify why a self-contained kitchen is required for food preparation.
4. Explain the process of cook-chill and what has replaced it.
5. Predict what the future of airline food might be?

Hands on

Catering for special food needs

Using the website link, visit the Nutrition Australia website. This website has links to private organisations and government bodies who provide support for all Australians to enjoy a healthy, balanced diet.

Choose a special food need that interests you.

1. Locate the groups and networks within Australia that support individuals.
2. Investigate how each provides support for individuals and families.
3. Contact each support network and ask them to send you some promotional material about their products and/or services. Display all brochures on a class notice board.
4. Imagine you were holding a special morning tea for the group you have researched. Plan the menu. Choose one dish, prepare it and share it with the rest of your class.

UNIT REVIEW

Looking back

1. Outline the role each major nutrient plays in sports performance.
2. When many athletes cease to participate in sports they tend to gain weight. Why do you think this happens?
3. Why is a vegetarian diet beneficial to health?
4. Identify three meals that combine protein sources to provide a complete protein.
5. Name and describe the different types of vegetarians. Explain any dietary difficulties that each may have.
6. Identify the factors that you would need to consider when developing food menus for a nursing home.
7. Identify the food safety issues that need to be considered when preparing and transporting food for bushwalking or camping.
8. Suggest four foods suitable to take on a camping holiday. Provide a reason for each choice.
9. Investigate the foods that are available from your school canteen. Suggest how the foods available could be modified to be more nutritious.

For you to do

10. Design a meal suitable for an athlete prior to a marathon run. Prepare this meal in class.
11. Explain why complex carbohydrates are important in an athlete's diet. List ten examples of foods that contain complex carbohydrates.
12. Visit your local supermarket to investigate products targeted specifically at athletes.
13. Look through a variety of magazines dedicated to food, for example *Australian Table*, *Australian Good Taste* or *Super Food Ideas* and see how many recipes you can find that include grains, beans, peas, edible seeds or nuts. Which type of vegetarian diet does the recipe represent?
14. Design an entrée, main course and dessert for a dinner party that vegetarians will be attending.
15. List the nutrients that may be lacking in a vegan diet unless it is carefully planned.
16. Outline how your cultural or religious beliefs affect your food needs.
17. Design a poster promoting water consumption when bushwalking and camping.
18. Suggest some interesting sandwich fillings that can be easily and safely transported in a backpack.
19. Think of a healthy food you would like to see sold at your school canteen. How would you go about promoting this food? Put your ideas into practice (with the assistance of your school canteen manager).

Taking it further

20. Invite a sportsperson to your class to talk about their diet and training.
21. Consumption of sweets or sweet drinks in the hour before competing in sports is to be avoided. Use your library or the internet to research why this is so.
22. Predict the reaction of your family if you said that you wanted to become a vegetarian. If you are already a vegetarian, you may like to share with your class what your family's reaction was to your choice.
23. Investigate the social, religious and ethical reasons people have for being vegetarian.
24. Visit your local supermarket to compile a list of the range of convenience products that are designed to capture the growing vegetarian market.

8.5 Support networks

8.5.1 Foods with the heart tick

Foods with the National Heart Foundation approval tick must meet strict levels of kilojoules. As sugar provides kilojoules, this limits the amount of sugar that a product may contain.

You could eat two sandwiches for around the same number of kilojoules as the average meat pie, and still get only half the fat. A potato roasted in fat will have three times the kilojoule content as the sandwiches. A potato made into chips will have nearly five times the kilojoules!

Most Australians eat only about two-thirds of the fibre they need each day.

RECIPE

TRADITIONAL SAUSAGE ROLLS p. 345

REVAMPED SAUSAGE ROLLS p. 346

There are many private organisations and government agencies that provide support for people with special dietary needs. Support, including information, is provided for:

- people who are on special diets for heart disease or cancer
- vegetarians
- elite sportspeople
- mothers who are breast-feeding
- people who have food allergies
- people who have diabetes
- people who have coeliac disease.

Low-kilojoule foods

You eat food to fuel your body with energy and for growth and repair. The foods you eat provide kilojoules for the body. Carbohydrate, protein and fat provide the body with kilojoules. Fats and alcohol are by far the most energy-dense foods and should only be consumed in moderation, particularly if you are overweight or obese.

During the past twenty-five years there has been a growing interest in low-kilojoule foods and beverages.

Low salt

As a nation we tend to consume twice the recommended dietary intake for sodium. The salt in our diet comes not only from salt that we sprinkle on our food but also from processed foods. Salt consumption in large quantities has been linked to hypertension, high blood pressure, heart disease and stroke. It is possible to wean yourself off salt and begin to taste the natural flavours of food, rather than the salt.

Low fat

Fats are vital for good nutrition; they act as a carrier for the fat-soluble Vitamins A, D, E and K, and they provide energy and the essential fatty acids needed for life and growth. Fat only becomes bad for you when you eat too much of it.

The key is to minimise the amount of fat consumed daily. There are now an increasing number of low-fat products available at supermarkets. Low-fat meals are the key to better health, as a diet low in fat and rich in fruit and vegetables, dairy products and wholegrains is recommended to avoid diet-related disorders.

High fibre

It is important to include dietary fibre in your diet to help maintain regularity and reduce the risk of many illnesses. Foods that are high in fibre are high-fibre breakfast cereals, wholegrain and multigrain breads, fruit and vegetables.

High protein

Protein is important for the growth of body cells and makes up virtually every part of the body. Children, adolescents, pregnant and breastfeeding women require more protein in relation to their body weight than adults. Accident and burn victims also require extra protein for rebuilding of damaged body tissue.

Planning considerations

Planning considerations for safe and nutritious foods for special needs include:

- Menus: special dietary needs may affect the menu, the ingredients needed and the overall health of the diners.
- Number of courses: the time of the day and place at which the meal will be consumed will affect the overall planning of a meal.
- Customer: the age, gender and preferences of the customer.
- Cost: it is important to be aware of your available budget.
- Time available: the time available for shopping, meal preparation and consumption affects the choice of foods.

Practitioner focus

Kathy Usic—nutritionist and accredited practising dietitian

Kathy Usic is an accredited practising dietitian with over twenty-five years experience in nutrition marketing and public health. She holds a Bachelor of Education and Master of Nutrition and Dietetics, and is currently a Nutrition Manager in George Weston Foods' Baking Division.

Prior to joining George Weston Foods, Kathy held senior positions at several large companies, including Campbell Arnott's and Goodman Fielder. She has lectured in Nutrition and Health Studies at the University of Sydney, and also worked at the NSW School Canteen Association as a nutritionist and executive officer—where she was responsible for developing and implementing national nutritional guidelines for school canteens.

Prior to this, Kathy worked as a paediatric dietitian at the Children's Hospital at Westmead and Camperdown. In 1989, she joined the National Heart Foundation as a project officer where she helped implement various public health nutrition programs—including the successful Tick Food Program.

Before joining the Heart Foundation and undertaking further study in dietetics, Kathy worked as a secondary and tertiary teacher in Victoria and NSW, teaching physical education and home economics. Combining her interest in nutrition and good food, Kathy took a break from teaching and opened up a café known as Pelicans Fine Foods in Balmain in 1988. Kathy has also been the nutrition editor of *Practical Parenting* and a food writer for Time Inc publications (now *Pacific Magazine*).

A mother of four children, Kathy understands the demands of today's busy world and the complexity of food issues. She is a passionate nutrition marketer and believes that credible nutrition messages can help strike the right balance between good food and healthy lifestyle.

An accredited practising dietitian (APD) can provide you with personalised advice to give you the confidence to eat in a way that is best for you. APDs are university-qualified experts in nutrition and dietetics and are committed to the Dietitians Association of Australia's (DAA) Code of Professional Conduct, continuing professional development and providing quality services.

Accredited nutritionists (AN) are tertiary-qualified nutrition professionals who have expertise in a range of nutrition services, including public health nutrition, community health and tertiary education related to nutrition, but are different from APDs as they are not qualified to provide individual dietary counselling therapy and medical nutrition therapy. APDs can choose to use the APD and/or AN credential.

Source: Adapted from information on the Burgen website

8.5.2 Kathy Usic

Questions

1. Outline the difference between a dietitian and a nutritionist.
2. Investigate the university courses available in your state or territory to become a dietician.
3. List ten qualities required by Kathy, to work in this industry.
4. Suggest the work Kathy would have been required to undertake when working on the 'national nutritional guidelines for school canteens' project.
5. Design a business card that highlights Kathy's role as an accredited practising dietitian.
6. Many people are referred to dietitians for nutritional advice. Explain why this is important for people at different stages of the life cycle.

UNIT REVIEW

Looking back

1 Identify a range of ways that people can reduce their intake of kilojoules, salt and fat.

2 Identify a range of ways that people could increase their intake of fibre and protein.

3 What considerations need to be taken into account to ensure food is safe to eat?

4 How will the location of the meal affect the type of food prepared?

5 Using examples, explain how the time available for shopping and meal preparation will affect choice of foods and cooking methods.

For you to do

6 Make a list of all the salty foods that you eat on (a) a weekday and (b) over the weekend. How could you cut down your salt intake?

7 Visit a supermarket or look in your food cupboards and find ten foods that have 'salt' written on the label and ten foods that have 'low-salt' written on the label.

8 Purchase two packets of chips, one low-salt and one not. Conduct a taste test and write a short report on your findings.

9 Herbs and spices can be used as alternatives to salt for enhancing food flavours. Develop a list of any other flavours you think of that can be added to food besides salt, herbs or spices.

10 A number of individuals have special dietary needs and require particular foods. Complete the table below by providing a description, the dietary needs and examples of suitable foods for each group.

11 You have offered to cook a meal for a small group of friends that consists of a vegetarian, a person allergic to seafood and someone who is dieting. Design a two-course meal to meet the needs of all of your guests, including yourself. Justify your food choices. Provide recipes for all dishes.

Group	Description	Dietary needs	Suitable foods
Coeliac			
Vegan			
Lacto-vegetarian			
Muslim (religious)			

Taking it further

12 Identify eight salt-reduced food products that are currently on the market. Outline the salt content in each product and compare these to products that are not salt reduced.

13 Collect food labels from a range of food and beverage products. Read the nutrition information panel on each label and compare the level of kilojoules, sodium, fibre, protein and fat in each product. Display your findings in a table and analyse the results.

14 Research the amount of fat in common takeaway foods, for example hamburger, battered fish fillet, chicken nuggets.

15 Many traditional recipes, even though they may include ingredients that are not suitable for specific dietary requirements, can be altered to suit the diet of individuals with special needs.

- **a** Select a special food need that you have investigated in this chapter and choose a recipe for a meal or snack food.
- **b** Alter the ingredients according to the special food need you have chosen by either removing an ingredient, substituting a similar ingredient or cutting down on the quantity.
- **c** Prepare this food and evaluate it in terms of its taste, appearance and nutritive value.

RECIPE

SPAGHETTI AND PROSCIUTTO
p. 347

Chapter review

Looking back

1 Brainstorm the dietary restrictions some people may have.

2 As a class, discuss the link between ageing, nutrition and health. List some important guidelines the aged should follow to maintain an active, healthy lifestyle.

3 Explain how the stages of the life cycle affect dietary needs.

4 Give five examples of when a person may require a modified diet to meet a special need.

5 Describe the three types of vegetarian diets.

6 Identify foods that could be consumed as part of a daily diet of a person intolerant to gluten.

7 Suggest five eating habits that you and your family could change to improve your health and reduce the risk of coronary heart disease.

8 Discuss the implications of a diet high in sodium or fat on the health of our society.

9 Identify foods that could be added to recipes to replace salt.

10 Identify the logistical issues that people need to consider when preparing and selecting foods. Share your results with your class and present your combined efforts on the whiteboard or smartboard.

11 Discuss how dietary modification can assist in managing people's special dietary needs.

12 Construct a table that summarises the circumstances that may lead to an individual having special needs.

13 Describe how a person's health status or lifestyle affects their food choices. Provide examples of when this might occur.

14 Explain how educating people with special needs in appropriate food selection influences the health system in your state or territory.

For you to do

PP Web Destination

15 Design a PowerPoint® presentation naming the different stages of the life cycle and outlining specific age groups and nutritional requirements for each.

16 Design a humorous, informative cartoon strip about one stage of the life cycle.

17 Low-fat diets are not recommended for young children. Choose five products marketed to children and investigate the nutritional content of each. Rate them according to their suitability for a 3-year-old.

18 Investigate the dietary requirements of one religion and discuss the implications for shopping.

19 Develop a one-day eating plan for a vegetarian of your choice. Give reasons for the foods selected.

20 Design and produce a brochure to promote one high-fibre product available at your local supermarket. Explain the benefits of purchasing and consuming this product.

21 Select one group with a diet-related special need. Use the internet to define the disease, its symptoms, how it can be prevented and possible treatment options. Present this information as a poster. When completed display it in your classroom.

22 Using the website link, visit Teens Health website and read the article titled 'A Guide to Eating for Sports'. Outline why it is important to eat the correct foods and quantities if you want to reach peak performance. As a class debate the following topic: 'Sports supplements really work'.

23 Conduct a classroom forum to discuss the planning considerations for safe and nutritious foods for special needs. Consider whether it is more time-consuming and expensive to eat nutritious foods or processed, fast foods.

24 Create a mind map to summarise this chapter. Use a highlighter pen to identify one new concept you have learned that could lead to changes in the choices you make when shopping for food products.

Chapter review

Taking it further

25 Plan a weeks diet for a volunteer participant in your class. Take into consideration their health and physical status, their physical activity level and any special needs relating to food.

26 Conduct a search in your local telephone directory for restaurants that prepare and serve meals catering for people with special dietary requirements. Arrange to visit this restaurant to interview the chef and sample the food.

- Make a list of ten questions to ask the chef during your interview.
- Prepare an oral report of your experience and predict any future trends in 'special need' restaurants. Support your predictions with specific reasons and examples.
- Share your experiences with your class and compare the different eating experiences you encountered.

27 Design and prepare a vegetable-based main meal. Calculate the cost of this meal and compare it to the cost of a meal that includes meat products. List the advantages and disadvantages of preparing and eating a meal that is vegetable-based rather than meat-based.

28 Form small teams and consider one diet-related disorder. Prepare an interactive presentation that highlights practical ways to educate people in your local area suffering from this disorder.

29 Design a menu for one week to show a 25-year-old male how to reduce his chances of developing diabetes.

30 Using the website link, visit the Heart Foundation website and complete the following activities.

- Investigate the importance of foods gaining the Heart Foundation Approval Tick.
- Research what the Tick means, how companies earn the Tick and how the Tick standards are maintained.
- Download a full list of foods approved to use the Tick in the supermarket. Take this list to your local supermarket and highlight how many products you could easily locate from the list.
- Use the website's recipe finder and design a day's menu that meets the needs of following diets: low-kilojoule diet, high-fibre diet, low-salt diet, high-protein diet, low-fat diet.

31 Invite a local professional athlete into your classroom to discuss how their food choices affect their athletic performance. Draft a series of questions before the visit so that you are prepared.

Chapter 9

Great expectations

Focus area: Food for special occasions

Food plays an important role at special occasions. This chapter investigates the significance and reasons for celebrating, ways to prepare foods for small- and large-scale catering occasions, what to consider when planning food for special events, and the importance of presentation and display of foods. You will follow a workflow plan and use correct food-handling skills to organise and prepare foods for a variety of fun and interesting events.

Chapter outcomes

In this chapter you will learn about:

- the role and significance of food around the world throughout history
- reasons for celebrating
- production and preparation of foods
- menu planning considerations
- the importance of presentation, including garnishing and decorating techniques.

In this chapter you will learn to:

- outline the significance of food throughout history
- explore a variety of special occasions
- design, plan and prepare food for special occasions
- devise a workflow plan to be used when conducting a practical activity
- demonstrate appropriate food-handling and presentation skills.

- outline the significance of food throughout history
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- demonstrate appropriate food-handling and presentation skills.

9.1

Role and significance of food

The expression 'to break bread' means to show hospitality and symbolise peaceful relations between people.

staple: a basic food that a population eats on a regular basis and in large quantities

leavened bread: bread that has risen because of the addition of a leavening agent such as yeast

leavened bread: bread that has risen because of the addition of a leavening agent such as yeast

Web Destination

Foods around the world

Food has always been and will always be important. It plays an essential part in people's lives, for without it we would die.

Food also has an important social role. For example:

- at a children's birthday party, you are likely to find sweets, chips, soft drinks and most importantly, a birthday cake
- at a Christmas celebration you could be served turkey, ham and plum pudding with custard.

People have always met together to relax, talk and share common experiences and beliefs. They like to share food at the same time because it makes the occasion even more enjoyable. It shows great hospitality and friendship when one person shares food with another.

Hands on

Sensory evaluation of bread

Purpose

This activity allows you to familiarise yourself with different types of breads. While you taste each sample, make notes on what you taste. How is each type of bread similar or different? Identify any unique features for each type of bread. Think about the cultural influences.

Materials

one portion of the following breads: naan, bagel, croissant, crumpet, lavash, focaccia, pitta, damper

Steps

1. Sample each of the breads listed.
2. Make brief notes about each bread. Discuss your findings or opinions with another student or as a class.
3. Complete the 'Hands on Bread' worksheet and paste it into your notebook.

Activities

1. Which breads were similar? Explain.
2. Select one bread and explain how it is served and what it is served with.
3. Categorise each bread as either leavened or unleavened.
4. Select one type of bread and explain in 100–150 words how you think it reflects the culture or history of the country from which it originated.

Tip
Some bread, for example crumpets, may require cooking or heating before serving. You may wish to serve these breads with butter or another plain spread that will not alter the taste.

FOOD IN FOCUS

Bread all over the world

Bread is broken and shared during special celebrations in many countries. Many types of bread have great historical and religious meaning. Bread comes in different forms, is a **staple** of many people's diets, provides good nutrition, is relatively cheap and may be eaten with most meals.

The type or form of bread eaten reflects the customs, culture, religious beliefs, climate and history of people.

- Australians ate damper in the early days of European settlement because the early settlers did not have yeast to help the bread to rise.
- Indian people eat naan bread because it is soft and absorbent and when eaten with curries helps to soak up the liquid.

Bread has been written about throughout history. Look at this brief timeline.

Bread may:

- remind people of a religious occasion. For example, matzo bread helps Jewish people to recall when their ancestors fled from slavery in Egypt—they had to leave quickly and could not wait for the bread to rise
- be eaten to mark a special event or season. For example, Italians like to eat rich, sweet and fruity panettone during the Christmas period
- be shared among family and friends as a symbol of love and affection. For example, Jesus Christ broke bread and shared it with his disciples to symbolise the sacrifice of his life.

Activities

1. What is unleavened bread?
2. Why were hot cross buns served only at special occasions?
3. Name two unleavened breads.
4. Imagine that bread suddenly became unavailable or very expensive in Australia. Describe what might happen. What would people eat instead?

9.1.1 This is how Indian naan bread is traditionally made.

9.1.2 Breads from different countries of the world

8000 BCE **Unleavened bread** was made in Egypt because raising agents, such as yeast, had not been discovered. It became an important part of the Egyptian diet and was similar to flat breads eaten today, such as Mexican tortillas.

150 BCE Romans discovered how to make good-quality bread. The best bread was sold at a high price to the richer social classes, while the poorer quality bread was given to the poor.

1st century CE Greeks began to make bread from barley and wheat that was flavoured with milk, honey and seeds. They also made flat, baked bread that was similar to the pizza eaten today.

1600s English people served hot cross buns at special occasions to display their wealth. The spices needed to make the buns were very rare and very expensive, so the buns were considered very special.

8000 BCE — 150 BCE — 1st Century — 1600s

3000 BCE — 40 BCE — 1202 CE

3000 BCE Ancient Egyptians discovered how to make **leavened** bread. This bread was considered to be very special, so was offered to the god Osiris (the god of grain) in ceremonies. Bread became so valuable that it was sometimes used instead of money.

40 BCE Roman authorities saw that bread was such an important part of the people's diet that they allowed bread to be given without charge to adult males.

1202 CE King John in England introduced laws that governed the price of bread. People had to be able to afford it in order to survive.

UNIT REVIEW

Looking back

1. List foods that are commonly served at childrens birthday parties.
2. List four different types of bread.
3. Why do people like to meet together and share food?

For you to do

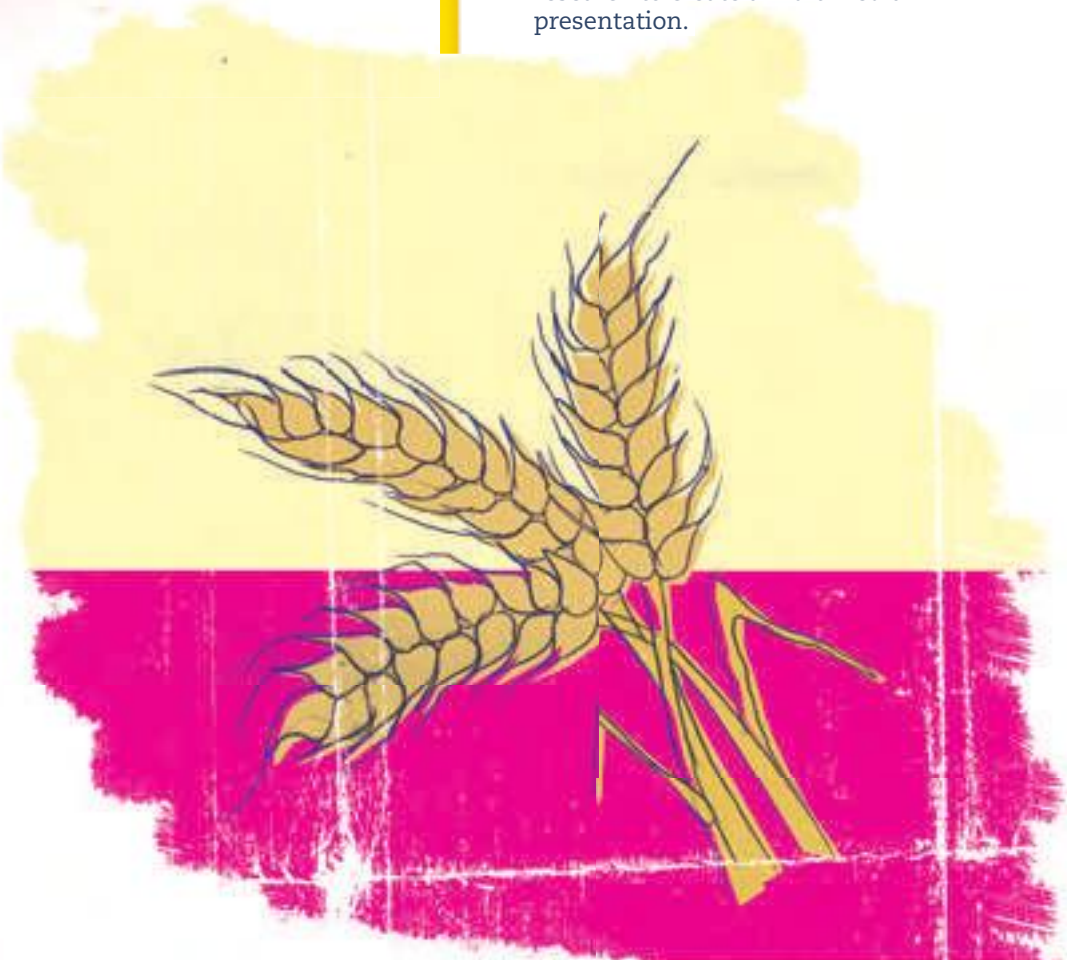
4. Design a menu of foods that could be served at a Christmas celebration.
5. Design your own recipe for an interesting type of bread. List the ingredients that you would use.
6. Design and make a recipe card for your bread.

Taking it further

7. Research how one type of bread is used in a religious ceremony or celebration. Use a KWL chart to organise your research. Use your research to create a multimedia presentation.

RECIPE

DOUBLE CORN BREAD p. 348



Reasons for celebration

9.2

There are many reasons why people celebrate special occasions. Think about the celebrations in which your families regularly participate. What are the reasons for these events? Why do you celebrate them?

Social reasons

Social celebrations are those that commonly involve friends and relatives. They may be planned events, like a school dinner for Year 10 parents, or they may be celebrations that are organised for no particular reason, such as morning tea for old friends.

Social celebrations can be either formal or informal. In Australia they are often informal, or casual—think of the popularity of barbecues, picnics and buffets.

Certain social events are linked with particular foods that are commonly served and eaten. For example:

- foods served at a barbecue or picnic often include steak, sausages, barbecue chicken, bread rolls, salads, cheeses and fruits
- foods and beverages served at a cocktail party often include **canapés**, **crudités**, crackers, cheese and fruit, wine, cocktails and champagne
- foods and beverages served at a formal dinner often include soup, terrine, seafood cocktails, roast meat and vegetables, cheesecake, alcohol and coffee
- foods and beverages served at a morning or afternoon tea often include tea, coffee, scones, muffins, cakes and tarts
- foods and beverages served at a buffet often include cold meats, salads, pasta, potato bakes, puddings, soft serve ice-creams and toppings.

Cultural reasons

Culture is understood as the values, knowledge, beliefs, behaviours, dress and foods that are passed on through each generation of a particular society. We usually gain an understanding of our culture from our parents and those around us. Cultural celebrations often have historical foundations. For example:

- in Australia many people exchange gifts at Christmas and give chocolate eggs at Easter, even though they may not necessarily be Christian
- many Australians eat a cold Christmas dinner while others still follow the English cultural tradition and consume a hot turkey roast.

There are many different types of cultural celebrations in multicultural Australia, most of which involve the preparation of special foods.

PP Web Destination

Australia Day

This celebration is held on 26 January and signifies the founding of a modern Australian nation and culture. Australia Day marks the landing of Captain Arthur Phillip at Botany Bay in 1788 and the beginning of European settlement. People celebrate with flag-raising ceremonies, fireworks, regattas and barbecues. Foods eaten on this day include green jellies, red cordial, lamingtons, meat pies, Vegemite sandwiches and pavlova.

For Indigenous Australians, Australia Day can be a day of sadness and mourning, recalling a time when their traditional lifestyle was destroyed and diseases, death, foreign laws and restrictions were introduced.

canapé: small piece of toast spread with a variety of toppings and served as an appetiser

crudité: raw vegetable cut into bite-sized strips and served with a dip

9.2.1 Eating out of doors has become very popular.

9.2.2 Chinatown during Chinese New Year celebrations

Aboriginal initiation ceremonies

In most traditional Aboriginal communities, boys who are 11–13-years-old are initiated into manhood in a series of ceremonies that teach them their traditional songs and dances and the Dreaming. Boys leave behind their world of freedom and immaturity and emerge as responsible adults who are educated in Aboriginal history and culture. People bring gifts to the ceremonies and the finest traditional foods are prepared. Traditional dance, dress and face painting also feature in this special event.

Chinese New Year and the Lantern Festival

This event is celebrated by the Chinese community in January and February when the moon is in a certain position. Families and friends get together to celebrate the New Year by wishing each other good luck and good fortune. Foods eaten during Chinese New Year include pork dumplings, pork crackling, roast suckling pig, sweets, lychees and Chinese tea.

After the New Year, the Lantern Festival begins. Paper lanterns are hung in houses and along streets. Children parade through the streets with paper lanterns and then return home for a feast of special foods such as fruit, sweets, mooncakes and ricecakes.

FOOD IN FOCUS

Japanese tea ceremony

The Japanese Tea Ceremony (*cha-no-yu*, *chado* or *sado*) is a traditional Japanese activity that was influenced by Zen Buddhism. A green powdered tea is ceremonially prepared and served by a skilled host.

Cha-no-yu means 'hot water for tea' and refers to a single tea ceremony, while *sado* or *chado* means 'the way of tea' and refers to the study of the tea ceremony. The host must be experienced in types of tea, tea-making techniques, the kimono, calligraphy, flower arranging, ceramics and incense, to name just a few.

It is thought that the drinking of tea in Japan commenced in the ninth century. A Buddhist monk returned to Japan from a visit to China in 815 and soon after, a type of simmered tea was served to the emperor. In 816, tea plantations were established in the Kinki region of Japan.

In the twelfth century powdered green tea was introduced and by the thirteenth century, Samurai warriors had begun preparing and drinking this powdered green tea. It is thought that the foundations of the tea ceremony were established at this stage.

The Japanese tea ceremony evolved and transformed over time and by the sixteenth century, tea drinking had spread to all levels of Japanese society. Today tea schools, community centre classes and private homes and institutions offer classes on traditional tea ceremony technique and know-how.

Activities

1. When was tea thought to have been introduced into Japan?
2. Define the Japanese word *cha-no-yu*.
3. Investigate and list equipment required to conduct a tea ceremony. Hint— use the search word 'chadogu'.
4. Use a computer program such as OneNote® to make a summary of the usual sequence of a traditional tea ceremony.

9.2.3 A kimono is traditionally worn when serving tea at a tea ceremony.

Religious reasons

Religions celebrate their beliefs at different times of the year, and even the same religious event may vary from country to country in the food that is eaten and the rituals that are performed.

People may eat special foods on certain religious days to remind themselves of their god or gods, or their beliefs. People may go without food because it allows them to think more about their god or gods and others that may be suffering or have suffered in the past.

Christianity

Christmas

Christmas marks the birth of Jesus Christ, and Christmas Eve or Christmas Day services are held to celebrate the occasion. Christians believe that three wise men arrived at Jesus' birthplace with gifts for the new king. This tradition remains today when people exchange gifts during the Christmas period. People set up Christmas trees and send cards to help celebrate the occasion. Foods commonly eaten include roast turkey, gravy and vegetables, shortbread, mince pies, plum pudding and custard. In Australia, a cold Christmas lunch or dinner—such as cold meats, seafood, trifle and salad—is often served because of the warm climate.

Easter

Easter marks the death and resurrection of Jesus Christ and Lent is the period of forty days before Easter. It is a time of preparation and repentance. Some Christians deny themselves something during this period, particularly luxuries or pleasurable foods. Meat is not permitted on Fridays during the Lent period, but fish is. Christians celebrate Easter Sunday, when they believe that Jesus rose from the dead. Foods commonly eaten during the Easter celebration include hot cross buns, pancakes and Easter eggs. Eggs symbolise the rebirth and new life that is associated with Jesus' death and hot cross buns remind people that Jesus died on the cross.

Judaism

The Sabbath

Jewish people believe that when God ma the universe, he left one day for rest. The Sabbath period begins at sunset on Frida and ends at sunset on Saturday. On the Saturday evening there is a special family meal. All foods are prepared beforehand to allow followers to rest on the Sabbath day. Wine that has been blessed is served, and sweet bread called 'challah' is made to celebrate the occasion. Jewish food is prepared following rules known as 'koshe Animals must be killed in a special way, meat and milk products cannot be eaten at the same meal, and shellfish and rabbit and pork products of any kind are not allowed.

Passover

Passover lasts for eight days and marks the time when God freed the Israelites from slavery in Egypt. It is a time of rebirth and renewal. Before Passover begins, special foods such as dumplings, pancakes, fruit and nut sweets and a flat, unleavened bread called matzo, are prepared.

Islam

Ramadan

Ramadan marks the occasion when the prophet Mohammad received his first revelation from the angel Jibril (also known as Gabriel) for the Muslim holy book. For one month every year, followers **fast** from sunrise to sunset to grow closer to God and reflect on their own lives. No food or water is consumed during daylight hours during this month. Fasting reminds Muslims what it is like to go without, and promotes discipline. A light meal is eaten in the evening, including dates, rice, yoghurt and meat. A full meal is eaten before sunrise each day. Elderly people, those who are ill, pregnant women and young children do not have to fast.

9.2.4 A Jewish dinner on the Sabbath includes challah.

fast: eat very little or nothing

Muslim people do not eat pork because it is considered to be an unclean animal that eats its own faeces. Any meat eaten by Muslim people must be killed facing the religious capital Mecca, and it must be completely drained of blood.

Commercial buffets and salad bars must have special protective covers called 'sneeze barriers'. This helps to prevent people from coughing or sneezing over foods that others are to consume thus helping to prevent food contamination.

PP Web Destination

Hinduism

Ramanavami

Ramanavami celebrates the birthday of the God Rama. Followers worship Rama and have a day of feasting on exotic, expensive and unusual delicacies, offering food such as bananas and coconut to the God. Hindu people do not eat beef because the cow is considered sacred and relatives may be reborn as cows in another life. Many Hindus are vegetarian and those who do eat meat require it to be first sacrificed to the gods. Hindus eat with their right hand only as the left hand is considered unclean.

9.2.5 Hindu people offer food to the gods as a sign of respect and thanks.

Historical reasons

Events in history can influence when and how a special occasion is celebrated. Think back to the celebrations that you have already investigated. Can you identify a historical reason for any of these occasions?

Anzac Day

Anzac Day is celebrated on 25 April and reminds people of the courage, unity, sacrifice and loyalty of the Australian and New Zealand Army Corps who fought in a place in Turkey called Gallipoli in 1915. Women baked biscuits to raise funds for the war effort and today people still bake Anzac biscuits.

Valentine's Day

Valentine's Day is celebrated on 14 February. Its origins are unclear. One story that has survived since the time of Ancient Rome tells of a Christian priest who was sentenced to death by the Roman Emperor because he performed secret marriage services for Christian soldiers. The priest was sent to jail where he fell in love with the jailer's daughter. Before he was killed, he left her a love letter that he signed 'Your Valentine'.

On Valentine's Day people send anonymous cards and buy chocolates, flowers and sweets for their loved ones.

Family reasons

The family is a most important and influential unit. Your family helps to determine your values and ideas. Every family differs in terms of structure. Some common family structures are the **nuclear family**, the single-parent family and the blended or adopted family. Families all over the world choose to celebrate occasions that are important to them.

- Birthdays celebrate a person's age. Foods commonly served at children's parties include chips, sweets, fairy bread, chocolate crackles, sausage rolls and soft drinks.
- Weddings celebrate the marriage of two people. Foods commonly served include wedding cake (either fruit, chocolate mud or profiterole), champagne and sugar-coated almonds.

9.2.6 A wedding is celebrated by family and friends. Many elaborate foods may be served.

- Family reunions celebrate the bringing together of families that may have become separated over a period of time. A buffet style of food service such as a spit roast may be appropriate, as usually large numbers of family members have to be served.

PP Web Destination

Looking back

1 Define the term 'social celebration'.

2 List foods commonly served at a barbecue or picnic.

3 What foods are eaten during Chinese New Year?

4 How did Anzac biscuits originate?

5 Explain in your own words what an informal occasion is and give examples.

6 Why do you think that buffets are suitable for large numbers of people?

For you to do

7 How would catering for a children's birthday party be different from catering for an adult's birthday celebration? Design a menu of foods to be served at an adult's birthday and present this in the form of a 'table menu'. Use the computer to make your menu look as professional as possible. Pictures and clip art help to add interest and appeal.

8 Interview a family friend or relative who has participated in one of the cultural celebrations listed in the text. Ask them about their experiences, document your findings and report these to the class.

9 In pairs, create a collage of pictures and illustrations for a particular festival celebrated in Australia. On the back of the page describe the history of the festival and list the foods associated with celebrating the event. Display these in the classroom so that others can see your work.

RECIPE

BUTTERFLY CAKES p. 349

Taking it further

10 Research Aboriginal celebrations. Find out what happens and what foods are served. Use a variety of sources such as the internet, books, journals and magazines.

11 Consider various locations that may be suitable to hold social celebrations, such as an informal barbecue or picnic, and those locations suitable for holding a formal celebration, such as a Year 12 graduation.

12 Using library resources and the internet, research and outline the historical foundations and associated foods linked to a festival such as Thanksgiving or Divali. Provide an oral presentation and use overheads/digital media, pictures and images to add interest to your presentation.

UNIT REVIEW

9.3

Production and preparation

9.3.1 A chef is required to be properly attired, in keeping with hygiene and safety practices.

Foods, techniques and equipment

Producing food for any special occasion requires a great deal of thought and preparation. Food ingredients, equipment and facilities must be of a high standard and preparation techniques must follow hygiene and safety regulations.

Foods

Below are a set of guidelines for selecting and preparing food for special occasions. Foods should be:

- appropriate to the occasion and appeal to the ages, cultures and likes of the group
- in season so they are of the best quality and price
- varied in colour, flavour and texture
- in top condition—spoiled, contaminated, damaged, rotten or out-of-date foods are not acceptable
- ordered in suitable quantities to avoid wastage
- prepared at a suitable time to ensure the best quality—some foods can be prepared the day before while others must be prepared just before the event.

Techniques

The host or caterer of any event must work in an organised and professional manner. Most caterers use a special time plan to ensure that things run smoothly. There are a number of practices that a good host should follow to ensure that food is safe, hygienic and appealing. These include:

- tying back or covering hair, having clean, short nails and wearing proper protective clothing such as aprons and closed-in shoes
- washing hands regularly with hot soapy water, especially after using the toilet
- using clean utensils and not licking fingers or cooking spoons when preparing food
- using clean chopping boards to prepare meat and vegetables to avoid **cross-contamination**
- using clean tongs to handle or transfer food
- employing skilled workers who are trained to operate special equipment, for example a spit roast
- preparing food using a production-line approach with a set time plan
- dividing the kitchen into four main kitchen areas for food preparation, food service, cooking, and cleaning so that workers do not get in each other's way and food is not accidentally contaminated
- following recipes accurately
- remembering any religious rules for special religious occasions.

Equipment

Kitchen equipment must be safe and reliable if it is to be used to prepare and serve food for special occasions. Remember that:

- facilities must be appropriate for the number of guests being served
- if the celebration is to be held at a venue away from home, the host or caterer must consider what equipment and facilities are available
- cutlery, plates and storage space in refrigerators, freezers, cupboards and benches must be organised before the event to avoid any last-minute shortages
- kitchen equipment such as hand mixers, microwave ovens, blenders and stoves must be tested and checked before the event to detect any faulty equipment
- only equipment that saves time should be used—the preparation and cleaning of some equipment outweighs its value
- oven, refrigerator and freezer temperatures must be tested to see that they are suitable for keeping food safe and so preventing any risk of food poisoning

cross-contamination: transfer of bacteria or other micro-organisms from one food or item of equipment to another.

PP Web Destination

- equipment should be cleaned before and after use to ensure proper hygiene—stored equipment can often attract insects, rodents and cockroaches
- there must be enough serving equipment such as spoons, forks and tongs—when people swap serving utensils, cross-contamination can easily occur.

Small- and large-scale catering

The size of an event can have a great impact on the preparation involved. Planning an event for five or ten people is very different from organising an event for hundreds of guests.

Planning ahead allows the host to organise an appropriate menu according to the information they have on the number of guests attending. This planning is necessary to:

- avoid excessive waste of food and money
- avoid the embarrassment of running short of food
- ensure that the food is the best choice for the event.

Consider the following. A sit-down awards dinner for 250 business people is to be held. If the caterer serves steak with pepper sauce to the guests, it would be hard to prepare and keep the steaks warm and prevent them from going dry and tough before serving. A suitable alternative would be a beef casserole, lamb curry or chicken cacciatore that could remain simmering at the correct temperature and still maintain its high quality.

When catering for small numbers of guests, it is relatively easy to estimate rough quantities of food.

When catering for large numbers of guests, a rough guess or estimate is not suitable. Every caterer follows a set of guidelines similar to these shown on page 244. A host must consider the factors listed when planning a menu.

9.3.2 Catering for small numbers of guests is very different from catering for hundreds.

Many foods cannot be pre-prepared too far in advance. Bread becomes stale, cut or peeled potatoes go brown and whipped cream begins to liquefy.

9.3.3 Caterers' quantity guide

Type of event	Approximate number or items or portions per person	Foods commonly served
Evening cocktail party	8–10 items of food per person (sweet and savoury) 2 or 3 serviettes a small handful of nuts (20–30 grams) a small handful of chips (40–50 grams) 10 millilitres serving of dipping sauce	Finger food such as hors d'oeuvres, canapés, nuts, chips, cocktail frankfurts, champagne and mineral water
Lunch or dinner party	100 grams meat per person 1 medium potato 1 cup cooked rice or pasta ¼ cup peas 1/10 of a lettuce ¼ medium tomato ½ medium carrot 1 cup of fruit salad ½ cup whipped cream 3 cold beverages per person 1 hot beverage per person	Roast meats, salads, baked vegetables, pasta, rice, fruit salad, cakes, ice-cream, soft drinks, juice, tea and coffee
Morning or afternoon teas	4 items of food per person (sweet and savoury) 2 or 3 hot beverages per person 1 cold beverage per person	Light foods such as slices, cakes, muffins, biscuits, flans, juice, tea and coffee

PP Web Destination

Hands on

Class buffet activity

Purpose

As a class, to organise a lunch buffet that your class would enjoy. You will need to know the number of students in your class.

Materials

recipes for lunch buffet food, pen and paper, a food order and your notebook

Steps

1 Select a theme and decide on a suitable menu. Every student should suggest a possible recipe and then the class should vote on which would be best.

2 Establish suitable quantities for each recipe selected. Try not to prepare too much food. Your teacher will be able to guide you.

3 Construct a food order and include the date on which the event will be held.

4 Allocate tasks for the event. Remember, workflow is important. Try to organise your school kitchen into the four main work areas. Set out a time plan.

5 Organise layout of food and the decorations needed for the day. Each person can bring something to make the event special.

6 Design and produce a menu to paste into your notebook.

Activities

1 Did you encounter any problems while organising and planning your buffet?

2 Was the workflow plan helpful? Explain.

3 Was there food left over?

4 Should you have had more of any foods?

5 Were all of the recipes successful?

6 How could you improve the buffet if you were to do it again?

Tip
Use the caterers' quantity guide to help you when ordering the foods.

Looking back

1 List one guideline for either selecting or preparing foods for special occasions.

2 Why is food prepared using a production-line approach?

3 Why should the temperatures of refrigerators and warming ovens be tested before a special occasion?

4 What type of food would not be appropriate to serve at a function for 250 people?

5 What quantity of nuts should be ordered per person for a cocktail party?

6 How might cross-contamination occur when preparing a buffet?

7 Imagine that you are holding a dinner party for fifteen people. How much mince meat would you need to order?

For you to do

8 Read through the following situations, then select one event from the list and prepare one part of your menu in class with a partner. Have your idea approved by your teacher and fill out a food order for the practical lesson.

a Australia Day celebration: This is to be an informal celebration held in a local recreation area, for example a park overlooking Sydney Harbour. Eighteen guests of all ages will be attending.

i Design a suitable invitation.

ii Plan an appropriate menu.

iii Justify your menu choices.

b Valentine's Day dinner: This is to be a formal celebration for two adults to be held in an exclusive restaurant in the city.

i Design a suitable room and table decorations (draw these).

ii Plan an appropriate menu.

iii Justify your menu choices.

c Christmas lunch: This is to be an informal celebration for thirty guests of all ages (some with dietary disorders such as high cholesterol and obesity). The lunch will be held at home. As the host, you wish to spend as much time with your guests as possible, so some convenience foods may be required.

i Describe the location.

ii Plan an appropriate menu.

iii Outline menu items that may use a convenience food and give details.

iv Justify your menu choices for those with special dietary needs.

d Wedding breakfast: This may be either a formal or an informal celebration. The bride and groom are an older couple and have invited 100 guests, most of whom are over the age of 55.

i Describe the location and type of celebration.

ii Design and display an appropriate menu.

iii Justify your menu choices.

e Camping picnic lunch: This is to be an informal occasion for eight people, held in a national park without powered cooking facilities. Foods will be served cold and may be prepared beforehand if required. Camp-fire cooking facilities may be used if needed.

i Describe the location.

ii Plan an appropriate menu.

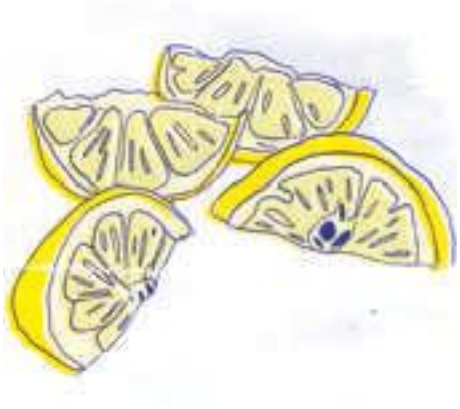
iii Justify your menu choices.

iv List problems that may occur when serving food in this situation.

Taking it further

9 Design your own guidelines for selecting and preparing food for special occasions

10 Find two other recipes that may be suitable to use at an awards dinner for 250 people. Display these for the class to see and justify why they are suitable.



9.4

Menu planning considerations

9.4.1 A well-presented meal has a balance of colour, flavour and texture.

Nutritional value

All menus for special occasions should be as nutritious as possible. Special occasions do require special foods, and this can often be at the expense of nutrition. Foods that fit into the 'eat least' category of the Healthy Diet Pyramid can be eaten in moderation on special occasions, but should not be a part of a regular healthy diet.

With any menu, it is always a good idea to offer an assortment of healthier alternatives, particularly if guests have special dietary requirements. Foods served at any occasion should consist of a balance of foods from the five food groups.

Imagine an adult who was overweight and has high cholesterol attended a dinner where the following was served:

- entrée—deep-fried spring rolls
- main—battered fish and chips
- dessert—chocolate fudge cake with cream.

Can you suggest two alternatives for each course that may be more nutritionally balanced?

Food appeal

Foods served at any meal must appeal to the senses. A variety of foods should feature in every menu.

Colour

Different-coloured foods make a meal more appealing. This can be achieved by using fruits, vegetables, sauces, garnishes and table decorations. Imagine an uninteresting plate of boiled rice, cauliflower, butter beans and poached chicken. The lack of colour certainly would not stimulate the senses.

Babies and young children have tastebuds on their tongues and on their cheeks. Flavours and temperatures are very strong to them as their mouths are highly sensitive. As children get older, the tastebuds on the cheeks begin to disappear.

Aroma

Appealing food smells can stimulate the tastebuds. The aroma of a food has a great impact on the actual flavour of the food, as flavour is a combination of smell and taste. Hot foods have a more potent aroma than cold foods—for example, compare the smell of a roast dinner to that of ice-cream. Think back to the last time you had a cold. Were you able to smell the food? Did it taste bland and uninteresting? Sit for a moment and try to recollect the aroma of the following foods:

- freshly brewed coffee
- hot baked bread
- sizzling bacon, eggs and sausages.

Flavour

Flavours in any menu must be varied. The tongue can detect four main flavours and many different sensations. The four flavours that the highly sensitive tastebuds can detect are sweet, salty, sour and bitter. Guests at a dinner party would be unimpressed if all foods served were hot and spicy. How would you feel sitting down to the following menu:

- entrée—curry puffs and hot chilli dipping sauce
- main—peppered steak or chilli chicken with spicy seasoned vegetables
- dessert—spicy fruit mince tarts.

Texture

Texture is also known as 'mouthfeel', which basically means how the food feels in the mouth. A well-planned menu will consist of differently textured foods in order to keep the guest interested. Textures can be smooth, grainy, rough, sharp, gritty or creamy. Imagine sitting down to a meal of foods that were all soft and creamy, for example:

- entrée—cream of pumpkin soup
- main—macaroni cheese, puréed beetroot and mashed potatoes
- dessert—cheesecake and ice-cream.

Occasion and setting

A menu must not only be suitable for the type of celebration, but also be appropriate for the setting or location of the event. For example, you could not successfully serve pumpkin soup at a stand-up cocktail party, on a boat during a harbour cruise or at a summer pool party.

If guests are at a picnic and sitting on grass, then finger foods or foods eaten with hands would be suitable. Imagine having to provide a meal for friends in the middle of the bush after a day of hiking. What would you serve them?

9.4.2 Janel in the Gourmet Dinner Service kitchen

FOOD IN FOCUS

Gourmet Dinner Service

Gourmet Dinner Service (GDS) was founded by Janel Horton on Sydney's northern beaches, and offers delicious and nutritious prepared meals with the convenience of home delivery. Meals are either frozen or chilled and all you need to do is add salad or vegetables.

GDS employs a team of chefs and kitchen hands who work in a custom-built commercial kitchen with a walk-in freezer room in Brookvale, Sydney. They also have a consulting nutritionist who helps to plan balanced and nutritious meals for customers.

Janel has campaigned to dispel the '80s concept of a frozen dinner. She says that 'educating the market that frozen dinners are good for you has been a major challenge. The era of the '80s supermarket frozen dinner has given food a bad name'.

Most orders are placed online via their website and the menu offers an extensive range of meals. Customers can sign up for monthly newsletters and e-news that outline monthly specials or cost-effective seasonal options. This type of marketing has been highly effective and means GDS can be in direct contact with their customers on a regular basis.

Customers with special dietary needs can search meals online that are wheat and gluten free, vegetarian or healthy options. They can also search for meals that contain only fish or chicken etc.

The meal service is marketed towards a large sector of the community who are time poor. This includes DINKS (dual income no kids) and singles, families with babies and toddlers (including those on a budget) and the elderly. Most of the meals are low carbohydrate and reduced fat to meet modern society's expectations. GDS takes advantage of seasonal foods in order to make meals fresher and more affordable.

The main menu consists of foods such as:

Persian Chicken, Greek Lamb, Russian Salmon Pie, Stuffed Capsicums, Moussaka, Sundried Tomato Risotto, Indian Vegetable Curry, Lamb Dolmades and Mughlai Beef Curry.

GDS offers meals for special occasions such as cocktail parties, Easter and Christmas functions. The cocktail menu includes foods such as tandoori marinated chicken skewers with minted raita; smoked salmon, ricotta and chive muffins; spinach and fetta filo pastry; arancini balls with basil and tomato jam; and roasted vegetable and haloumi skewers with balsamic dressing.

They offer four different Christmas menus—traditional, modern, picnic and barbecue.

In 2009, GDS turned out 140 000 meals and also launched recession-buster meals to provide families with a viable, cost-effective alternative to takeaway food.

Source: Gourmet Dinner Service website

Activities

1. What type of meals does Gourmet Dinner Service offer?
2. Explain why the '80s frozen dinner has a bad name.
3. What niche market does Gourmet Dinner Service cater for?
4. Describe why this service might be useful for someone hosting a special occasion such as a Christmas picnic or barbecue.
5. Research recipe books of your own or recipes on the internet and give examples of other meals that would be suitable for a home delivery dinner service to sell chilled or frozen.

9.4.3 Foods served at a children's birthday party reflect the ages of the guests.

portion: to measure or divide foods into predetermined quantities

Characteristics of diners

Age

Foods on a menu must be appropriate to the age of the guests invited. Adults at a formal dinner party would be shocked to receive 'pigs in blankets', while children at a birthday party would be unimpressed by pâté and caviar. Elderly people cannot eat certain foods such as toffee, pork crackling, tough meats or sticky lollies, especially if they have dentures or false teeth.

Considering that some functions include a range of age groups, foods should be suitable for the full range of guests. Sometimes a separate children's menu is provided.

Meal **portioning** is another factor that requires consideration when age is concerned. Children consume a much smaller quantity of food compared to an adult male.

Health

Some people suffer from conditions such as obesity, high cholesterol, diabetes, food allergies and intolerances. It is very important to cater for people with special dietary needs when planning a menu. The provision of alternatives enables a person with a health problem to avoid the foods that they should not eat. Imagine that you suffer from a wheat allergy and cannot eat any foods that contain bread, flour, breadcrumbs or pasta. If you go to a pizza shop with your friends, what would you order?

Energy levels

Highly active workers such as builders, carpenters, plumbers and gardeners who require a lot of energy may tend to select more filling or energy-rich carbohydrate foods such as pasta, bread and rice from a menu. Less active workers such as business men and women who work in an office do not need as much energy from food because their jobs are more sedentary. These workers are more likely to select low-fat or low-kilojoule alternatives such as lean meats and salads.

Cultures

People from different cultures have different expectations for how food is planned and prepared for a special occasion. When menu planning, you must consider the strict dietary and food preparation requirements for a particular cultural group. There would be a lot of food left over if you served tomato and bacon quiche at a traditional Jewish function (considering that many Jews do not eat any pork products). A prior knowledge of cultural needs will ensure that problems do not occur.

FOOD IN FOCUS

The Korean culture and kimchi

Kimchi is a fermented vegetable dish that is made in Korea and is similar to German sauerkraut. It comprises 70 per cent cabbage, 20 per cent radish and 10 per cent other vegetables.

In the Korean culture, kimchi is traditionally served with almost every meal. It makes up approximately 13 per cent of the total daily food intake!

Kimchi is made first by salting the vegetables. They are then washed, seasoned with spices and stored in a cool place for a few days in order for the natural process of fermentation to take place.

The table on the right outlines the nutritional composition of kimchi.

Activities

1. What vegetables are used to make kimchi?
2. Use an Excel® spreadsheet with appropriate formulas to calculate the quantity of protein, fat, dietary fibre and Vitamin C in a 300 gram, 500 gram and 1 kilogram portion of kimchi.
3. What is sauerkraut? Use the internet to research why Germans value this food.

Nutrient	Per 100 gram edible portion
Protein	2 grams
Fat	0.6 grams
Total sugar	1.3 grams
Dietary fibre	1.2 grams
Calcium	45 milligrams
Vitamin B1	0.03 milligrams
Vitamin C	21 milligrams

Number

The number of guests attending a special occasion has a direct impact on the menu planning. If large quantities of people are expected, then foods that can be prepared in bulk quantities are essential. There may be a long waiting time between when the meal is ready and when the guests sit down to eat, so foods that may be reheated easily are vital. There will also be people with special dietary needs, such as those who are vegetarians, or have coeliac disease or lactose intolerance. Foods must be provided for these people in order to save embarrassment and confusion.

If only a small number of guests are expected, then you should be able to cater for each individual's needs. If you know that one guest is vegetarian and another is allergic to peanuts, then you can easily plan your menu around these factors.

Tastes

Everyone has different food tastes. Some people adore the taste of caviar and blue-vein cheeses, while others cringe at the sight. When planning menus for special occasions it is important to remember that not everyone will like to eat all types of foods (particularly those foods that are quite exotic).

9.4.4 Kimchi is a favourite Korean food.

FOOD IN FOCUS

A taste treat for travellers

John Blair

Even the breakfast line is semi-automated … a squirt of oil, a measure of beaten egg, partly cook on a conveyor belt of fry pans … but the skill of the 'omelette technician' comes into play for the filling and the skilful flip which completes the tasty envelope before sending it off on its finishing run to the plate.

After a visit to Cathay Pacific Airways' catering services facility at Hong Kong International Airport, you can never again be ho-hum about airline food nor look depreciatingly at my in-flight breakfast eggs.

Despite having to produce upwards of 39 000 meals a day for thirty-three airlines, there is still an element of tender loving care in every menu.

From great vats of heady curries to mountains of fruit and vegetables and skewers of kebabs, armies of chefs and assistants in their tall hats or head covers add the human touch in every department.

Look at the list of special requirements. Nothing is 'simple'. Vegetarian has many types—from lacto-ovo and vegan through oriental, Indian and the extreme 'strict Indian', which must not contain any meat, fish, egg, dairy product, game, seafood, ginger, garlic, onion, potato or any other root vegetable.

Then come the kosher dishes for Jews, halal preparation for Muslims, Hindu non-vegetarian (but no beef or pork) and non-beef and non-veal dishes popular with Buddhists and many Chinese on South-East Asian routes.

Medical meals, devised by Cathay's nutrition experts and dieticians, and a selection of children's meals, from strained food to hamburgers, present another dozen or so challenges to the kitchen.

So next time you look down at your airline meal, consider the planning and preparation that has been carried out behind the scenes.

Source: Adapted from 'A taste treat for travellers', *The Manly Daily*, 24 December 2002

Activities

1. Why do you think each food ingredient has to be measured out so carefully?
2. What does the term 'semi-automated' mean?
3. What is a lacto-ovo vegetarian?
4. Can you think of other people who might require a 'special' meal on an airline flight?

9.4.5 Menus are carefully planned and a production-line approach is taken by Cathay Pacific chefs.

Resources

Ingredients

When planning a menu, the host must consider the ingredients to be used. Ingredients:

- should be in season to ensure that they are at the right price
- should be of high quality so must be purchased from a reliable supplier
- may be purchased in 'bulk' quantities.

Note that convenience food ingredients may be used to assist the host when planning for a big event, for example pre-prepared sauce mixes, frozen cheesecakes and frozen chips.

Equipment

When the host plans a menu, it is necessary to determine that the right equipment is available to prepare and serve the food. If the host is preparing food for 100 or more people, large-scale equipment may be necessary, for example a large soup vat for chicken noodle soup or a food processor for grating large quantities of carrot. The host must be familiar with how to use each piece of equipment safely.

Skills

The skills of the host and kitchen staff must be appropriate to the menu. When planning foods for a special occasion, always remember to try the recipes beforehand to determine the degree of difficulty required. It would be a disaster to find out at the event that you misunderstood the recipe! All restaurants have a range of apprentice and fully qualified chefs to ensure that the skills required are always available.

Money

When planning a menu the host should have a budget and select affordable ingredients that fit within that budget. For example, if the budget is limited, it would be silly to plan lobster as an entrée. Professional caterers must buy the raw ingredients and pay employees for the time and effort involved in preparing and serving the food. If ingredients are too expensive and too much work is involved in preparing foods beforehand, the caterer has to pay more money for employees to stay overtime, and their business will certainly not succeed.

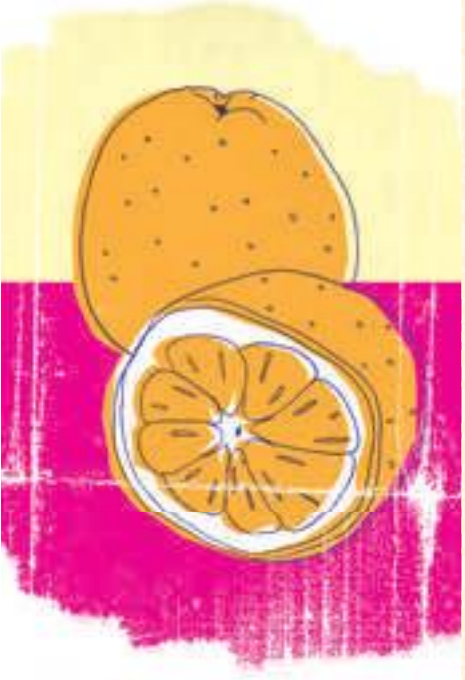
Time

The host will always want to spend as much time as possible with guests. Thus, planning a menu that allows for preparation prior to the event is helpful. Many people start by shopping for ingredients via the internet to save time. Convenience foods are also an ideal way to save time and effort in the kitchen. Instead of using fresh, steamed baby potatoes for a potato salad, the host may choose to select a can of 'tiny taters' and add dressing and seasoning. Lots of small convenience food alternatives save a great deal of time in the end.

Canned food such as peas remain fresh for up to two years when unopened in your cupboard. Frozen peas will last approximately three to six months and fresh peas five to ten days.

PP Web Destination

9.4.6 Large-scale kitchen equipment is needed to prepare food commercially.



RECIPE

QUICK CHRISTMAS FRUIT MINCE TARTS p. 350

Hands on

Fresh and convenience foods

Purpose

This activity allows you to plan, prepare and evaluate a menu that may be used for a special occasion of your choice. You must use a balance of both fresh and convenience foods.

Steps

1. Select a special occasion with a partner or a team.
2. Plan an appropriate menu for the occasion.
3. Select one item from the menu that uses fresh and convenience foods. Show your teacher and have it approved.
4. Complete a food order and hand it to your teacher.
5. Prepare the food item in a practical lesson.

Activities

1. What was the special occasion that you selected and why did you choose it?
2. Draw up a table in your notebook and list both the fresh and convenience food ingredients you used.
3. Comment on the final result. Was there anything that you would change? Discuss your finding with your partner or team.
4. Were the convenience foods helpful when you prepared the meal? Explain.

UNIT REVIEW

Looking back

1. What four things make up food appeal?
2. What types of foods have a more potent aroma?
3. List the four flavours detected by the tongue.
4. What types of foods do elderly people usually not eat?
5. Name one health condition that an individual might suffer from.
6. When planning menus, list the five resources that must be considered.
7. In your own words, define the term ‘sedentary lifestyle’.

For you to do

8. Consider the guidelines that should be followed when preparing a nutritious menu. Design your own guidelines that would guarantee that a healthy meal is planned.
9. Imagine that you are to host a children’s lunchtime birthday party. You have been allocated a budget of $100. Eight 10-year-olds will be attending the event. What foods would you order? Start by planning a menu. Visit an online supermarket such as Coles or Woolworths and record prices. Prepare a list of all ingredients and prices. Can you come in under budget?
10. Make a list or collage of convenience party foods that a host could use in order to save time.

Taking it further

11. As a class, discuss the importance of using convenience foods as a time-saving device when preparing food for special occasions. Analyse the advantages and disadvantages.

Workflow plan

When food is prepared in a **commercial** setting, there must be a logical workflow. Workers must not waste time by getting stuck in areas of the kitchen in which others are trying to work. Cluttered kitchens where some staff are cleaning in the same place that others are trying to prepare raw ingredients are a disaster! Work does not flow freely and food can easily be contaminated.

Sequencing tasks and allocating time

Chefs must arrange a particular order of tasks to be completed. This is known as 'task sequencing'. In a well-organised kitchen, workers are allocated one task and a set period of time to complete it and they must all work to schedule to get the job done.

Consider the preparation of marinated steak with creamy mushroom sauce and garden salad. The early steps of preparation in sequence would include trimming the meat and preparing a marinade, marinating the meat and setting it aside in the refrigerator, washing and slicing raw ingredients such as mushrooms for the sauce and salad ingredients and so on. Each task would be performed in an exact timeframe. It would be pointless to prepare the sauce at an early stage because it is not required until just before serving. Large vats of sauce on the stove leave little room for the preparation of other foods.

Work areas in the kitchen

Dividing up the kitchen into four work areas ensures that workflow is smooth, time is not wasted and cross-contamination does not occur. Remember that any equipment needed at each stage or area of the kitchen must be located quickly.

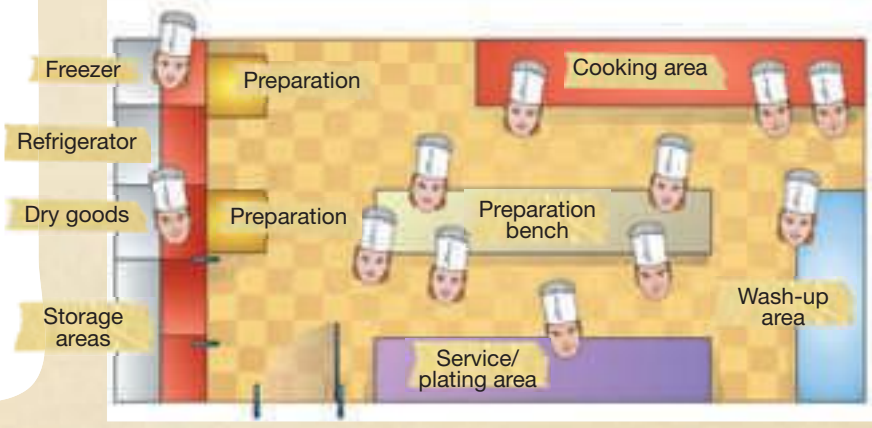
1. The preparation area requires equipment to chop, slice, wash and peel raw foods.
2. The cooking area requires equipment to mix, bake, steam, roast, poach and simmer foods.
3. The service area requires equipment such as tongs, ladles and spatulas that are needed to serve food.
4. The cleaning and washing-up area requires equipment such as dishwashers, detergent, sponges and drying racks to clean anything used in the preparation of food.

commercial: for profit

RECIPE

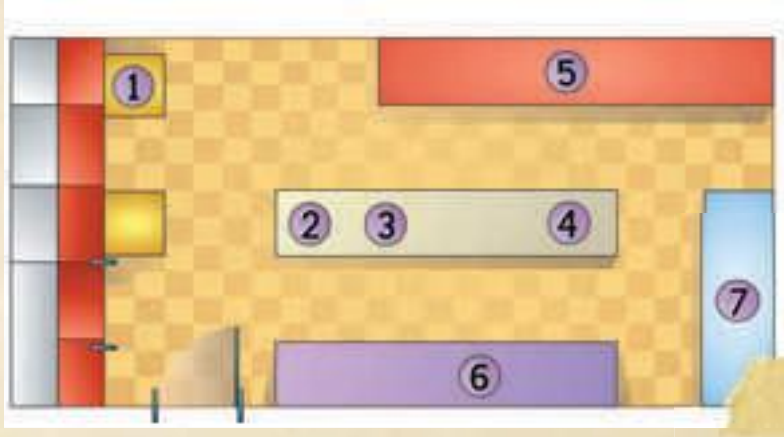
CHICKEN AND RICOTTA SAUSAGE ROLLS p. 351

9.5.1 Each chef is allocated an area in which to perform their tasks to avoid problems such as cross-contamination.



Key

1. Raw ingredients prepared
2. Meat and cheese placed on pastry
3. Pastry rolled and sliced
4. Rolls brushed and sliced and placed on baking trays
5. Rolls baked in a commercial oven
6. Rolls taken to service area
7. All equipment washed in a conveyor dishwasher



9.5.2 A commercial kitchen layout to prepare sausage rolls

RECIPE

POTATO AND CORN CHOWDER WITH WARM BREAD ROLLS p. 352

Hands on

Potato and corn chowder with warm bread rolls

Purpose

To devise your own workflow plan for a recipe.

Steps

1. Find the recipe on page 352 and read the ingredients and method.
2. As a class, design a workflow plan that is appropriate for the layout of your school kitchen.
3. Allocate a task to each class member.
4. Count the number of students in your class. Work out how many batches of soup and bread you will require.
5. Fill out a food order and select a practical lesson.
6. Complete the practical class and answer the questions.

Activities

1. What was your opinion of the workflow plan that your class designed? Were there any problems? Explain.
2. Did you encounter any problems with the size or scale of equipment available? Outline the problems associated with the size of your saucepans in a domestic setting compared to what would be required in a commercial setting.
3. Do you think that the time taken to prepare the soup as a production line was quicker than if you had all prepared it yourselves in pairs or groups of three or four? Explain.

UNIT REVIEW

Looking back

1. What is a commercial setting?
2. What problems arise when kitchens are cluttered?
3. What is another word used for the logical workflow of tasks?
4. List the four areas in a kitchen.
5. Explain why it is useful to apply a workflow in a commercial kitchen.

For you to do

PP Web Destination

6. Using graph paper, redesign the layout of your school kitchen to make it appropriate for preparing food commercially. Label the four main areas.
7. Using the website link, visit the Tip Top Bakery website and enter the virtual bakery. Investigate each stage that the bread travels through during production. List the types of jobs that workers would carry out at each stage of production.

Taking it further

8. Find a recipe that may be used in a commercial kitchen and prepared in a production line. Draw up a table in your notebook that lists the number of workers, jobs and time required.
9. Create a list of tasks that would be performed in the preparation area of a kitchen.

Presenting and serving food

9.6

Every good chef knows the importance of making food look as appealing as possible for the consumer. For a special occasion, guests expect foods to look colourful and exciting.

Garnishing and decorating techniques

A garnish is a sweet or savoury edible item that is used to enhance the appeal of a dish or meal, for example a strawberry fan, lemon twist, celery curl, cheese sprinkles, piped cream or parsley sprig.

Decorations are items that add appeal to a table or food, for example an ice sculpture on a buffet table, a posy of flowers around food plates or white frilly cuffs placed on the crown of roast lamb. They are not necessarily edible.

Many foods can be converted into something interesting. Carrot, for example, can be sliced into thin **julienne** strips, grated or shredded, or cut into shapes such as flowers.

It is the job of a food stylist to make sure that a food or dish looks its best. These people are often employed in the food photography industry to take photographs of dishes for cookbooks or food magazines. The food stylist uses interesting backdrops, plates, cutlery, garnishes and table decorations to capture the desired image of the food. The consumer must almost be able to taste the food when they look at the picture. Look at the photograph in 9.6.1, which was taken for a food magazine. What techniques has the food stylist used to capture the theme of the foods?

Presenting foods does not have to be time-consuming. If time is limited, there are many shortcuts that can be taken. For example, instead of piping icing in a decorative design on a cake, you can place a paper doily over the cake, dust it with icing sugar, remove the doily to uncover the pattern and then add some fanned strawberries.

PP Web Destination

When presenting foods for a special event you should make sure:

- table cloths are clean—white cloths are more attractive than coloured or patterned cloths
- decorations are simple yet appealing
- similar colours and themes are used
- a variety of garnishes are used
- plates are adequate in size
- serving plates have no messy spills and drips
- foods are presented at different heights on a buffet table and arranged around a central area
- serviettes are folded decoratively and displayed on plates or tables.

Food stylists make food look appealing and mouth-watering in photographs. When setting up the photo, mashed potato may be used instead of ice-cream so that it doesn't melt. Roast meats may be painted with wood lacquer to enhance the shine and hot water is placed behind or below food to make it appear that it is steaming.

julienne: narrow strips that are about three millimetres in width

9.6.1 A mouth-watering photo is the result of a food stylist's good work.

Practitioner focus

Yogi Johnstone—cake decorator at Sweet Dreams Cakes

9.6.2 Yogi at work

Yogi Johnstone established Sweet Dreams Cakes in 2006, specialising in cakes and cookies for special occasions. Cake decorating is a rewarding career for those who have the skills and ability to create elaborate works of art as the centrepiece of a birthday, wedding, baptism, corporate party or product launch.

With a passion for creativity, Yogi specialises in theming the sweet treats at children's parties, often to match a chosen theme, party invitation or party decoration. Popular themes include disco, fairy garden, cowboy, pirate or sporting themes.

In recent times, tiered cup cake designs have become a chic special-occasion option, and cookies and cookie wands have also become very popular as take-home gifts for parties and weddings.

Yogi rarely creates the same cake twice and a great deal of time and effort is spent on each job, particularly the customised cake design and intricate fondant decorations. Her daily routine consists of baking and decorating, ordering supplies and equipment, account invoicing and managing the books, correspondence with clients either via phone or email, meeting with clients to design their cakes, photographing finished cakes and delivering and setting up each cake creation.

Cake decorators come from a range of training backgrounds, such as culinary colleges, pastry art schools, TAFE and local community colleges. TAFE, local councils and other education institutions also offer courses on food safety and handling for people working in the food industry. These sorts of courses are a valuable foundation for anyone embarking on a cake-decorating career and cover personal hygiene, food poisoning, food spoilage, legal procedures and regulations, cleaning and maintenance, pest control, rubbish storage and disposal and food safety plans.

Yogi attributes her success in the cake-decorating industry to a variety of essential personal skills such as attention to detail, fine motor skills, good communication and customer service skills, a passion for creativity, patience, perseverance and sound business and financial management skills.

PP Web Destination

Activities

1. List three special occasions that Yogi creates cakes or cookies for.
2. Describe the daily routine of a cake decorator.
3. Outline the various courses offered that can educate people wanting to start a career in cake decorating.
4. Why do you think that the local council might be valuable for someone starting a cake decorating career?
5. What types of skills (practical and personal) are essential to be a cake decorator?
6. Investigate cake decorating techniques and courses on the internet. Where do you think is a good place to start if you wanted to embark on a career in cake decorating?

9.6.3 These children's birthday cakes show a variety of designs and techniques.

Hands on

Web Destination

Decorating birthday cakes

Purpose

To decorate a birthday cake and express your creativity.

Materials

recipe for a basic butter cake and Vienna cream icing; pen and paper for planning your design, icing and decoration ingredients

Steps

1. Design your birthday cake. Select a theme, appropriate colours and ingredients, draw your design and show your teacher.
2. Once your design has been approved, draw up a food order. Remember to order all the ingredients that you will need to decorate your cake.
3. Collect materials that will add to your cake display, such as a table cloth, party hats and streamers.
4. Make the cake in one practical lesson and decorate it in the next practical class. Display your cake. Your teacher may be able to photograph it.
5. Look at the other cakes that are presented and complete the activities below.

Tip
Remember to use appropriate and hygienic handling techniques when preparing your design.

Activities

1. What methods did you use to display your birthday cake?
2. What other methods did students use to display their cakes?
3. List the decorations that were used.

UNIT REVIEW

Looking back

1. Define the term 'garnish'.
2. Give an example of a decoration.
3. What does a food stylist do?
4. List two tips or guidelines that should be followed when presenting foods.

For you to do

5. Draw three other examples of garnishes.
6. Make up a tip of your own to follow when presenting foods.
7. In pairs, design a platter of garnishes for finger foods such as Indian samosas, crispy pork wontons, falafel, Vietnamese mini spring rolls and Indonesian beef satay sticks. First, decide on the types of garnishes to be used, for example tomato roses, then fill out a food order for the appropriate ingredients.

Taking it further

8. Who might a food stylist work with in order to get the atmosphere and lighting of a food correct?
9. Using the internet, research the role of a food stylist. Include food photographs that show good presentation.
10. Find four pictures of food for special occasions in a magazine. Cut out the picture and paste it in your book. For each picture, comment on the decorations, garnishes, atmosphere or setting, appeal (use of colour, flavour and texture) and other techniques used to enhance the presentation of the food.

RECIPE

BASIC BUTTER CAKE p. 353

VIENNA CREAM ICING p. 354

9.7

Using convenience foods for special occasions

Pre-prepared and partly prepared convenience foods can help save time and effort when preparing foods for a special event. There are many alternatives to using fresh, unprocessed foods.

Pre-prepared foods may be completely prepared and require only heating and/or serving, for example:

- simmer sauces and ready-made sauces and gravies in the pouch
- pizza bases/frozen pizzas/frozen pies and pastries
- canned vegetables and vegetable mixes in a can
- salad dressings
- whipped cream
- partly baked heat-and-serve bread rolls
- ready-made pastas such as ravioli or tortellini.

Partly prepared foods include foods that have had some treatment to make them easier to prepare, such as:

- boned and skinned meats
- peeled and chopped vegetables
- fresh fruit salad or soup mixes
- packet cake or bread mixes
- sliced and shredded cheeses
- powdered gravy mix.

Many convenience foods are available to assist people with special dietary needs, for example:

- soy yoghurts for people with a milk allergy
- artificially sweetened soft drinks for people who suffer from diabetes
- non-animal-based cheeses for people who are strict vegetarians.

Time is critical when a caterer must prepare large quantities of different foods. For example, it is acceptable for a caterer to use a variety of prepared and pre-prepared convenience foods as well as fresh foods when presenting a smorgasbord.

RECIPE

CHICKEN AND CORN VOL-AU-VENTS p. 355

9.7.1 These are pre-prepared convenience foods.

9.7.2 These are partly prepared convenience foods.

Hands on

School smorgasbord

Purpose

This activity gives you the opportunity to cater for and host a smorgasbord to celebrate Year 12 graduation using a variety of fresh and convenience foods. Make sure you follow safe and hygienic food-handling practices in your preparation and food presentation.

Steps

1. Each student selects a suitable recipe.
2. As a class, design a suitable menu. Students can vote on each recipe.
3. Organise suitable quantities and fill out a food order.
4. Design the layout of the smorgasbord, including decorations.
5. Design an invitation for the event and give one to each Year 12 student.
6. Produce and prepare your smorgasbord in the allocated practical lesson.

Activities

1. Rule up your notebook into three columns. List the fresh foods, partly prepared convenience foods, and pre-prepared convenience foods that you used in your smorgasbord.
2. Were there any problems in preparing these foods? Were the instructions clear?
3. In two or three paragraphs, give your opinion of using convenience foods to save time and effort. Would you use them again? Why or why not?

Tip
Organise your smorgasbord for lunchtime, as students will be unable to leave classes.

UNIT REVIEW

Looking back

1. How do convenience foods help a host?
2. Give two examples of partly prepared convenience foods.
3. Give two examples of pre-prepared convenience foods.
4. What is a smorgasbord?
5. Why would a host want to use a mixture of fresh and convenience foods?

For you to do

6. Create your own menu for a dinner party that uses a variety of fresh and convenience foods. Label which foods will be fresh and which will require some preparation. Type up your menu for display and include graphics.

Taking it further

7. Imagine you are catering for a cocktail party using the following menu:
   - bacon and mushroom tartlets filled with sliced button mushrooms, bacon cubes and topped with egg, milk and nutmeg
   - spinach and fetta filo pastry triangles
   - fruit platters with sliced pineapple, mango, kiwi fruit, strawberries, grapes and apples
   - cheese platters with brie, blue vein and vegetarian cheddar cheese served with rice crackers and water crackers.

   What convenience products are available that can be used to save time when preparing this menu? For each food item on the menu, complete the table from the worksheet 'Convenience foods for special occasions'. Use the example provided to guide you.

Chapter review

Looking back

1. What is a staple food?
2. List three types of bread.
3. Give an example of a social reason for celebrating with food.
4. List three religious celebrations that are associated with special foods.
5. What is Passover?
6. List two historical events that we celebrate with food.
7. Give an example of a family celebration that involves special foods.
8. Outline five basic hygiene rules when preparing food for special occasions.
9. Refer to the caterers' quantity guide (page 244) and list the number of food items per person that should be served at a morning or afternoon tea.
10. List three things that need to be considered when planning a menu for a special event.

For you to do

11. Design, make and present a recipe card for your favourite bread recipe.
12. Interview someone with a different cultural or religious background from you. Investigate an event that you both participate in (such as a family barbecue or birthday) and find out the differences in foods served. Report your findings to the class.
13. Design a menu for an Australia Day barbecue and devise a list of convenience food ingredients that could be used to produce each recipe or meal.
14. Plan a 16th-birthday party celebration. Choose a location, set a suitable menu and justify your choices.
15. Explain why nutritional value is important when planning meals for special occasions.
16. In a table, list the advantages and disadvantages of using convenience foods when you are preparing food for special occasions.
17. Use your own words to describe a kitchen workflow plan. Explain why it is helpful and how it saves time.
18. What are the four main work areas in a commercial kitchen?
19. Select a complicated recipe and devise a workflow plan. Use a computer software program to create a drawing/diagram of the kitchen work areas and don't forget to include a key.
20. Give five examples of garnishes and draw each of them.

Taking it further

21. Use a variety of resources to research a type of food that is eaten all over the world (such as milk, cheese or fish) and provide a report of at least two pages outlining the differences and similarities shared by various cultures or regions.
22. Design and produce an audio/visual presentation on a religious celebration of your choice. Present this to the class.
23. Produce an A3 list of guidelines that may be used by a small catering company to remind them of proper food preparation and production techniques.
24. Imagine you own a catering service that provides meals for the elderly in institutions such as nursing homes or retirement villages. Devise a list of menu planning considerations that will need to be determined before you set a seasonal menu. Then design a menu and justify your choices for each food.
25. Produce a career profile for a food stylist and a food photographer. Use a variety of resources (and interview a stylist and a photographer if possible) and list the education, training and experience needed.

Chapter 10

What's in?

Focus area: Food trends

Once, most birthdays were celebrated at home with a cake that was baked using a family recipe. Next came the packet mix, which saved time and energy. Today, purchasing a birthday cake and celebrating the event outside the home is popular. There are many reasons why a food, a cooking technique, a recipe or food presentation technique becomes popular. Often the change reflects changes in society, in technology or in our beliefs about food. In this chapter you will investigate current food trends and the influences on these trends, and of course you will be preparing and presenting food in a modern style.

Chapter outcomes

In this chapter you will learn about:

- trends in food, dining and food service
- trends in food preparation and food styling
- food styling and photography
- factors affecting acceptance of new food trends
- marketing and current food trends.

In this chapter you will learn to:

- identify and compare past and present food trends
- identify services offered by hospitality establishments
- plate food for service
- design, plan, prepare and present the latest food trends
- style and photograph food
- explain the influence of food styling and photography
- discuss what influences the acceptance of new food trends
- discuss how the media promote new food trends
- create an innovative marketing concept
- produce an image of styled food using computer technology.

Trends in food

10.1

10.1.1 Certified organic foods and foods containing organic ingredients, indicated by the logo

Food trends reflect popular changes that consumers have made in the way they purchase, prepare and serve food. Current trends indicate that Australians lead hectic lifestyles, appreciate technology and value the environment and sustainability, as well as have an interest in quality foods from different ethnic origins. They also have more foods available and have to make more decisions about foods they select.

Organic ingredients and produce

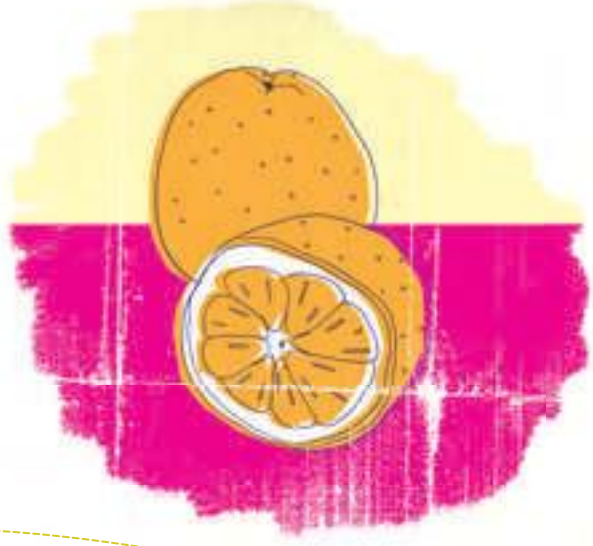
Organically grown produce such as fresh fruit and vegetables, organic meats, **free-range** eggs and chickens, as well as packaged and prepared foods with organic ingredients, have become popular. In the past, organic foods were in limited supply but today they are commonly found at fresh food markets, supermarkets and via the internet.

Organic foods are grown without the use of artificial fertilisers, pesticides, herbicides, antibiotics, growth regulators and hormones. Instead, farmers use crop rotation, manures and other non-chemical means to produce crops and to help conserve the environment.

While organic foods are generally more expensive, smaller than and not as long-lasting as non-organic foods, many consumers believe they have more flavour and are more nutritious. Many organic foods or products containing organic ingredients carry a logo to indicate that standards have been followed to produce an authentic organic product.

free-range: livestock permitted to graze or forage for grain, rather than being confined to a small enclosure

Organic agriculture is the fastest growing sector of the global food industry with big business and major retailers now heavily involved in processing and selling organic products.



FOOD IN FOCUS

Juicy Isle organic juices

Juicy Isle has announced the launch of its 2 L Juicy Isle Premium Organic Orange Juice. This comes after research company Newspoll revealed that 61 per cent of Australian grocery buyers purchase organic products.

Michael Cooper, General Manager of Juicy Isle, said, 'our research has shown that organic is moving from being "trendy" to being something that is becoming increasingly important to consumers for a range of issues from health to social and sustainability.'

Made from a blend of local and imported ingredients, the new organic orange juice is free from pesticides and herbicides and contains 240 per cent of the Recommended Daily Intake (RDI) of Vitamin C.

Juicy Isle's Premium Organic Orange Juice is the only organic, chilled 2 L juice with distribution in both Coles and Woolworths nationwide.

Source: Adapted from information on the *Food Australia* website, January 2010

Activities

1. What percentage of Australian grocery buyers are purchasing organic products according to Newspoll?
2. Why do you think consumers prefer organic product?
3. List other organic products that you can purchase.

RECIPE

MARBLE CAKE
p. 356

Genetically modified foods

Genetic modification involves a gene from one plant or animal being transferred into another plant or animal. For example, the gene that makes a plant tolerate drought can be inserted into the gene of a plant that does not.

With genetic modification the good features of one food can be incorporated into another food, which can help to improve the nutritional value, appearance, shelf life and processing of the food. It is claimed that genetic modification could also protect the environment, as fewer chemicals are needed to grow crops and combat pests.

The technology is still new but it is being used extensively overseas. Tomatoes with firmer skins and soy bean plants that are herbicide-resistant have been developed as a result of genetic modification. Genetically modified varieties of corn, potatoes, sugar beet, cotton oil and canola oil are now found in many food products overseas.

Australian authorities are uncertain of the long-term effects of genetic modification so they have banned the growing of genetically modified crops in Australia except for soy beans and cotton. Imported products such as corn chips, taco shells, burritos, spaghetti sauces and soy sauce may contain genetically modified ingredients. It is mandatory for genetically modified ingredients to be identified on food labels in Australia and New Zealand

Prepared fresh food products

Australians appreciate the flavours of fresh ingredients, but with many Australians leading busy lives, there has been a trend for fresh foods to be prepared for us in some way, for example marinated chicken wings, stir-fry meat strips, prepared salads, crumbed meat, prepared rissoles, dips and fresh pasta.

10.1.2 A high proportion of canola is genetically modified.

10.1.3 Mrs Crocket's new range

FOOD IN FOCUS

Pre-prepared food: Mrs Crocket's dishes out new salads for summer

Mrs Crocket's is helping retailers deliver on consumer demand for healthier eating this summer with the introduction of several exciting new salads.

The new range includes two 97 per cent fat-free salads endorsed by Weight Watchers (Light Bean Salad 275 g and Light Alfresco Salad 275 g) and two gourmet deli salads (Roast Vegetable Couscous 375 g and Spinach & Feta Penne 300 g).

Mrs Crocket's Managing Director Robert Spurway said quality innovation was a primary objective of the business.

'Our focus is on creating high-quality products that provide consumers with the healthy fresh food they're asking for,' he said. 'Each recipe has been created by a dietitian working with our chefs to maximise nutrition and appeal. Our new packaging across the entire range also creates a great visual display in store with strong bright colours for summer. The real secret is quality produce and minimal processing to make a great tasting and naturally fresh product.'

Mrs Crocket's salads are stocked in the fresh produce and deli departments of Coles, and independent retailers across Australia.

Source: Media release, Mrs Crocket's, 26 October 2009

Activities

1. Identify the four salads made by Mrs Crocket's.
2. What, according to the managing director of the company, are consumers wanting from food products?
3. How has the company changed its packaging for summer?
4. Where can you purchase the salad?

herbs: leafy plants, valued for their flavour and scent

spices: aromatic seasonings obtained from the bark, buds, fruit, roots, seeds, or stems of various plants

10.1.4 Chilli is a spice used to make curry paste.

For quality control, wrap fresh herbs in paper towel and place in a plastic bag in the fridge, or stand them for up to one week in a jar of water covered with a plastic bag.

The colour of a chilli will not indicate its degree of spiciness. Usually, the smaller the chilli, the hotter it will be.

Fresh herbs and spices

Modern Australian cooking uses a variety of **herbs** and **spices**—fresh are preferred because of their flavour. Many of these herbs and spices stem from Mediterranean and Asian cooking but, increasingly, Australian native herbs and spices are being used in many modern recipes. Herbs and spices also provide a wide range of nutrients and phytochemicals (plant chemicals) that can help prevent disease and contribute to better health.

Heat-and-serve meals

Heat-and-serve meals include canned soups, frozen pizzas and TV dinners. These types of meals were traditionally used in cases of emergency or as treats but today, with smaller household structures and lifestyle pressures, heat-and-serve meals have become popular solutions for preparing quick meals, particularly as many are easy to heat in the microwave.

Besides frozen and canned, many heat-and-serve meals are now sold chilled, bottled or in long-life form. Chilled soups, pasta dishes, frozen dinners and simmer sauces are big sellers on the Australian market.

10.1.5 Chicken nuggets are an example of a heat-and-serve meal.

Hands on

Make your own curry paste

Purpose

To use herbs and spices in cooking.

Curry pastes are made from a blend of many spices. Traditionally a pestle and mortar is used to ground the many spices used in this recipe.

Ingredients

½ cup white vinegar

⅓ cup vegetable oil

2 long fresh red chillies, deseeded, finely chopped

4 cloves garlic, crushed

1 tablespoon finely grated fresh ginger

¼ cup ground cumin

¼ cup ground coriander

1 tablespoon freshly ground black pepper

1 tablespoon garam masala

1 tablespoon black mustard seeds

1 tablespoon ground turmeric

1 teaspoon ground cinnamon

Steps

1. Place the vinegar, oil, chilli, garlic, ginger, cumin, coriander, pepper, garam masala, mustard, turmeric and cinnamon in a bowl and stir until well combined.
2. Place in a clean sterilised airtight container and smooth the surface.
3. Drizzle vegetable oil over the curry paste to prevent it from drying out.

FOOD IN FOCUS

Lean Cuisine

Lean Cuisine produces a nutritionally balanced, single-portion frozen meal that is convenient, as it only requires reheating. Their products tend to be low in energy, with most being 97 per cent fat-free.

Lean Cuisine has enhanced their brand with the Everyday Wellbeing range, which offers four meal variants that each help target specific areas of nutritional concern: protein, fibre, wholegrain and calcium. The Everyday Wellbeing range is designed to maintain a focus on the health-conscious consumer. The Everyday Wellbeing range comprises (nutrient issue targeted in brackets):

- Meatball and Bean Casserole (fibre)
- Chicken and Spinach Risotto (wholegrain)
- Creamy Chicken Pasta Bake (calcium)
- Beef Ravioli (protein).

10.1.6 Lean Cuisine is a balanced heat-and-serve meal.

Activities

1. Who would buy this product and why?
2. Is the product high or low in fat? How can you tell by looking at the package?
3. Which Lean Cuisine product would you expect be high in the following nutrients?
   - calcium
   - protein
   - fibre

Meal replacements

Breakfast beverages and bars

With so many Australians claiming lack of time as an excuse for not eating breakfast, breakfast bars and breakfast beverages have become popular. Breakfast bars and beverages usually contain more sugar, fat and less dietary fibre than packaged cereals and so dietitians recommend that they be used occasionally. For young children, cereal with milk is preferred over breakfast bars, as milk provides valuable nutrients required by children.

Weight control products

Some meal-replacement products, such as milk shakes, soups, bars and powders, promote weight loss. While initially they may lead to weight loss, these products can become boring and restrictive and weight may be regained. This is because the dieter may not have learned to make healthier food choices.

Many of these diet products also recommend thirty minutes of exercise a day. For many people, increasing their physical activity rather than dramatically changing their food habits can help control weight.

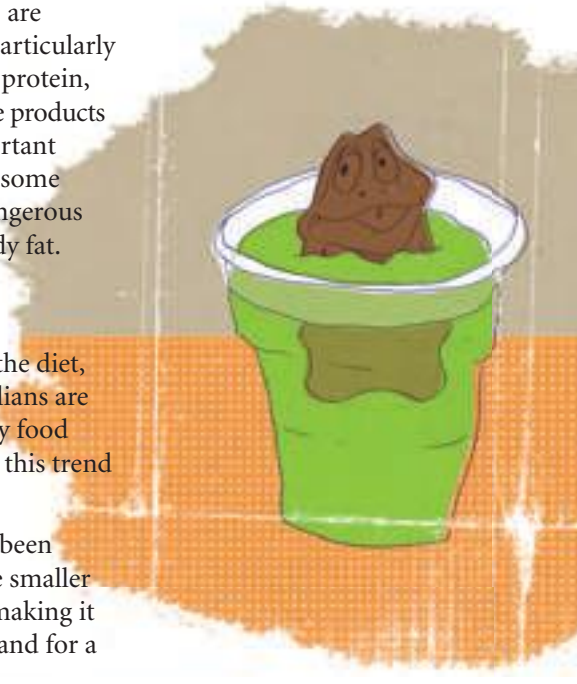
Some meal-replacement products are designed to increase body mass, particularly muscle size, because of their high protein, vitamin and mineral content. These products are popular with males. It is important to note that excessive amounts of some vitamins and minerals may be dangerous and excess protein is stored as body fat.

Snack bars

Snacking is an important part of the diet, but research indicates that Australians are replacing meals with snacks. Many food manufacturers have responded to this trend by producing snack bars.

While chocolate bars have always been popular snacks, they have become smaller and available in bulk packaging, making it tempting to always have one on hand for a treat, or to place in lunch boxes.

Did you know that the French rarely snack, preferring to eat three sit-down meals a day?



The first sports drink, Gatorade, was developed in the 1960s for the Florida Gators football team.

Web Destination

Cereal and muesli bars are also popular snacks. Care must be taken to examine the sugar content of these products, as many contain high quantities of glucose and honey, which can cling to the teeth and so contribute to tooth decay. Added ingredients such as chocolate and nuts can also make such bars high in fat.

Snack bars and drinks containing a caffeine extract called guarana have become popular with children and teenagers. They are marketed as energy boosters, as caffeine is a stimulant, providing a short, sharp boost of energy. Caffeine in high levels can also increase blood pressure, contribute to anxiety, dehydration and disturb sleep.

Electrolyte replacement drinks

During strenuous exercise the body loses fluids, making it harder for a person to cool down and keep performing well. Electrolyte drinks help to replace and retain the fluids and the electrolytes (sodium, potassium, chloride) and salts lost through sweating. These drinks also contain some carbohydrate, usually glucose, to provide energy.

10.1.8 Today sports drinks are often consumed at times other than when exercising.

While originally intended for athletes, electrolyte drinks are now marketed to the general public. They are advertised as thirst quenchers and energy boosters and come in many flavours that appeal to the young. These drinks should be drunk in moderation, as large quantities of electrolytes such as sodium can contribute to health problems such as hypertension.

Functional foods and ingredients

Functional foods are those that have been modified to provide extra health benefits beyond the traditional nutrients they already contain. There are numerous varieties of functional foods on the market, each aiming to provide different health benefits.

10.1.7 Food and functional variety

Food	Functional variety
Milks, yoghurts and cheeses	low fat, high calcium, cholesterol free, iron enriched, fermented
Breads and cereals	high fibre, cholesterol reducing, vitamin and iron enriched
Margarine	cholesterol reducing, fat reduced, salt reduced, rich in omega 3
Jams, jellies, spreads	low kilojoule, fat reduced

FOOD IN FOCUS

Dairy Farmers HeartActive

Coronary heart disease is the most common cause of death in Australia. To maintain a healthy heart it is important to exercise regularly and to have a good diet and a healthy blood pressure and cholesterol level.

Dairy Farmers HeartActive is a low-fat, calcium-rich milk that is enriched with plant sterols. Plant sterols occur naturally in foods such as nuts, seeds, legumes, fruits and vegetables. They help to lower cholesterol levels, as plant sterols work by blocking cholesterol absorption in the intestine.

Activities

1. What is the most the most common cause of death in Australia?
2. Why would Dairy Farmers HeartActive be classed as a functional food?
3. Where can you naturally find plant sterols?
4. What can be a benefit of consuming a high-calcium milk?
5. What can be a benefit of consuming a low-fat milk?

10.1.9 Image courtesy of HeartActive. HeartActive is a registered trade mark of National Foods Milk Limited.

UNIT REVIEW

Looking back

1. Define the term 'organic food'.
2. Outline the basic principle behind genetic modification of food.
3. Give two examples of prepared fresh foods.
4. Define the term 'spice'.
5. Identify three meal replacement products available on the market.
6. Outline the role of electrolyte drinks.
7. Define the term 'functional food'.

For you to do

8. Find a picture of functional food and outline the health benefits that may be gained from using the product.
9. Design your ideal snack bar. Give reasons for your design.
10. a Use the internet to find some Australian native plants that can be used as herbs and spices.
    b Find a recipe using a native herb or spice.

Taking it further

11. a Interview an older member of your community such as a grandparent, your parents, a senior from the local retirement village or a neighbour to discover the foods they ate when they were your age.
    b Write a one- to two-page report on your findings, comparing their food intake to yours today.
    c Prepare a dish from the era of the member you interviewed.
12. a Purchase a heat-and-serve meal such as chilled lasagne or a prepared soup.
    b Find and prepare a recipe that makes the same product but from raw ingredients.
    b Compare and evaluate the:
    - time taken
    - ingredients used
    - quantity produced
    - flavour
    - appearance
    - cost.

10.2

Trends in dining and food service

The first McDonald's opened in Australia in 1971 in the Sydney suburb of Yagoona. The second was in Carringbah in Sydney. McDonald's selected areas that had large populations of young people.

Despite the huge array of cooking books, cooking shows and cooking appliances available today, Australians are eating out and ordering in meals more than ever before.

Establishments and levels of service

Restaurants, cafés, canteens, bistros and fast-food and takeaway stores are examples of establishments providing the service of preparing, cooking and serving food to customers. These form part of the hospitality industry and each provides different types of foods and level of service.

Takeaway service

Takeaway establishments offer quick service and relatively inexpensive meals and snacks in a throwaway container. Some provide seating to dine, while others provide drive-through and home deliveries.

Prior to the 1960s, the milk bar and the fish and chip shop were the most common takeaway establishments but today there are many different types of takeaways selling a variety of foods such as hamburgers, pizza and stuffed potatoes.

Most takeaway outlets are located at convenient locations near workplaces and entertainment venues, in shopping centres and even in service stations. Many restaurants and cafés also offer takeaway and home delivery services.

RECIPE

TUNA SUSHI
p. 357

FOOD IN FOCUS

10.2.1 Oporto burger

Oporto

The first Oporto restaurant was opened in North Bondi, New South Wales, in 1986, by António Cerqueira, a Portuguese immigrant. Portugal's second largest city, Porto, is the inspiration for the name 'Oporto'.

Today there are over 100 stores mostly in Australia but also some in New Zealand, United Kingdom and the United States.

Oporto has three types of store: drive-through, shopping centre and shopping strip stores. Some of these restaurants are called Oporto Express and offer a smaller range of products. Customers can dine in at some of their venues or take food away.

Oporto is known for its grilled chicken Bondi Burger and trademark chilli sauce, which is a Portuguese piri-piri sauce made from chilli, ginger, lemon and garlic. The Bondi Burger comes in three sizes, small (one breast fillet on a smaller burger bun, regular (two chicken breast fillets on a larger burger bun) and big (three chicken breast fillets on a large burger bun). The Bondi Burger also comes in a non-chilli version called the Norm Burger.

In addition, the menu offers rolls and wraps with chicken as well as sides such as salads, mashed potatoes and gravy, and desserts such as mousse.

All Australia Oporto stores offer halal chicken meals.

Oporto is a wholly owned Australian company. Beach culture is incorporated into the restaurant's identity, reflecting the fact that the first restaurant was opened in Bondi Beach. Beach culture can be seen in Oporto's logo, a sun, and advertising images of beach culture. Oporto uses colloquial words in the names of its products, such as Brekkie Burger, Norm Burger and Kiddo Burger, reflecting Australian culture and language.

The franchise distances itself from the perception that fast food is unhealthy by promoting its chicken as 'fresh not frozen, grilled not fried'.

Activities

1. Where does the name Oporto come from?
2. Why has Oporto become a multinational Australian company?
3. What is Oporto's trade mark?
4. What does Oporto claim about the nutritional value of its food?
5. Who do you think Oporto targets through its use of advertising? Give reasons for your choice.

10.2.2 An outdoor cafe

PP Web Destination

For safety reasons, dining venues have a set number of seats they can offer in both their indoor and outdoor dining areas. This is determined by local council.

The first coffee house was believed to have been established in Istanbul in the year 962.

Dining out

Cafés have become popular in Australia, as they offer casual dining where a customer can enjoy a cup of coffee and sweet or light meal. Like its European counterpart, the café has become a social meeting place, with many located near workplaces and entertainment venues and in shopping centres.

Cafés operate long hours. Many open early to cater for breakfast and stay open until late in the evening. Most offer 'modern Australian' menus—modern versions of Australian classics—as well as dishes from a variety of other cultures.

The bistro is another popular dining venue. Often located in clubs and pubs, bistros offer a variety of food choices and relaxed, inexpensive dining

Restaurants have also increased in number and variety in Australia. Restaurants provide menus consisting of several courses. Modern Australian, Chinese, Italian, Thai, Mexican and Indian are the most popular cuisines but others, such as Japanese, Vietnamese and Moroccan, are increasing in popularity. In many suburbs and towns, the main streets, which were once designed for shopping, now house a string of dining establishments. Many of these dining venues also offer alfresco dining, where customers can enjoy eating outdoors.

Formal and buffet service

In the past, tables at home and at restaurants were set in a formal style. Tables would be set with appropriate cutlery and glassware and menu courses would be individually presented to each diner.

Today while formal service is still used by many households at dinner time and in many restaurants, less formal service is also commonly used at home and by many food service providers. It is not uncommon in many dining venues to use paper serviettes and dinner knives and forks for most courses rather than specific cutlery, such as dessert forks and fish knives and forks.

Australian families and many food service providers, such as caterers and bistros, commonly use buffet service particularly when feeding large numbers. This type of service—prepared foods are set on a table and guests help themselves—is casual and relatively easy to set up.

café: informal restaurant, offering a range of hot meals

RECIPE

THAI GREEN CURRY CHICKEN p. 358

10.2.3 Formal dining

Trends in table setting

A few decades ago Australians would set their fine bone china dinner set, crystal glassware and silver cutlery on a crisp white linen tablecloth for their formal dinners. These were served in the dining room and always ended with a cup of tea.

Technology and social changes have resulted in a wider selection of table setting options.

Crockery and cutlery that are microwave- and dishwasher-safe are now available and plastic items are commonly used for outdoor dining. Table-setting items from different cultures, such as chopsticks and pasta plates, are common in most households, while the coffee mug has replaced the tea cup in many cupboards. Wine glasses, too, are no longer reserved for formal dinners and while white china and white tablecloths are still popular, so are bright colours, prints and placemats.

Even the venue for family meals has changed. The formal dining room has been replaced by a more open-plan design combining the kitchen, dining room and family room, and often opening to an outdoor dining area. Family sit-down meals are increasingly being replaced by meals eaten individually at the breakfast bar or in front of the television or computer.

UNIT REVIEW

Looking back

1. List five different types of food service establishments.
2. Outline the service provided by takeaway establishments.
3. Name three types of dining out venues popular with Australians.

For you to do

4. You are about to move out of home into your own place. Make a list of the table setting equipment you would need to purchase.
5. Name your favourite eating establishment. Write a blog on why it is such a good venue.

Taking it further

6. Design your own modern food service establishment:
   - Choose a type of establishment.
   - Name your establishment.
   - Describe and justify its location.
   - Describe and justify the services it will provide.
   - Produce a professional-looking set menu.
   - Design a computer-generated logo that would help to identify your establishment.
   - Prepare and present a dish of your menu in a practical lesson.
7. Conduct a survey by asking each student in another class to list the favourite menu item from a takeaway venue.
   - Enter the results on a spreadsheet.
   - Produce a suitable graph that best reflects the result.

Trends in food presentation and food styling

10.3

We are drawn to food that looks interesting and appealing. Various techniques can help make food enticing.

Garnishing and decorating

Garnishes and decorations are ingredients that are usually placed last on a dish to provide a special finishing touch. Garnishes are used for savoury dishes and decorations for sweet dishes.

In the 1970s, a sprig of parsley garnished most savoury dishes, while whipped cream, strawberries, dusted icing sugar, canned fruits and chocolate shavings were common decorations for desserts. In the '80s and '90s, garnishes became more dramatic with the use of alfalfa, watercress, dill, tarragon and continental parsley, while desserts were decorated with kiwi fruit, fruit sauces and spun toffee.

Today, garnishes and decorations have become less dramatic. Chefs use simple fresh ingredients such as fruits, fresh herbs and liquids such as oils, vinegars and fruit sauces to highlight dishes and add flavour.

10.3.1 Attractive-looking foods appeal to our appetite.

Hands on

Make Thai-style garnishes

Purpose

To make a tomato rose, carrot flowers and a shallot curl.

Materials

firm tomato

carrot

shallot

vegetable peeler or sharp knife, chopping board, scissors, bowl of iced water

Steps

1. Cut the top from the tomato. Using a vegetable peeler or sharp knife, peel the skin from the tomato in one piece. Tightly roll the skin to form a rose.
2. Peel a carrot. Use a sharp knife to cut four wedges lengthways from the carrot. Thinly slice crossways to create flowers.
3. Cut the white bulb from the shallot. Cut the shallot into a 10-centimetre length. Using the scissors cut down the shallot to half way down. Continue cutting around the shallot into fine strips. To make the shallot curl, drop the shallot into a bowl of iced water

RECIPE

WHITE CHOCOLATE PANNACOTTA WITH RASPBERRY COULIS p. 359

10.3.2 Rules for garnishing and decorating

Garnishes and decorations should:

- have a function, for example adding height, such as parfait with strawberries and cream on the top

- be fresh, natural and of good quality, for example a glass with an orange twist on the edge

- complement the food, for example fish with a lemon wedge

- be simple and edible, for example a shallot curl on a plate of spring rolls

- add flavour and colour, for example croutons in soup

- suit the occasion and the dish, for example cake with cream, chocolate and other decorations

10.3.3 A traditional and a modern way of plating food

PP Web Destination

condiments: accompaniments to food such as salt, pepper, sauces

Traditionally, fish is served with a slice of lemon. This practice originated in the Middle Ages, when people believed that the juice would dissolve any bones accidentally swallowed.

If you place strawberry, chocolate or caramel ice-cream topping in a squeeze-top bottle you can make some interesting shapes on plates to decorate dessert dishes.

Plating styles

During the 1960s, a meal of meat and vegetables was placed on a plate in a pattern similar to that of a clock. The meat was placed at the 6 o'clock position and the vegetables arranged from 10 o'clock through to 2 o'clock. Sauces and salads were served separately while desserts were decorated with whipped cream and a glacé cherry.

In contrast, current plating trends are to create visual and dramatic impact by:

- using large and unusual plates and bowls
- selecting crockery that contrasts well with food—white is very popular
- stacking food high and arranging it in interesting ways
- serving sauces and **condiments** as part of a dish. These are often placed in a small bowl on the plate or drizzled onto the plate for effect.

The following design principles should be applied when plating food.

- Use contrasting colours. Colours should not clash or look too similar, and should keep food looking natural. Garnishes can add colour when a dish looks bland.
- Use a variety of shapes, for example round, whole potatoes served with carrot sticks. Like too many colours, too many shapes can be confusing.
- Use a range of textures, such as crispy chips served with soft, flaky fish.
- Have a focal point. This can be achieved by having one food sitting higher than another or by using a garnish.
- Keep balance and proportion. Food should not be overloaded or lost on a plate. The rim of the plate should be seen.
- Repeat an aspect of the design, such as a colour or shape. Garnishes often repeat an ingredient in a dish.
- Use clean, unchipped crockery and wipe off spills and drips before serving.
- Place the best side of the food facing up.
- Use portion-control techniques with tools such as ladles and cup measures.

UNIT REVIEW

Looking back

1. What is the role of a garnish or decoration?
2. Give three examples of garnishes and three examples of decorations.
3. In the 1960s, at what position was the meat placed on the plate?
4. List four design principles when displaying food.

For you to do

5. Which sauces traditionally accompany the following foods?
   - fish and chips
   - roast beef
   - roast pork
   - spring rolls
6. Give a reason why each garnish or decoration has been used on the following foods:
   - lemon twists on fried calamari
   - strawberry fan on vanilla ice-cream
   - croutons on French onion soup.
7. Modify the following dishes in order to improve their presentation:
   - steamed whole fish with mashed potato
   - vanilla ice-cream.
8. Using a labelled sketch, describe how you would present the following foods on a plate for a dinner.
   - mashed sweet potatoes
   - blanched green beans
   - oven-roasted tomatoes
   - chargrilled chicken breast.

Food styling and photography

10.4

Preparing a visual display of food is called food styling. A food stylist often works in conjunction with a photographer in order to get a perfect shot to meet the client's brief. Food styling is time-consuming but it creates an atmosphere that stimulates the appetite to encourage consumers to try the food. You see examples of food styling and photography in:

- recipe books and magazines
- newspaper articles
- advertisements for television, billboards and magazines
- brochures and leaflets
- posters and framed pictures
- web pages
- food labels and packages
- menu boards
- television shows.

When presenting foods, food stylists employ the basic design principles of variety in colour, texture and flavour. They also like to create themes; for example, food suitable for a children's birthday party may be displayed with streamers, balloons and a bright background. In food advertisements, food stylists usually repeat the colours of the food package being promoted in the background to help reinforce the product.

Getting the perfect shot when photographing food can be difficult. Lighting causes foods to dry out, shrink, sag and discolour, so food stylists employ some interesting techniques. Computer programs and digital cameras can now speed up the work of the photographer.

A stylist's tool kit will often consist of tapes, tape measure, tacks, pins, clips, elastic bands, safety pins, glue, matches, scissors, scalpels, eye droppers, syringes, wire, brushes, touch-up paints and other items to help in setting up the food.

Tricks of the trade

- A whole roast chicken is often only partially cooked to keep it plump and juicy. It is then browned with a coat of soy sauce and a blowtorch crisps up the edges. A final coat of oil or liquid glucose gives a hot, freshly cooked shine. Sometimes mashed potato is placed under the skin to help plump the chicken up further.
- A hamburger shoot involves treating the meat in the same manner as chicken and then finding the perfect bun, tomato slices and lettuce leaves. Sometimes extra sesame seeds are glued onto the bun. Layers of plastic may be used to separate the layers and pins to hold everything in place. Tomato sauce is mixed with tomato paste to stop it running and placed exactly where desired with a syringe.
- Ingredients for stir-fries are usually individually cooked, then tossed in a sauce and painstakingly arranged with tweezers to look random.
- In breakfast cereal advertisements, white glue or cream often replaces milk to prevent cereal looking soggy, while plastic ice cubes are used instead of real ice in soft drink commercials.
- Ice-cream melts under lights so coloured mashed potato or a mixture of corn syrup, margarine and icing sugar may be used.
- Meat pies are often cooked with a filling of mashed potato to make them easier to slice (usually with a scalpel to get a perfect cut). Once the filling is removed, chunks of meat are arranged neatly in place.
- Swiss cheese is usually given extra holes with little round cutters.

If the food displayed on a food label is not exactly the same as is in the package then the term 'serving suggestion' must be used, otherwise it is false advertising.

10.4.1 A food stylist working with a food photographer

10.4.2 A food stylist at work

Practitioner focus

Theresa Stastny—food stylist and food consultant

Theresa has lived in Australia now for over fifteen years, although her food styling career started in Chicago USA after a rewarding career as a chef. Today she works internationally as a food stylist, not only in Australia but also in the United States and China.

Her background as a chef has helped her immeasurably with the huge variety of projects that come up in the food styling and consulting world. She has been able to develop a folio of work that features pastry work, specialty ice-cream and chocolate projects. She guards many of her tricks of the trade, particularly her fake milk and ice-cream recipes.

Theresa is well supported by broad experience in all aspects of the food industry, involving recipe development and consulting for a wide range of companies, some of which include Heinz, King Island Dairies, Patties, Ocean Spray, Ultra Slim, SPC, Lowan Wholefoods and Don Smallgoods. She has worked on several television commercials for clients such as Uncle Toby's, Bulla and Coon.

Styling and consulting for such a diverse array of food companies and assisting with various new products in development provides Theresa the perfect opportunity to stay abreast of the latest trends in this exciting and ever-changing industry. Her passion for the beauty of food started at a very young age. Her mother always told her not to play with her food … good thing she didn't listen.

Source: Adapted from information found at http://www.foodstylist.com.au/about.html

10.4.3 A sample of Theresa's work

Hands on

Make chocolate butterflies

Purpose

To add a new twist to a traditional recipe.

Cup cakes are very fashionable. Decorate some white or pastel coloured iced cupcakes with this chocolate piping technique.

Materials

125 g dark chocolate melts

12 iced cup cakes

2 baking trays, non-stick baking paper, saucepan, heatproof bowl, metal spoon, piping bag with 5 mm plain nozzle or a sealable plastic bag with a hole cut in one corner

Steps

1. Line baking trays with non-stick baking paper.
2. Place the chocolate in a heatproof bowl over a saucepan half-filled with simmering water (make sure the bowl doesn't touch the water). Use a metal spoon to stir until chocolate melts and is smooth.
3. Transfer to a piping bag. Pipe 24 small heart shapes onto 1 tray to make wings.
4. Pipe twenty-four 2-cm lines, each ending with a dot, onto the other lined tray to make antennae. Set aside until set.
5. Insert 2 wings in the iced cup cakes. Pipe melted chocolate between wings to make a body. Insert 2 antennae into the top of each body.

UNIT REVIEW

PP Web Destination

Looking back

1. Define the term 'food styling'.
2. Who does the food stylist usually work in conjunction with?
3. List six situations in which food styling is used.
4. Describe four common techniques used in food adverting.

For you to do

5. Select a photo of a food that has been styled for a advertisement, recipe book or web page. Analyse:
   - a. the design principles employed
   - b. the theme or mood that has been created
   - c. the techniques employed
   - d. how the styling may influence the viewer.
6. You have been employed as a food stylist for a web page for a healthy salad fast-food chain.
   - a. List tools you would have in your food stylist's tool box.
   - b. Describe how you would style a salad for one of the photos on the web page.

Taking it further

7. You have been commissioned to produce a recipe card to promote the use of fresh fruits and vegetables.
   - Find a suitable recipe.
   - Prepare the recipe.
   - Style and photograph the dish.
   - Produce the recipe with the photo at the front and a recipe at the back.
   - Email the recipe card to a friend or produce a recipe book of the class work.

10.5.1 The traditional wedding cake is changing to something new and unusual.

Sliced raw fish is called sashimi, as distinct from sushi, which is rice rolled around a dried and pressed layer of seaweed.

10.5.2 Bomboniere of sugared almonds

Traditionally five sugared almonds are included with the bomboniere gift. Each almond represents one of the following wishes for the child that is christened or for the couple that has been married—happiness, health, wealth, fertility and longevity.

Accepting new food trends

Several factors affect whether individuals will accept a new food trend.

Personal experiences

Food habits are established early in life and can be difficult to change. Bad experiences with food, such as food poisoning or being forced to eat a food, can mean that you will not even try a particular food no matter how appetising it looks. Good experiences may encourage you to adopt new food trends. For instance, most people are willing to try new chocolate bars, as chocolate is often associated with good times.

Cultural taboos and beliefs

Australians enjoy foods of many different cultures. There is still resistance, however, to some cultural foods, such as Japanese raw fish, French frogs' legs and snails, while we strongly believe that some meat, such as from whales, should not be consumed.

In some cultural groups, certain foods may be restricted or banned. For example:

- Muslims do not eat pork or drink alcohol.
- Seventh Day Adventists are vegetarian and avoid drinking tea, coffee and alcohol.
- Traditional Jews do not eat shellfish or pork products and have strict laws in relation food preparation.

Tradition

Cultural backgrounds strongly influence food traditions, although some food traditions in Australia are slowly changing.

Weddings

The Anglo-Saxon tradition is to celebrate weddings with an iced fruitcake. Today many couples like to demonstrate individuality by selecting cakes that are non-traditional, such as novelty cakes, continental cream-filled sponge cakes, chocolate cakes or the French tower of profiteroles.

Finger food menus have become popular for weddings in preference to the sit-down function menu of several courses. Many couples now like to give their guests the traditional European gift of a bomboniere with sugared almonds as a thankyou gesture.

Christmas

Traditional Christmas foods are changing. It is not uncommon to find Christmas cakes of other cultures such as the Italian panettone or the German stollen being sold alongside mince tarts and fruitcakes. Even the traditional hot Christmas lunch of ham or turkey and hot plum pudding with custard is being replaced by cooler foods such as cold meats, seafood, salads, trifle and pavlova. Often the lunch is eaten outdoors to take advantage the Australian summer. Traditional hot and heavy Christmas foods are now commonly enjoyed during July, when many 'Christmas in July' functions are held.

For many families, occasions such as Christmas mean combining the traditional foods from different cultures. For example, many families with Italian backgrounds have lasagne followed by the Anglo-Saxon tradition of a roast as a main course.

RECIPE

BUTTERMILK PANCAKES p. 360

FOOD IN FOCUS

Cultural traditions

Josephine, Tom, and Ali all are in Year 10 at the same school. All were born in Australia but each comes from a different cultural and religious background.

Josephine's background is Greek and Easter is taken very seriously in her family.

They avoid meat and dairy products during Lent, and on Good Friday they eat fish. On Easter Sunday they eat chocolate eggs as well as coloured boiled eggs and Greek Easter biscuits. Lamb is usually on the menu at the big family lunch.

Ali has a Lebanese Muslim background. During Ramadan he does not eat during daylight to remind him what it would be like to go hungry. The family all get up before daylight to have breakfast and then gather at night for dinner. At the end of Ramadan his family enjoys the company of others and hold several parties where a lot of food is prepared such as barbecued meat and Lebanese sweets.

Tom is of Chinese origin. For Chinese New Year his family like to eat and enjoy the entertainment provided by a Chinese restaurant, where they enjoy a banquet of a variety of dishes including duck and pork dishes and of course the whole family read their fortune cookies.

Activities

1. What three cultural groups are represented in the Food in Focus?
2. Identify two religious events.
3. Identify a traditional food eaten by Tom.
4. Why would pork not be on the menu at Ali's home.

UNIT REVIEW

Looking back

1. Give an example of a religion and a food that it bans.
2. What is the traditional wedding cake of the Anglo-Saxon culture?
3. What is a bomboniere?

For you to do

4. Choose a festive celebration that is celebrated by your family. Describe the traditional foods served and the roles that family members undertake in preparing the feast.
5. Sketch an idea for a modern wedding cake.
6. Make up a quote for Chinese fortune cookies.

Taking it further

7. Research the history of a festive tradition of a particular culture and produce a story book to teach young children about this tradition.

10.6

Marketing and food trends

RECIPE

MELTING MOMENTS
p. 361

Most companies promote new foods through an integrated combination of advertising, in-store promotions, public relations and sampling. This allows consumers to hear about products in a number in different ways, and to try before they buy!

Marketing is more than just advertising a product. For a new product to become a new food trend it must be:

- aimed at particular consumers
- a product consumers need or want
- easily available
- affordable
- suitably promoted.

Promotion is used to inform consumers about a new product and to persuade them to purchase it. Promotion is planned to gain the attention of the consumers most likely to buy their products. For example, a women's breakfast cereal is often advertised in a women's magazine, while many children's breakfast cereals are advertised using fun television characters. Techniques such as jingles, slogans, celebrity endorsements and references to happier lives are common in food advertisements.

Forms of promotion are:

- advertisements in newspapers and magazines and on billboards, radio, television and the internet
- leaflets and brochures
- point-of-sale displays
- sponsorship
- sample giveaways
- in-store demonstrations
- competitions.

The media and food trends

The media greatly influence food trends. On television and radio there are many food and cooking shows. Newspapers and magazines also carry lots of articles on food and nutrition.

Celebrities and celebrity chefs are commonly used to demonstrate how easily modern foods can be prepared. They introduce people to new recipes, ingredients, cooking and food products. Sometimes they also discuss health issues. Food companies sponsor many of these shows.

PP Web Destination

10.6.1 Celebrity chefs and competitions show how easy it is to cook modern food.

FOOD IN FOCUS

Woolworths marketing strategies

'Woolworths Stupendous Bargain Basement' first opened in the cramped basement of the Imperial Arcade in Sydney 1924. In 1957, it opened its first supermarket at Dee Why in Sydney and today there are over 750 stores across Australia.

Woolworths advertises through television, radio, newspapers, catalogues, their website and in-store. In 1987, Woolworths launched the successful concept of 'The Fresh Food People'.

In 2008, Woolworths started a new campaign, 'Australia's Fresh Food People'. The advertisements depicted Australians from different cultural backgrounds engaging in activity relating to fresh food, such as a boy trying to grow an avocado from a seed, an older man getting his watermelon home from the supermarket, and a couple protecting their vegetable patch from cockatoos. This campaign introduced a new jingle, replacing 'We're Woolworths the Fresh Food People' with 'We Are, We Are, Fresh Food People, Australians are Fresh Food People'.

In 2008, Woolworths replaced their logo, a green tinted icon representing the 'W' in Woolworths and the addition of a stylised leaf to suggest fresh produce. However, the company's slogan, 'The Fresh Food People' remained a key part of the new logo. The company introduced these changes to make its branding more modern and more likeable.

Woolworths continues to promote healthy foods and meal ideas in store, on its website and in its magazines. Woolworths.com.au tells customers what produce is in season, offers healthy recipes and provides healthy-eating advice from Rosemary Stanton, one of Australia's best known nutritionists. Woolworth's free *Fresh* magazines are a further rich source of tips, recipes and health and nutrition information.

Since 1996, Woolworths has offered its customers a number of incentives for purchasing at their stores by subsidising petrol prices at Caltex Woolworths petrol stations and their Everyday reward card, introduced in 2008 stores, eliminates the need for shoppers to retain paper coupons for fuel purchases but allows Woolworths to record purchases made by customers to offer them relevant promotions and for studies in demographics and marketing.

Activities

1. How does Woolworths advertise?
2. What is Woolworths current slogan?
3. What is the current Woolworths jingle?
4. What is promoted on the Woolworths website?
5. What is the Woolworth's *Fresh* magazine?
6. How does the reward card help Woolworths?

UNIT REVIEW

Looking back

1. Identify four different forms of media.
2. List four forms of promotions used in marketing foods, apart from advertising.
3. What do you think Australians gain from watching cooking shows?

For you to do

4. You want to take the country by storm with your healthy ice-cream for kids. Market this product by:
   - describing it
   - listing places where it would be sold
   - identifying the recommended retail price
   - developing a slogan
   - selecting and justifying a celebrity to endorse it
   - justifying the forms of media you would employ to advertise it.

Taking it further

5. Observe a current television cooking show or video and discuss the food trends portrayed.
6. Collect two advertisements for food from magazines or newspapers. Assess the:
   - product being advertised
   - audience the advertisement is aimed at
   - message(s) the advertising is trying to communicate.

10.7 Additional content: marketing and current food trends

10.7.1 Food styling trends are constantly changing and evolving.

Marketing teams research the market in order to develop and promote appropriate products for particular consumers. The four Ps of marketing are product, price, promotion and place. In the case of heat-and-serve meals, the four Ps are:

- product—targeted at Australia's rising population of single adults and busy working families
- price—commonly discounted with regular specials and competitive with takeaway meals
- promotion—samples and taste testing followed up with prominent advertising in the media
- place—easily available at supermarkets, convenience stores and service stations.

Marketing, the media and food styling

The print and electronic media, such as television, magazines, newspaper and catalogues, use food styling and photography to market products. Food styling tempts customers to buy the product that is being promoted. Many television cooking shows are sponsored by food companies and many magazines carry enticing colour photographs of food dishes promoting a food product. Often celebrities are also involved in the marketing campaign. Computer technology such as digital cameras and related computer software are now commonly used in marketing campaigns to obtain the perfect image required for the product.

UNIT REVIEW

Looking back

1 What are the four Ps of marketing?

2 List three examples of print media.

3 What is the purpose of food styling?

For you to do

4 a Design your own innovative food product or food service—for example seaweed pizza or a dining venue where staff serve hamburgers on roller blades.

b Address the four Ps of marketing to ensure your food trend will be a success.

c How can you determine whether your marketing plan has been a success?

Taking it further

5 Use a camera and related computer software to produce a finished visual image of styled foods, for example:

- an advertisement for a new food product
- a supermarket catalogue with sale prices
- a web page with images of recipe directions
- a calendar with different recipes and health hints for each month.

Chapter review

Looking back

1 Define the term 'organic food'.

2 Outline one advantage and disadvantage of organic foods.

3 Define the term 'genetically modified food'.

4 Outline one advantage and disadvantage of genetically modified foods.

5 Give two examples of meal replacement products.

6 Name two herbs.

7 Define the term 'functional food'.

8 Give an example of a functional food.

9 What is the difference between a garnish and a decoration? Give an example of each.

10 List four places where you could see the work of a food stylist.

11 List five items you would expect in a food stylist's tool box.

12 Describe three techniques a food stylist may use when shooting a television commercial.

13 Identify four different forms of media.

14 Give five examples of how food products can be promoted.

For you to do

15 You and your friends are planning on going away for the week. Your accommodation has a microwave and a stove. List some heat-and-serve foods that you can purchase at the local supermarket. Give reasons why you would purchase heat-and-serve foods.

16 You notice a friend constantly drinking electrolyte replacement drink when they are thirsty throughout the day. Discuss the advantages and disadvantages of these drinks in this situation.

17 What advice would you give a parent when choosing muesli bars for their children to take to school?

18 Compare and contrast the benefits of takeaway service with restaurant dining.

19 Discuss how table setting has changed in comparison with past decades.

Taking it further

20 Plan a wedding menu for a sit-down dinner.

21 Write a radio script to promote a new breakfast cereal by the Penna Company called 'Honey Bliss'. Include a description of the product and indicate where it can be purchased.

22 Make a list of celebrities and the products they promote.

RECIPES

Chocky rocks

Making these biscuits will challenge your safety and hygiene skills.

Preparation time 20 minutes
Cooking time 20 minutes
Serves 2

Ingredients

125 grams butter, softened at room temperature
⅓ cup castor sugar
1 egg
⅓ cup sultanas
⅓ cup choc bits
1 cup self-raising flour, sifted
2 cups corn flakes

Method

1. Set oven at 180°C. Line two biscuit trays with baking paper, or spray trays with cooking spray.
2. Using electric beaters, beat butter and sugar until creamy.
3. Add egg and beat until combined.
4. Using a wooden spoon, stir in sultanas and choc bits, and then sifted flour in two batches.
5. Place corn flakes in a large bowl. Place rounded teaspoonfuls of biscuit mixture into the corn flakes and roll lightly with hands to coat.
6. Place biscuits 5 centimetres apart on tray.
7. Bake in oven for 20 minutes or until golden.

Questions

1. Explain the importance of washing hands before and throughout the preparation of the biscuits.
2. Identify one important safety tip for using electric beaters.
3. Why are the biscuits placed so far apart on the tray?
4. Why are some ingredients mixed in using a wooden spoon rather than electric beaters?

Ginger beer

This recipe simulates the action of fermentation. Note that the ginger beer will need to be made in two stages.

Stage 1 Ginger beer plant

Preparation time 10 minutes plus standing time
Serves whole class

Ingredients

1 cup sugar
1 tablespoon ground ginger
juice 2 lemons
900 millilitres water
8 heaped teaspoons sugar (extra)
8 teaspoons ground ginger (extra)

Method

1. Mix the cup of sugar, tablespoon of ground ginger, lemon juice and water together and allow to stand for three days.
2. Pour off nearly all the liquid, and feed the plant daily for the next seven days with 1 teaspoon each of sugar and ginger.

Stage 2 Ginger beer

Preparation time 10 minutes
Cooking time nil
Makes 10 litres

Ingredients

5 cups boiling water
5 cups sugar
1 cup lemon juice
ginger beer plant
3 teaspoons ground ginger
9 litres cold water

Method

1. Put boiling water and sugar into a large tub and stir with a wooden spoon until sugar is dissolved.
2. Add lemon juice and ginger beer plant. Stir well.
3. Add ginger and cold water. Stir well and cover. Leave for 2 hours, then stir again. Cover and stand for 24 hours untouched.
4. Strain liquid through a fine cloth, and bottle. Use within three days.
5. Put sediment back into a jug. This forms the base of the ginger plant and can be reused simply by feeding with 1 teaspoon of ginger and 1 teaspoon of sugar as directed in Stage 1.

Questions

1. Why was the ginger beer plant made?
2. Why was the plant 'fed' every day with more sugar and ginger?
3. Did you like the taste of the ginger beer? Why do you think it tastes different from commercial ginger beer?

Dried apricot jam

This recipe contains two methods of food preservation.

Preparation time 10 minutes (plus overnight soaking time)
Cooking time 45 minutes
Serves 2

Ingredients

125 grams dried apricots
¾ cup water
1 teaspoon lemon rind, grated
½ cup orange juice
1 tablespoon lemon juice
⅔ cup sugar
¼ cup slivered almonds

Method

1. Cut the apricots into thin strips. Combine with water in a bowl, cover and stand overnight.
2. The next day, combine the apricots, water and rind in a saucepan. Bring to the boil and reduce the heat. Simmer uncovered for 10 minutes, or until the apricots are soft.
3. Add juices and the sugar, stirring constantly without boiling until the sugar is dissolved.
4. Bring to the boil, then reduce heat to simmer. Simmer uncovered for 30 minutes until the jam jells when tested.
5. Remove from the heat. Add almonds.
6. Pour into hot sterilised jars. Seal when cold.

TIP: Place a saucer in the refrigerator until cold. Place a teaspoonful of hot jam on the cold saucer, leave for a moment and then push the drop of jam with the tip of your finger. If the blob of jam wrinkles,it has jelled or set.

Questions

1. On which two principles of food preservation is this recipe based?
2. What other dried fruit could be used in place of apricots? Are there any other ingredients you would substitute?
3. Why do the jars need to be sterilised?

TIP: To sterilise glass jars, wash jars and lids in hot, soapy water. Rinse in hot water and dry (jars only) in the oven at its lowest temperature. This will take approximately 30 minutes. This could be done while the jam is cooking on the stove.

Tomato relish

In this recipe the tomatoes are preserved by the addition of vinegar, which alters the pH level.

Preparation time 20 minutes
Cooking time 40 minutes (less if using a microwave)
Makes 4 small jars

Ingredients

750 grams ripe tomatoes, peeled and chopped
500 grams onions, sliced
1 cup sugar
1¼ cup malt vinegar
2 teaspoons flour
2 teaspoons curry powder
pinch cayenne pepper
2 teaspoons mustard powder
2 teaspoons salt

Method

1. Place tomatoes and onions into a large saucepan with the sugar. Add vinegar and simmer uncovered until thick (approximately 30 minutes).
2. Drain off half a cup of the juice and blend remaining ingredients into this. Add this mixture to the saucepan.
3. Stir until boiling, then simmer for 5 minutes.
4. Bottle in sterilised jars (see page 287) and seal when cool.

TIP: To peel tomatoes, carefully cut out the core (the part at the top where the stalk joins the tomato) and mark a cross on the bottom with a knife. Place the tomatoes into a saucepan of boiling water for 10 to 15 seconds and remove using tongs. Plunge into a bowl of iced water. The skin should now pull away easily from the tomatoes; use a paring knife to lift the skin.

Questions

1. Why are the remaining ingredients not mixed into the hot tomato mixture?
2. Suggest a meal the relish might accompany.
3. Using the requirements outlined in the labelling section of this chapter (see page 29), make a label for your jars of relish.

Chicken and hokkien noodle stir-fry

This recipe has it all—flavour, texture, colour and aroma!

Preparation time 10 minutes
Cooking time 15 minutes
Serves 4

Ingredients

- 2 tablespoons oil
- 1 clove garlic, crushed
- 1 teaspoon fresh ginger, grated
- ½ teaspoon bottled chopped chillies (optional)
- 1 chicken breast, thinly sliced
- ¼ red capsicum, sliced
- ¼ green capsicum, sliced
- 1 stalk celery, sliced
- 1 carrot, thinly sliced
- 3 shallots, sliced diagonally
- 8 cobs baby corn
- 125 grams hokkien noodles
- 1 tablespoon soy sauce mixed with 2 tablespoons water

Method

1. Heat oil in wok.
2. Add garlic, ginger and chillies and heat until aromatic.
3. Add chicken, and stir-fry until golden.
3. Add all vegetables and stir-fry for 4–5 minutes.
4. Prepare noodles by placing in a bowl of boiling water and separating.
5. Add noodles and soy sauce mixture to wok. Stir to combine, reduce heat and cover for 2 minutes before serving.

Questions

1. Write a recipe review of this dish that would be suitable for a food magazine. Be sure to mention the texture, colour, aroma and taste.
2. Explain three alterations you could make to the ingredients or serving of this dish.
3. Suggest a dessert that would be suitable after such a meal.

Stained glass biscuits

This recipe uses boiled lollies, which result from crystallisation.

Preparation time 1 hour (recipe could be prepared over two lessons)
Cooking time 12 minutes
Serves 2

Ingredients

- 150 grams butter, cubed and softened at room temperature
- ½ cup icing sugar
- 1 egg
- 1 teaspoon vanilla essence
- ⅓ cup custard powder
- 2 cups plain flour
- ¼ cup self-raising flour
- 200 grams boiled lollies
- beaten egg for glazing

Method

1. Line two baking trays with baking paper or spray with cooking spray.
2. Beat butter and sugar with electric beaters until creamy.
3. Add egg and vanilla and beat until fluffy.
4. Add custard powder and beat.
5. Using a wooden spoon, stir in sifted flours.
6. Turn mixture onto a lightly floured board and knead until smooth.
7. Roll out to a 3-millimetre thickness. Refrigerate for 15 minutes or until firm. Meanwhile, preheat oven to 200°C.
8. Divide lollies into colour groups, place in separate plastic bags and crush using a rolling-pin.
9. Take the dough from the refrigerator and cut into rounds using a large scone cutter. Use smaller cutters to cut small shapes from within these circles. Place biscuits on the baking tray. Cut-out sections can be re-rolled and used.
10. Glaze the biscuits with beaten egg. Fill the cut-out section with a different coloured crushed lolly.
11. Bake for 5–6 minutes or until lollies melt.
12. Cool on tray for 10 minutes, then remove to a wire rack.

TIP: Do not allow the egg glaze to run into the cut-out sections or the stained glass will be cloudy.

Question

Would other types of lollies such as jelly beans or jersey caramels work in this recipe? Explain your answer.

Dreamy fudge

This recipe is quick to make and demonstrates the smooth texture of a stirred crystalline mixture.

Preparation time 15 minutes
Cooking time 20 minutes (plus standing overnight)
Serves 2

Ingredients

- 1 × 395 gram can condensed milk
- 1 cup firmly packed brown sugar
- 125 grams butter, chopped
- 200 grams dark chocolate, finely chopped
- 2 tablespoons liquid glucose
- ¾ cup pistachio kernels or raisins (optional)
- 1 teaspoon instant coffee dissolved in 30 millilitres boiling water (optional)

Method

1. Line the base and sides of a 20-centimetre square cake tin with baking paper, allowing a 3-centimetre overhang on all sides.
2. Stir together condensed milk, brown sugar, chopped butter and glucose in a microwave-safe glass bowl. Microwave uncovered on medium high for 6–8 minutes, stirring every 2 minutes with a wire whisk or until mixture begins to boil.
3. Microwave mixture for a further 3–4 minutes on medium high, stirring every minute with a wooden spoon until fudge is thick, golden and boils rapidly.
4. Very carefully place the bowl on a board and set aside for 1 minute or until the bubbles subside.
5. Add chocolate and stir until the chocolate melts and the mixture is smooth. Stir in pistachios or raisins and/or coffee if desired.
6. Carefully spread mixture evenly into prepared pan. Set aside for 3–4 hours (or overnight) until firm. Remove from pan, wrap in baking paper and store covered in the fridge. Cut into small pieces to serve.

Questions

1. Stopping the microwave and stirring frequently is a feature of this recipe. Why?
2. It was necessary to be extremely careful when handling the hot mixture. Explain the first aid procedures you would apply if the hot mix came into contact with your skin.

Vegetarian sushi

This is a tricky dish with the reward in the presentation.

Preparation time 30 minutes (recipe may be prepared over two lessons)
Cooking time 15 minutes
Serves 2

Ingredients

- 2 cups short grain rice
- 2 cups water
- 1 Lebanese cucumber
- ½ medium carrot
- ½ medium avocado
- 1 slice Sanitarium Soy Healthy Garlic and Herb Soy slices (optional)
- 3 tablespoons water (extra)
- 3 tablespoons rice vinegar
- 1 tablespoon sugar
- 5 sheets toasted nori
- soy sauce for dipping

Method

1. Place rice and water in a saucepan and bring to the boil. Cover with lid, reduce heat to low and cook for 10 minutes.
2. While rice is cooking, cut cucumber, carrot, avocado and soy slices into matchstick slices.
3. When rice is cooked and has cooled slightly, mix in extra water, rice vinegar and sugar.
4. Place a sheet of nori on a sushi mat or use a clean, firm cloth placemat. Spread half of the rice evenly over the nori.
5. Layer one slice each of the vegetables and soy slice at one short end of the nori.
6. Carefully roll the nori, using the mat to assist. Make sure the vegetables are in the centre of the roll.
7. Wrap in plastic wrap and chill before cutting into eight rounds. Repeat the process with other sheets of nori.
8. Serve with soy sauce to dip.

Questions

1. What method of cooking rice has been used in this recipe?
2. What is the origin of nori?
3. What other fillings could be appropriate for this classic Japanese dish?
4. Suggest innovative ways of presenting the sushi slices.

Chocolate fudge slice

This recipe needs little cooking!

Preparation time 20 minutes
Cooking time 10 minutes
Serves 2

Ingredients

250 grams packet plain chocolate biscuits
½ cup cocoa powder
1 cup desiccated coconut
100 grams crushed nuts (optional)
60 grams butter
1 × 395 gram can condensed milk
100 grams white or milk chocolate

Method

1. Line a 23-centimetre square tin with baking paper or grease with cooking spray.
2. Place biscuits in a food processor and process until finely crushed.
3. Place crushed biscuits in a large mixing bowl, sift in cocoa, and add coconut and nuts. Mix with a wooden spoon.
4. Melt butter in the microwave on high for approximately 30 seconds.
5. Stir melted butter and condensed milk into biscuit mixture until all ingredients are moistened.
6. Press into the cake tin and refrigerate.
7. Melt chocolate in microwave for approximately 30 seconds.
8. Drizzle melted chocolate over cooled slice. Cut into squares and store in an airtight container in the refrigerator.

Questions

1. Make an estimation of the time saved by using the microwave and food processor in this recipe.
2. List three other ingredients that could be substituted for the nuts.

Fruit roll/balls

This recipe requires no cooking and is made using milk arrowroot biscuits.

Preparation time 15 minutes
Cooking time nil
Serves 2

Ingredients

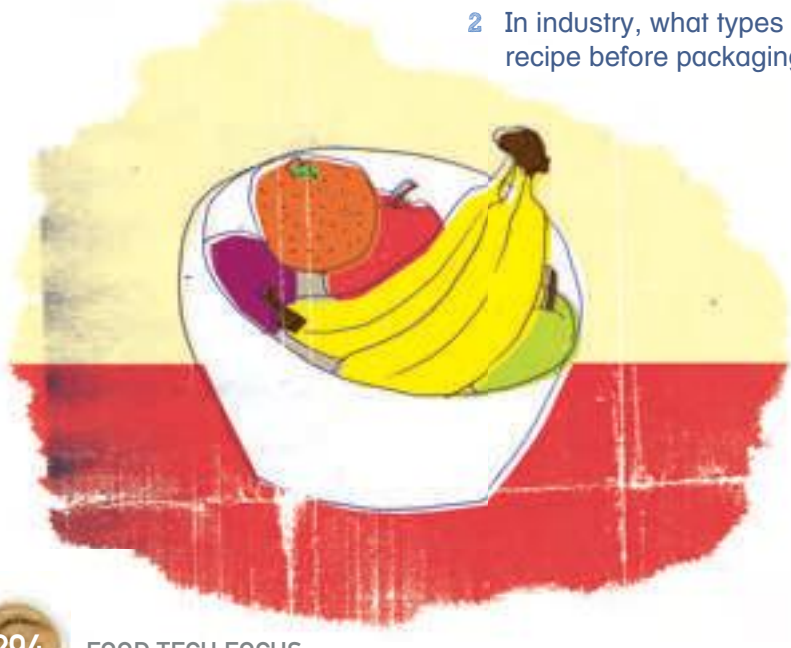
1 packet milk arrowroot biscuits
1½ tablespoon cocoa powder
1½ packets glacé cherries, chopped
1 can condensed milk
1 cup desiccated coconut

Method

1. Use a food processor to crush biscuits.
2. Place in a mixing bowl and mix in cocoa, chopped cherries and condensed milk.
3. Roll into balls of about 2–3 centimetres in diameter.
4. Place coconut in a rectangular tray and carefully roll balls in coconut to coat.
5. Refrigerate until firm.

Questions

1. How could this recipe be rewritten using different plain biscuits, flavour, fruit and outer coating?
2. In industry, what types of additives might be added to this recipe before packaging for sale?



Easy-as apple pie

A recipe using processed foods packaged for convenience.

Preparation time 20 minutes
Cooking time 15 minutes
Serves 2

Ingredients

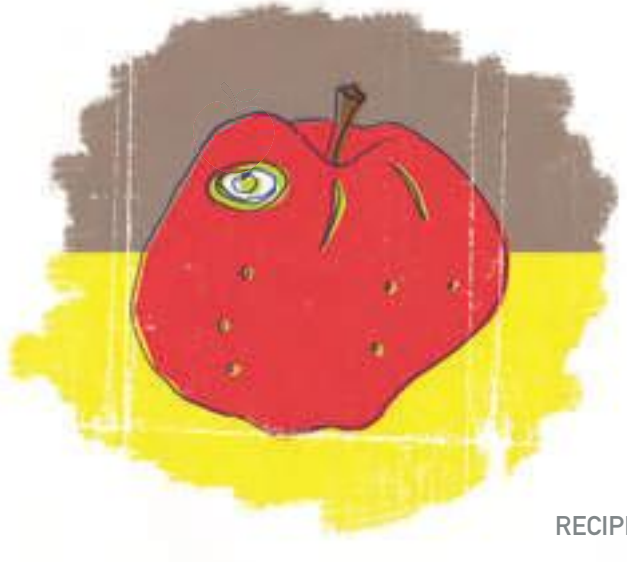
2 sheets frozen puff pastry, thawed
1 × 425 gram can pie apple
½ cup rolled oats
2 tablespoons brown sugar
2 teaspoons cinnamon

Method

1. Preheat oven to 200°C.
2. Spray two baking trays with cooking spray and place a sheet of pastry on each. Cut each sheet into four squares.
3. Place a heaped tablespoonful of apple in the middle of each square, and sprinkle with oats, sugar and cinnamon.
4. Moisten edges with water and fold in a triangle to make a parcel.
5. Bake for 15 minutes or until the pastry is golden and crisp.

Questions

1. Identify the packaging types used in this recipe.
2. This is known as a free-form pie. Why?



Three-ingredient party pies

Quick and easy pies using a recipe that can be adapted to produce dozens of variations!

Preparation time 20 minutes
Cooking time 30 minutes
Serves 4

Ingredients

400 grams lamb mince

1 × 535 gram can rogan josh sauce

5 sheets frozen shortcrust pastry

Method

1. Preheat oven to 200°C. Grease a 12-cup muffin tray.
2. Heat a fry pan over medium heat and brown the mince, stirring to break up lumps.
3. Add rogan josh sauce. Bring to the boil, then reduce heat and simmer for 3 minutes.
4. Use a 10-centimetre pastry cutter to cut 12 rounds from 3 sheets of pastry and line the tins.
5. Use an 8-centimetre cutter to cut 12 rounds from remaining pastry. These will be the pie lids.
6. Spoon filling into prepared pie cases. Top with 8-centimetre rounds and press edges to seal.
7. Using a skewer, make a small hole in the top of each pie.
8. Bake for 20 minutes or until golden on top.

Questions

1. Explain the importance of pressing the edges of the pastry when adding the tops.
2. Why are the tops pierced with a skewer? What would happen if they weren't?
3. With only three ingredients, what variations could you suggest to create other pies with different flavours using prepared foods?

Vietnamese rice paper rolls

A food in an edible wrapper that requires no label!

Preparation time 25 minutes
Cooking time nil
Serves 4

Ingredients

100 grams dried rice paper noodles
1 cup fresh mint, rinsed
100 grams bean sprouts
500 grams cooked, peeled prawns (optional)
1 large carrot, peeled and grated
warm water
2 cups shredded barbecue chicken
375 grams packet rice paper wrappers
dipping sauce of your choice

Method

1. Soak the noodles, following packet directions. Drain and set aside.
2. Separate mint leaves and place in a bowl. Trim ends of bean sprouts and place in another bowl. Place prepared prawns, carrot and chicken into separate small bowls. Set the bowls aside.
3. Half-fill a shallow dish with warm water. Dip one rice paper wrapper into the water, then place it on a clean chopping board for 30 seconds or until soft enough to roll without splitting.
4. Place a small amount of noodles, mint, sprouts prawns, carrot and chicken in the centre of the wrapper. Don't overfill or the rolls will split. Roll up, folding edges in as you go. Cover with a cloth and repeat with remaining ingredients.
5. Serve with a dipping sauce of your choice.

Questions

1. These rice paper rolls are suitable as an appetiser. Suggest three other hot appetisers that could also be served at a pre-formal gathering in the early evening.
2. Brainstorm five other foods or meals that are wrapped in their own edible packages.
3. Suggest two dipping sauces that may be purchased or made to accompany this dish.

Café-style scrambled eggs

A nutritious breakfast that will soon become your specialty.

Preparation time 10 minutes
Cooking time 5 minutes
Serves 2

Ingredients

2 eggs, lightly beaten
2 tablespoons cream (UHT or fresh)
salt and pepper for seasoning
1 teaspoon butter
2 slices of toasted crusty bread such as Vienna, Turkish or sourdough
chopped chives, to garnish
1 cherry tomato, van dyked
2 glasses of juice or flavoured milk

Method

1. Place eggs and cream in a bowl. Season with salt and pepper. Whisk until frothy.
2. Melt butter in a fry pan over medium heat. Pour eggs into pan. Stir gently with a wooden spoon for 2 minutes or until eggs are just set (see tip). Remove pan from heat.
3. Top the toasted crusty bread with scrambled egg and garnish with parsley and a van dyked tomato.
4. Serve meal with orange juice or milk.

TIP: Don't start stirring eggs until the first signs of setting. When stirring, use a wooden spoon or spatula to push cooked egg to the centre, tilting pan to allow uncooked egg to touch the base.

Questions

1. Name ingredients in the recipe that are a rich source of each of the following nutrients:
   - protein
   - carbohydrate
   - lipids
   - vitamins
   - water
   - minerals.
2. In this recipe, which ingredient coagulates when heated?
3. What are other methods of cookery would be suitable for cooking eggs for breakfast?
4. Develop a workflow for this recipe in order to get everything ready on time.

Tandoori chicken wrap

Wraps are a popular lunch choice. They can be very nutritious and it is easy to design your own.

Preparation time 15 minutes
Cooking time 5 minutes
Serves 2

Ingredients

1 tablespoon tandoori paste
½ cup plain yoghurt
4 chicken tenderloins or 1 chicken breast cut into long strips
1 tablespoon chopped fresh mint leaves
40 grams baby spinach
2 chapatti breads

Method

1. Combine tandoori paste and a quarter of a cup of yoghurt in a bowl.
2. Add chicken to bowl and toss to coat. If time permits, refrigerate, covered, for 15 minutes.
3. Preheat a barbecue plate, char grill or grill to medium–high heat. Cook chicken for 3 to 4 minutes each side or until browned and cooked through. Transfer to a plate, cover with foil and set aside for 5 minutes.
4. While chicken is cooking, combine mint and remaining yoghurt in a bowl.
5. Heat breads. Place spinach, chicken and mint mixture along the centre of each chapatti bread. Roll up firmly to enclose filling. Serve.

Questions

1. Name the nutrients that are rich in the following ingredients:
   - yogurt
   - chicken
   - spinach
   - bread.
2. What other breads are suitable for wraps?
3. What other fillings are suitable for wraps?
4. Draw and label a wrap idea of your own.

TIP: Crusty bread is a good accompaniment to minestrone soup. Try to choose wholegrain varieties.

Minestrone soup

Minestrone in Italian means 'a mixture' and it is traditionally made using spare ingredients. It is a high-fibre dish suitable for making in winter.

Preparation time 15 minutes
Cooking time 15 minutes
Serves 2

Ingredients

- 1 tablespoon of oil
- ½ onion
- ½ carrot, peeled and chopped
- ½ stalk celery, chopped
- ½ potato, diced
- 1 clove garlic, crushed
- ⅓ zucchini, chopped
- 1 teaspoon chopped parsley
- 1½ cups beef or vegetable stock
- ¼ cup red kidney beans, baked beans, cannelloni beans or chickpeas, drained and rinsed
- 1 teaspoon tomato paste
- ½ cup finely chopped canned tomatoes
- ¼ cup very small pasta
- salt and freshly ground black pepper
- 1 tablespoon parmesan cheese

Method

1. Heat the oil in a large saucepan, then add the onion, carrots, celery, potato and garlic. Stir for about 3 minutes, then add zucchini and parsley. Cook for 2 minutes, stirring often.
2. Add the stock, canned beans, tomato paste and tomatoes to the saucepan, cover and bring to the boil. Reduce heat to medium–low. Simmer, covered, stirring occasionally for 5 minutes or until the vegetables are tender.
3. Add pasta and cook, uncovered, stirring occasionally, for 3–5 minutes or until pasta is al dente.
4. Adjust the amount of liquid if necessary. Season with salt and pepper.
5. Ladle soup into serving bowls and sprinkle with parmesan cheese. Serve immediately.

Questions

1. Which ingredient in the recipe is high in fibre?
2. What are some other vegetables that could be used in the recipe?
3. Why was the zucchini added after the other vegetables?
4. Name some other recipes that use dried beans.
5. Name some other types of soups.

Lamb rissoles with mint pea mash

This is an old-fashioned recipe with a modern twist.

Preparation time 15 minutes
Cooking time 15 minutes
Serves 2

Ingredients

200 grams lean lamb mince
½ onion, finely chopped or grated
2 tablespoons of beaten egg
1 tablespoon barbecue sauce
⅓ cup dried breadcrumbs
1 tablespoon olive oil
2 large potatoes, peeled and cubed
¼ cup frozen peas
1 tablespoon cream
1 teaspoon mint jelly
salt and pepper for seasoning

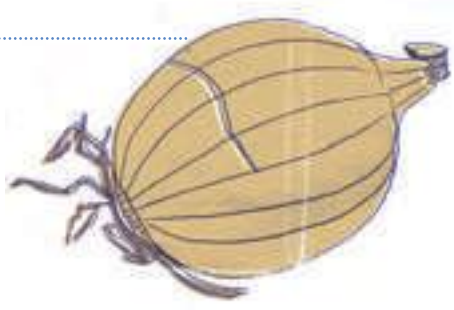
Method

1. Combine mince, onion, egg, sauce and breadcrumbs in a bowl. Shape the mixture into 8 rissoles.
2. Heat oil in a large fry pan over medium–high heat. Cook rissoles in batches, for 3–4 minutes each side or until cooked through. Drain on absorbent paper.
3. While the rissoles are cooking make the mash. Cook potato in a large saucepan of boiling, salted water for 10 minutes or until tender. Add peas for last 2 minutes of cooking.
4. Drain potato and peas and return to pan. Mash until almost smooth. Add cream and mint jelly. Season with salt and pepper then stir to combine.
5. Serve rissoles with mash.

TIP: Prepare and start cooking the potatoes first for good workflow.

Questions

1. What other meats could be used for the rissoles?
2. What other flavours can be used instead of barbecue sauce?
3. How would you have to alter the method to make a meatloaf, using the above recipe as a base?



Garlic pizza

Make this simple pizza or design your own by adding toppings and/or changing the base.

Preparation time 15 minutes
Cooking time 20 minutes
Serves 2

Ingredients

- ¼ cup warm water
- 1 teaspoon dried yeast
- ½ teaspoon castor sugar
- olive oil spray
- ¾ cup plain flour
- ¼ teaspoon salt
- 1 teaspoon olive oil
- 1 large clove garlic, thinly sliced
- 1 teaspoon extra olive oil
- sea salt flakes
- pesto to serve

Method

1. Preheat oven to 220°C.
2. Combine the water, yeast and sugar in a jug. Set aside for 5 minutes or until foaming.
3. Spray a 30-centimetre pizza tray with olive oil spray.
4. Make a well in the centre of a bowl of flour and salt. Add the yeast mixture and oil. Use a fork, then your hands, to mix until a soft dough ball.
5. Turn onto a lightly floured surface and knead for 5 minutes or until smooth and elastic.
6. Roll out dough to a 30-centimetre disc, or two 15-centimetre discs (for individual pizzas) and place on prepared tray.
7. Sprinkle with garlic, drizzle remaining oil and season with sea salt. Bake in oven for 10 minutes or until garlic is golden. Cut into quarters and serve with some pesto as a side dish.

Questions

1. What is yeast?
2. Name some products that are produced from the fermentation of yeast.
3. What are the conditions needed for yeast to multiply?
4. Suggest some toppings for the pizza.
5. Suggest some different bases that can be used for pizza.

Warm chocolate puddings

This food may not be healthy, but it's just the thing for a cold winter's night.

Preparation time 10 minutes
Cooking time 25 minutes
Serves 2

Ingredients

½ cup plain flour
1 tablespoon cocoa powder
1 teaspoon baking powder
2 tablespoons castor sugar
1 egg
40 grams butter, melted
½ cup milk

Sauce

2 tablespoons brown sugar
1 tablespoon cocoa powder
½ cup boiling water

Method

1. Preheat the oven to 180°C.
2. Place the flour, cocoa powder, baking powder, castor sugar, egg, butter and milk into a bowl and whisk until a smooth batter forms.
3. Divide the mixture into ramekin dishes.
4. To make the sauce, combine the brown sugar and cocoa powder and sprinkle over each pudding. Pour the boiling water over the puddings and transfer to the oven.
5. Bake for 20–25 minutes.
6. Serve while hot with cream or ice-cream.

Questions

1. At what social occasions could this dish be served?
2. Is this recipe suitable to make in winter? Justify your answer.
3. What technology is required to product this recipe?
4. Is this a low-cost dish? Justify your answer.

Lemon myrtle cooler

Lemon myrtle is a tall, bushy tree found in Queensland rainforests. The leaves are dark green in colour and contain a considerable amount of lemon essential oil, which produces a distinct lemon-scented aroma and an unusual lemon and lime flavour. Lemon myrtle is one of the most valuable and versatile bush foods. It is enjoys enormous success in the hospitality industry where chefs have embraced its flavour with enthusiasm and great creativity. Purchase lemon myrtle from specialty spice stores or buy a shrub to grow at home.

Preparation time 35 minutes
Serves 4

Ingredients

4 lemon myrtle leaves

boiling water

2 litres chilled water

Method

1. Place lemon myrtle leaves in a dish and cover with boiling water.
2. Cool for approximately 30 minutes or until the liquid is the colour of tea.
3. Pour liquid and leaves into a 2-litre bottle.
4. Fill with chilled water for a refreshing summer drink.

TIP: You can keep adding chilled water to the leaves for several days for a continuous supply of lemon myrtle cooler.

Questions

1. a Visit your local supermarket and find out which products contain lemon myrtle.
   b Design a survey to find out how many shoppers are aware of these products and are buying them.
   c In small groups, propose some strategies to increase awareness of these products to your local community.
   d As a class, select one company currently selling lemon myrtle products. Draft a letter that outlines a variety of strategies they could use to increase awareness of their products.
2. Prepare a recipe leaflet that highlights the use of lemon myrtle in foods and beverages.

Roasted apple, macadamia and wattleseed muffins

Golden wattle is widespread in the south-eastern states of Australia and is also Australia's floral emblem. In the bush tucker industry, wattleseed is one of the most widely used Aboriginal food plants. This delicious recipe incorporates Australian grown and native ingredients.

Preparation time 10 minutes
Cooking time 20–25 minutes

Ingredients

- 220 grams self-raising flour
- ½ cup castor sugar
- 2 tablespoons ground wattleseeds
- 1 tablespoon crushed macadamia nuts
- ¾ cup milk or buttermilk
- 1 egg
- ¾ cup vegetable oil
- 1 apple
- extra sugar for sprinkling

Method

1. Preheat oven to 180°C and grease a muffin tin.
2. Mix dry ingredients.
3. In a separate bowl lightly whisk milk, egg and oil together.
4. Make a well in the centre of the dry ingredients, pour in wet mixture and mix lightly together.
5. Spoon into muffin tins.
6. Slice apples thinly and fan them around the muffins then sprinkle with sugar.
7. Bake for 20–25 minutes, until lightly browned on top and a skewer inserted comes out clean.
8. Remove from tins and turn out onto a rack to cool before serving.

Questions

1. Evaluate the appearance, flavour and texture of the finished muffins.
2. Suggest two ways that you could modify this recipe to incorporate other bush foods.
3. Outline the nutritional benefits of wattleseeds and macadamia nuts.
4. Investigate where you can buy wattleseeds and macadamia nuts locally.

Traditional damper

This recipe is made from the basic products that were available at the time of early European settlement—plain flour, water and salt. There is no quantity given for these, as you just make it up as you go!

Preparation time 15 minutes
Cooking time 30 minutes

Ingredients

plain flour
water
salt

Method 1

1. Preheat oven to 220°C.
2. Take a quantity of flour (try 250–500 grams) and a pinch of salt.
3. Add enough water to the flour to make dough. The dough should be rather firm and not sticky, so add the water slowly.
4. Take a large sheet of foil and place the dough in the centre. Wrap the dough in the foil and place in the oven.
5. Take the damper out occasionally to do the 'tap test'. If the bottom sounds hollow when tapped, it is done.

Method 2

You could try cooking damper using the traditional method—under the coals of a fire. Note: This method should only be used with your teacher or another adult.

1. Dig a hole about 60 centimetres wide and about 30–40 centimetres deep.
2. Arrange a fire on top of this hole.
3. When the fire has burnt down to small red-hot coals, place the damper wrapped in foil into the hole. Coals should be positioned both under the damper and on top of it.
4. Take the damper out occasionally to do the 'tap test'. If the bottom sounds hollow when tapped, it is done.

Bush damper

Ingredients

2 cups self-raising flour
1 teaspoon salt
1 tablespoon wattleseeds
1 teaspoon lemon myrtle
1 cup buttermilk
1 tablespoon olive oil
milk, to brush
golden syrup to serve

Method

1. Preheat oven to 180°C. Grease a baking tray.
2. Sift flour and salt into a large bowl. Add wattleseeds and lemon myrtle and stir to combine.
3. Make a well in the centre of the dry ingredients, add buttermilk and oil and use a fork to mix into a soft dough.
4. Place on a lightly floured board and knead to a smooth dough.
5. Shape into a round cob, place on a greased baking tray and brush with milk.
6. Bake for 40–50 minutes, or when the 'tap test' (the bottom sounds hollow when tapped) indicates that it is done.
7. Slice and serve warm, drizzled with golden syrup.

TIP: Shake the carton of buttermilk well before opening.

TIP: Wattleseeds and lemon myrtle are available from spice stores.

Contemporary Aussie damper

Ingredients

2 cups self-raising flour

1 teaspoon salt

1 teaspoon sugar

1 teaspoon butter

1 cup milk

Method

1. Preheat oven to 220°C.
2. Mix the dry ingredients and the butter together.
3. Add the milk and mix well.
4. Knead for approximately 5 minutes.
5. Shape the dough into a flat ball, and place the dough on a greased and floured baking sheet or in a greased and floured round cake tin.
6. Bake for 30 minutes or until the 'tap test' indicates that it is done.
7. Remove and wrap in a clean tea towel and cool on a wire rack.
8. Serve immediately in moderately thick slices.

TIP: Although golden syrup is the traditional spread to use on the cooked damper, jam goes well with it too.

Questions

1. Draw up a table in your notebook similar to the one below and use it to evaluate the original, bush and contemporary dampers.

Damper	Ingredients	Crust	Texture	Flavour	Moisture content
Traditional					
Bush					
Contemporary					

2. Evaluate the nutritional properties of each damper by plotting the ingredients on the Healthy Eating Pyramid (refer to Chapter 2, page 54).
3. Suggest alterations that could be made to the ingredients to improve the nutrient value of any of the dampers.
4. Why do you think damper was a popular form of bread for the first settlers?

Pad Thai

Australian food is very multicultural, and continues to expand in variety as migrants arrive and people demand greater access to different foods. Pad Thai is the ultimate street food (sold from street carts) of Thailand. Street cart cooks specialise in one or two dishes to remain competitive given the limited space, ingredients and tools available. The best of these cooks have cooked the same dish constantly, day after day, year after year, striving for perfection.

Preparation time 10 minutes
Cooking time 20 minutes
Serves 2

Ingredients

150 grams rice stick noodles
1 tablespoon olive oil
1 tablespoon lime juice
2 teaspoons salt-reduced soy sauce
1 teaspoon fish sauce
1 egg, lightly beaten
75 grams firm tofu, drained and cut into 2-centimetre cubes
1 green onion, sliced into 3-centimetre lengths
½ cup bean sprouts, to serve
lemon wedges, to serve (optional)
sweet chilli sauce, to serve (optional)

TIP: By far the trickiest part of this recipe is the soaked noodles. Noodles should be somewhat flexible and solid, not completely expanded and soft. When in doubt, it is better to under-soak noodles—you can always add more water to the pan, but you can't take it out of over-soaked noodles.

Method

1. Place the noodles in a large heatproof bowl and cover with boiling water. Stand for 5–8 minutes or until softened. Drain and set aside.
2. Combine lime juice, soy sauce and fish sauce in a small bowl and set aside.
2. Meanwhile, heat two teaspoons of the oil in a wok or large non-stick fry pan over medium heat. Add egg, swirling to coat the wok. Cook for 2 minutes or until egg is just set to form a thin omelette-like consistency. Break up roughly with a spatula then remove from the pan and set aside.
3. Return wok to the heat and add the remaining oil. Add the tofu and stir-fry for 3 minutes or until golden. Remove from pan and place on paper towel to drain.
4. Add the green onion and cook for 1 minute. Add the softened noodles, tofu and egg along with combined sauces to the wok. Stir-fry until heated through.
5. To serve, top with bean sprouts, lemon wedges and sweet chilli sauce, if desired.

Question

Draw up a time plan outlining the steps that you went through to prepare this meal.

Minced beef pies

In this recipe, traditional meat pies are given an update with an open pastry case filled with a rich beef mixture. Pea mash (see opposite) adds a traditional touch to this updated favourite.

Preparation time 45 minutes
Cooking time 45 minutes
Serves 2

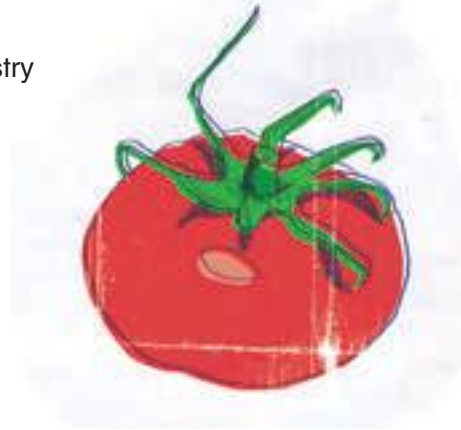
Ingredients

- 2 sheets frozen puff pastry, thawed
- 1 tablespoon oil
- 1 small onion, finely chopped
- 1 small carrot, finely chopped
- 350 grams minced beef
- 1 × 400 gram can crushed tomatoes
- 1 tablespoon tomato paste
- 2 tablespoons Worcestershire sauce
- ½ cup beef stock
- fresh rocket leaves, to serve
- tomato sauce, to serve

Method

1. Preheat oven to oven to 190°C.
2. Grease six muffin tins (three-quarter cup capacity).
3. Cut out six rounds, 13 centimetres in diameter, from pastry sheets, using a saucer as a guide. Line the tins with pastry rounds and trim any excess pastry. Lightly prick the bases with a fork and refrigerate for 20 minutes. Cut out pieces of baking paper large enough to line pastry in muffin pan, line the pans and fill with dried rice or beans.
4. Cook the pastry shells for 10 minutes then remove the paper and rice or beans and cook for a further 10 minutes, or until pastry is crisp and lightly browned. Remove the pastry shells from the pan and place them on an oven tray.
5. Heat oil in a large pan and add onion and carrot. Cook until the onion is soft. Add mince and cook, stirring, until lightly browned. Stir in undrained tomatoes, tomato paste, sauce and stock.
6. Simmer, uncovered, for about 15 minutes, or until sauce is thickened.
7. Spoon warm mince mixture evenly into pastry cases and cook for 10 minutes.
8. Serve pies topped with potato pea mash (see opposite) and fresh rocket leaves. Add tomato sauce if desired.

TIP: Filling the pans with dried rice or beans (step 3) helps to prevent the pastry from burning.



Potato pea mash

Ingredients

2 medium potatoes, peeled and chopped

2 cups frozen peas

25 grams butter

¼ cup buttermilk

salt and pepper to taste

Method

1. In separate containers, steam or microwave potatoes and peas until tender.
2. Purée peas.
3. Mash potatoes with butter and buttermilk until smooth, then stir in pea purée.
4. Season with salt and pepper and keep warm until served.

Questions

1. Develop a production plan for minced beef pies and potato pea mash. Identify the equipment to be used.
2. Develop criteria that you can use to evaluate your finished product.
3. Suggest variations to this recipe.

Chicken noodle omelette

This recipe provides a low-cost meal that can be prepared very quickly. Served with salad or vegetables, it is a nutritious meal for dinner.

Preparation time 10 minutes
Cooking time 15 minutes
Serves 2

Ingredients

- 85 grams packet chicken-flavoured instant noodles
- 1 cup cooked chicken
- 2 teaspoons finely chopped flat-leaf parsley
- 2 eggs, lightly beaten
- 2 tablespoons grated cheddar cheese

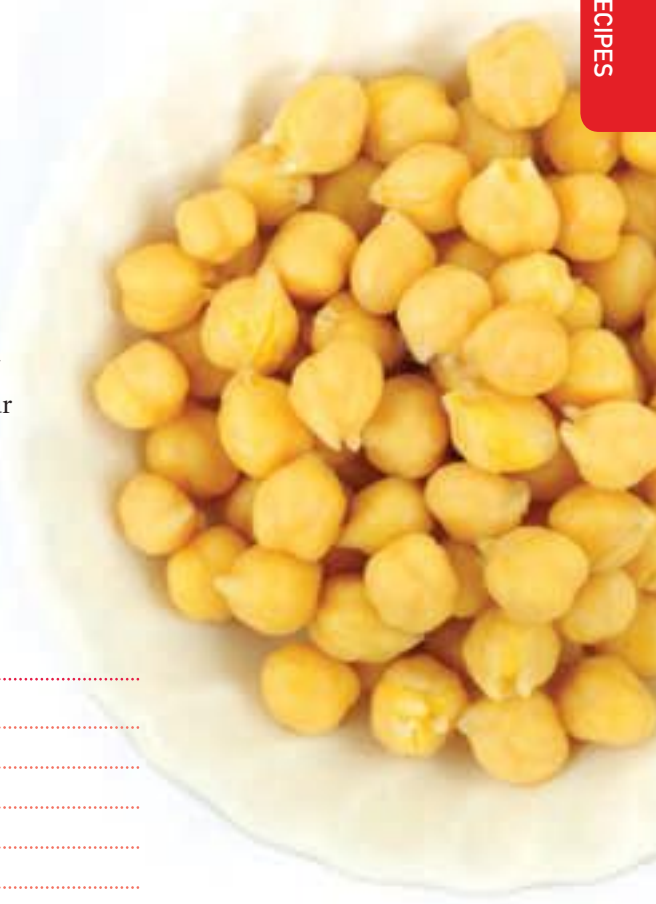
Method

1. Boil 500 millilitres of water in a saucepan. Add the noodles and flavour sachet to the saucepan. Cook the noodles as directed. Drain well.
2. Put the noodles, chicken, parsley and eggs in a bowl. Mix well.
3. Put the mixture in a 20-centimetre non-stick fry pan. Cook for 5 minutes without stirring.
4. Sprinkle with cheese. Put under hot grill for 2 minutes, or until browned.
5. Serve hot with a side salad or mixed vegetables.

Questions

1. Develop criteria that you can use to evaluate your finished product.
2. Can you suggest any variations to this recipe?
3. Estimate the total cost of this meal.

Orange and chickpea couscous



Couscous is tiny balls made from semolina flour. It is a common feature of North African cooking—traditionally women dampened the semolina flour and rolled it so that the particles stuck together as little balls.

Preparation time 15 minutes
Cooking time 15 minutes
Serves 4

Ingredients

- 1½ cups couscous
- 1 vegetable or chicken stock cube
- 1½ cups water
- 2 oranges, peeled and segmented
- ½ cup chopped spring onions
- 1 cup canned chickpeas, drained and rinsed
- ¼ cups currants
- salad dressing of your choice

TIP: Ask your teacher to demonstrate how to peel and segment an orange for best presentation.

Method

1. Place couscous in a large heatproof bowl. Dissolve the stock cube in a jug containing about 1½ cups of boiling water and pour it over couscous. Cover and leave for 10 minutes, then fluff up grains with a fork.
2. Gently stir the remaining ingredients into the couscous.
3. Serve dressed with your favourite salad dressing—try a balsamic or creamy Caesar salad dressing—or make one of your own!

Questions

1. Describe the texture of this meal.
2. Can you think of meals for which this dish might be an accompaniment?
3. Suggest other herbs, spices and vegetables that could be added to this dish.

Lamb burgers

This is a low-cost takeaway-style recipe suitable for families on limited incomes. You can easily vary this recipe by substituting chicken, beef or turkey mince for the lamb, and by adding fresh salad accompaniments or different breads to finish.

Preparation time 10 minutes
Cooking time 15 minutes
Serves 4

Ingredients

½ box frozen spinach (approximately 70 grams)
250 grams minced lamb
1 clove garlic
¼ teaspoon ground cumin
2 teaspoons fresh chopped parsley
2 tablespoons oil (for frying)
4 hamburger buns
4 large lettuce leaves
4 slices cheese
8 slices tomato
tomato or barbecue sauce for serving

Method

1. Defrost the spinach and drain over a bowl or the sink.
2. Place meat, spinach, garlic, cumin and parsley in a bowl. Use clean hands to mix until they are well combined. Divide the mixture evenly into four and shape into patties of about 6-centimetres diameter.
3. Heat a fry pan on medium–high heat and add a little oil.
4. Cook the patties, turning only once during cooking. They will take approximately 10–12 minutes to cook through.
5. Meanwhile, wash and prepare salad ingredients for burgers. Prepare buns and top with salad.
6. Serve hamburgers in buns with salad and sauce.

Questions

1 a Calculate how much this recipe would cost. Add a serving of homemade chips and milkshake. What is the total cost of the meal for a family of four?

b How much does this work out to be per person? Compare this to a 'meal deal' at a local takeaway. Is your version cheaper?

c Suggest other takeaway-style meals a family could prepare at home if they were on a tight budget.

2 Design a burger pattie using one of the alternative minced meats suggested. Vary additional ingredients too.

Corn tortillas

Corn tortillas are an unleavened bread and a staple food in Mexico.

Preparation time 5 minutes
Cooking time 20 minutes
Serves 2

Ingredients

½ cup plain flour
½ teaspoon bicarbonate of soda
½ teaspoon salt
½ teaspoon baking powder
1 cup polenta
1 egg, beaten
1½ cups milk with 1 tablespoon vinegar added

Method

1. Sift flour, bicarbonate of soda, salt and baking powder into a medium bowl. Stir in polenta.
2. Stir in beaten egg and milk and vinegar mixture. The batter should be runny.
3. Pour two tablespoons of batter into a greased, heated fry pan. Tip the pan to make the tortilla thin.
4. When done, turn over and cook the other side.
5. Remove and cool.
6. Serve with a filling of your choice, or freeze until required.

Questions

1. What gives polenta its yellow colour?
2. When vinegar is added to the milk what happens? What is this called?
3. Suggest three savoury fillings for these tortillas.

Sago custard and peaches

This recipe combines the staple of sago (tapioca) and a popular Australian fruit crop (peaches).

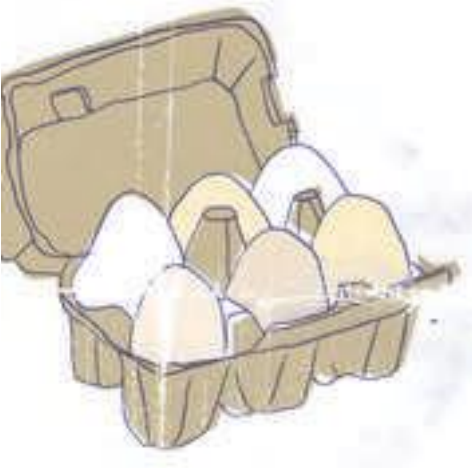
Preparation time 10 minutes
Cooking time 30 minutes
Serves 2

Ingredients

2 tablespoons sago
1⅓ cups water
2 cups milk
2 tablespoons sugar
2 eggs
½ teaspoon vanilla
pinch of nutmeg
6 peach slices
2 tablespoons of thickened cream

Method

1. Preheat oven to 160°C.
2. Place sago in a sieve and rinse.
3. Bring water to the boil in a medium saucepan. Add sago. Stir until transparent. Add milk and sugar. Mix well. Allow to cool.
4. Beat egg and vanilla together. Add to sago mixture and pour into a casserole dish. Sprinkle on nutmeg.
5. Place casserole dish in a baking dish filled with sufficient water to reach halfway up the side of the casserole dish.
6. Place in oven. Bake for 30 minutes or until set.
7. Remove from water bath (bain-marie) and serve with peaches and cream.



Questions

1. Ask your teacher for the ingredient purchase dockets for this recipe and provide a costing.
2. Why is a bain-marie cooking method necessary for this dessert? What would happen if it was not used?

Coconut and passionfruit rice

This recipe uses one of the crops grown in Leeton—rice.

Preparation time 5 minutes
Cooking time 25 minutes
Serves 2

Ingredients

400 millilitres light coconut milk
¾ cup milk
¼ cup castor sugar
¼ teaspoon salt
¾ cup short grain white rice
3 passionfruits

Method

1. Place coconut milk, milk, sugar and salt in a medium saucepan.
2. Bring to the boil over a medium heat.
3. Add rice and stir well. Reduce heat to low and cover with lid. Cook 25 minutes or until most of the liquid has been absorbed.
4. Stir through almost all of the passionfruit pulp.
5. Serve in individual bowls garnished with remaining passionfruit pulp.

Questions

1. What is the difference between the rapid boil and absorption method of cooking rice?
2. Find out what type of rice is best suited to making sushi and risotto. What qualities make these rice types suitable for these recipes?

Plum jam

Make this jam and develop your own tamper-evidence device. Jars used for the jam must be sterilised (see page 10 for details).

Preparation time 10 minutes
Cooking time 25 minutes
Serves 2

Ingredients

500 grams plums, washed, stoned and cut into small pieces

1½ cups sugar

2 teaspoons lemon juice

Method

1. Place a saucer in the refrigerator to cool and use for testing (see page 287).
2. Place plums in a microwaveable dish and cook on high for 15 minutes.
3. Add sugar and lemon juice and stir until dissolved.
4. Return to microwave and cook for 12 minutes.
5. Test a small amount on the saucer that has been in the refrigerator. If the mix gels or wrinkles when touched, it is ready. If not, cook for another 3 minutes and test again.
6. Pour into sterilised jars, label, date and seal.

TIP: Cooking time may be reduced if the microwave is greater than 900W power.

Questions

1. What types of tamper-evidence devices are commonly used for jams?
2. This product would be regarded as a copy-cat product, as it is identical to other plum jams on the market. Suggest ways to make it a line enhancement.

First-class flathead

Creating an airline-style complete meal in a box.

Preparation time 10 minutes
Cooking time 30 minutes
Serves 2

Ingredients

2 small foil boxes with lids
1 teaspoon oil
½ onion, finely diced
1 tablespoon vinegar mixed with 1 tablespoon water
2 slices lemon plus juice of one lemon
pepper
2 white fish fillets
½ carrot, cut into thin strips
1 teaspoon butter
aluminium foil
2 dinner rolls

Method

1. Preheat oven to 190°C. Brush foil box with oil.
2. Mix onion, vinegar and water, lemon juice and pepper to taste.
3. Place half of this mix in the base of the foil box and put fish fillet on top. Place carrot and sliced lemon on top of fish.
4. Dot with butter and cover with foil.
5. Bake for 30 minutes.
6. Serve in box with a warmed dinner roll (20 seconds in microwave on high), paper serviette and plastic cutlery.

Questions

1. Look around the class when all the meals are served. Calculate (based on the size of an individual box) the volume of space required to accommodate this meal on an aeroplane.
2. Using the ingredient purchase receipts for this dish, calculate the cost of the dish. Do you consider it to be suitable for first class, business class or economy?
3. Suggest other vegetables to add to this meal.
4. Suggest an appropriate dessert.

Apricot choc chip muesli bars

These muesli bars are great snacks for school. This slice can be made, baked and ready to eat in 40 minutes!

Preparation time 10 minutes
Cooking time 30 minutes
Serves 2

Ingredients

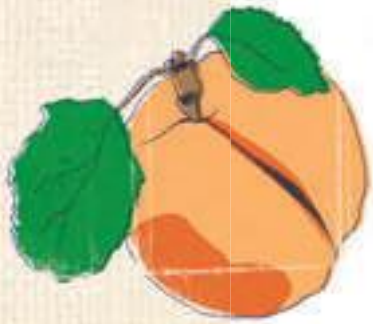
- 125 grams butter, chopped
- ½ cup firmly packed brown sugar
- 1 tablespoon honey
- 2¼ cups rolled oats
- ¼ cup sunflower kernels
- ¼ cup desiccated coconut
- ½ teaspoon ground cinnamon
- ½ cup chopped dried apricots
- 2 tablespoons dark choc bits

Method

1. Preheat oven to 170°C. Grease and line lamington tin with baking paper.
2. Combine butter, sugar and honey in a microwave-safe bowl and heat on medium–high heat for 15 seconds at a time, stirring between each time, until sugar is dissolved.
3. Transfer butter mixture to a medium bowl and stir in oats, sunflower kernels, coconut, cinnamon and apricots.
4. Press evenly into prepared pan. Sprinkle with choc bits.
5. Bake 30 minutes or until lightly browned.
6. Allow to cool and cut into muesli bar-sized pieces.

Questions

1. After you have cut the slice into muesli bar-sized pieces, work out the cost per piece.
2. List five other snacks that can easily be prepared at home.



Pizza pockets

Homemade pizza pockets are a healthy alternative to the processed versions commercially available.

Preparation time 15 minutes
Cooking time 5 minutes
Serves 2

Ingredients

- 2 pizza pockets
- 1 teaspoon butter
- 1 teaspoon pine nuts
- ½ teaspoon crushed garlic
- 50 grams salami or low-fat ham, chopped
- 50 grams mushrooms, chopped
- ¼ green capsicum, finely diced
- ¼ teaspoon finely chopped basil
- ¼ cup grated mozzarella
- 1 teaspoon tomato paste

Method

1. Split each roll carefully to create a pocket for the filling.
2. Remove some of the centre and process in a food processor to form breadcrumbs.
3. Combine butter, pine nuts and garlic.
4. Cook in microwave on high for 30 seconds.
5. Add all other ingredients. Stir to combine.
6. Spoon mixture carefully into pockets and place on a flat dish covered with absorbent paper.
7. Microwave on high for 1 minute or until warmed through.

Questions

1. Using the basic recipe, alter the ingredients to develop pizza pockets using traditional pizza names, for example meat lover's, Hawaiian, vegetarian.
2. Suggest three other types of bread that could be used for this recipe.
3. Modify the ingredients list to lower the fat content of the recipe.

Jam drops

These biscuits are popular items at cake stalls. Make them and calculate a selling price.

Preparation time 20 minutes
Cooking time 15 minutes
Makes 24 biscuits

Ingredients

180 grams butter
½ cup castor sugar
1 egg yolk
½ teaspoon lemon zest
½ teaspoon vanilla
1½ cups plain flour
2–3 tablespoons jam

Method

1. Preheat oven to 180°C.
2. Cream butter and sugar until light and fluffy.
3. Beat in yolk, lemon zest and vanilla.
4. Sift flour into mixture and stir well.
5. Roll teaspoonfuls of mixture into balls. Place 5 centimetres apart on greased trays.
6. Push the end of a wooden spoon into each to create a hollow. Fill hollow with half a teaspoon of jam.
7. Bake for 15 minutes.

Questions

1. Using the ingredients purchase receipts, calculate the cost of your batch of biscuits. Add the cost of packaging.
2. Set the sale price per half dozen. How much profit (after the ingredients and packaging costs are taken out) do you make?
3. Select six of your biscuits and package them. Label them attractively for a cake stall.

Pesto

In Australia, pesto was initially made by specialty producers and sold in delicatessens and gift shops. However, it is now very popular and readily available in supermarkets.

Preparation time 5 minutes
Cooking time nil
Serves 2

Ingredients

1 tablespoon pine nuts
¼ cup olive oil
2 cloves garlic, crushed
1 cup roughly chopped fresh basil leaves
2 tablespoons grated parmesan cheese

Method

1. Process pine nuts in a food processor.
2. With motor running, add olive oil, garlic, basil and parmesan cheese.
3. Bottle and cover with a thin layer of olive oil before capping.
4. Store in the refrigerator or freezer in useable quantities.

Questions

1. Why is this product popular?
2. Suggest a selling price and justify the price you have selected.
3. How could you promote this product?
4. Where could this product be distributed?
5. Design a label for this product to help make it more appealing than its competitors.

Frozen dessert

Some of the best-selling products are endorsed by famous personalities. Name this dessert after your favourite celebrity.

Preparation time 15 minutes
Cooking time nil
Makes 6 muffin-sized desserts

Ingredients

300 millilitres cream

200 grams or ½ can condensed milk

125 grams frozen raspberries

2 tablespoons coconut milk powder

Method

1. Line a muffin tin with 6 paper cases.
2. Combine cream and condensed milk and beat with electric beaters until thick.
3. Divide mixture in half.
4. Crush frozen berries with a wooden spoon and stir into one half of cream mixture.
5. Stir coconut milk powder in other half.
6. Spoon coconut mixture in paper cases until half full. Finish with a layer of raspberry mixture to fill to top.
7. Freeze until set.

Questions

1. What other flavours could be used in this recipe? Suggest ingredients that could be substituted for the raspberries and coconut powder.
2. List any food products that you know of that are endorsed by celebrities.

Plum pork and vegetables

This nutritious meal contains all the six food nutrients, is low in saturated fat and is tasty and easy to prepare.

Preparation time 20 minutes
Cooking time 12 minutes
Serves 2

Ingredients

250 grams pork fillet
½ tablespoon olive oil
80 grams vermicelli or other rice noodles
1 small onion, cut into wedges
1 teaspoon fresh ginger, grated
¼ cup plum jam
1 tablespoon soy sauce
100 grams snow peas, topped and tailed
½ large carrot, cut into slices or batons
1 small parsnip, cut into thin strips

Method

1. Prepare vegetables as instructed, cut any fat off the pork and slice the meat thinly. Heat oil in wok or fry pan and cook the meat on a high heat for 3–4 minutes or until browned. Place on paper towel and keep warm.
2. Place vermicelli in a medium bowl and add boiling water to cover. Set aside to soften for 5–8 minutes.
3. Stir-fry onion and ginger over a high heat for 1–2 minutes or until golden brown. Add the jam and soy sauce and stir for another 1–2 minutes. Add the snow peas, carrots and parsnips and stir-fry for 3 minutes.
4. Return the meat to the pan and cook on a high heat for 2–3 minutes or until it is heated through. Drain the vermicelli and arrange pork and vegetables with noodles on a plate as desired.

Questions

1. Which ingredient has the richest source of carbohydrate?
2. In this recipe, identify a source of protein, iron, lipid, vitamin and water.

Quick vegetarian pizzas

This is a tasty, healthy meal or snack that is free from any flesh foods. You can select your own ingredients and modify the pizza toppings to suit your own tastes.

Preparation time 20 minutes
Cooking time 20 minutes
Serves 4

Ingredients

- 800 grams spinach, washed, trimmed and roughly chopped
- 2 teaspoons garlic, crushed
- 300 grams button mushrooms, sliced
- 140 grams tomato-based pizza sauce
- 2 tablespoons tomato paste
- 4 large wholemeal pitta breads
- 200 grams low-fat ricotta cheese
- 80 grams low-fat cheddar cheese, grated
- 25 grams pine nuts

Method

1. Preheat oven to 220°C.
2. Wash and prepare spinach, garlic and mushrooms.
3. Add spinach to a large saucepan and stir over a low heat until wilted. Remove from heat and drain on absorbent paper.
4. Combine pizza sauce, tomato paste and garlic in a bowl. Remove 2 tablespoons of tomato mixture and mix it in a separate bowl with the mushrooms.
5. Place pitta bread on a baking tray and spread with the remaining sauce mixture. Top with spinach, then mushroom mixture and finally the cheeses and nuts.
6. Bake for approximately 20 minutes or until topping is browned.

Questions

1. List four other vegetarian toppings that you could use as substitutes in this recipe.
2. What sorts of garnishes could be used with this recipe?
3. Design your own pizza. Give it a name and list the ingredients you would use.

Easy lasagne and garden salad

This quick lasagne recipe uses a few shortcuts that will make your meal speedy, as well as nutritious.

Preparation time 30 minutes
Cooking time 20–25 minutes
Serves 2

Ingredients

- ½ tablespoon oil
- 375 grams minced beef
- 300 grams tomato pasta sauce
- 2 cups ricotta cheese
- 1½ cups parmesan cheese, finely grated
- 3 tablespoons extra parmesan, grated
- 6 instant lasagne pasta sheets
- 2 lettuce leaves
- ¼ green capsicum
- 1 small tomato

Method

1. Preheat oven to 220°C.
2. Heat oil in a fry pan and cook beef on a medium–high heat until brown. Stir regularly. Add tomato pasta sauce and bring to the boil. Boil for 1–2 minutes and remove from heat.
3. In a medium bowl, combine cheeses. Oil a shallow 1-litre ovenproof dish and spoon in a third of the meat mixture.
4. Top with 2–3 pasta sheets and a quarter of the cheese mixture. Add another third of the meat mixture, more pasta sheets and another quarter of the cheese mix. Add the last third of the meat mixture.
5. Top with the remaining pasta sheets and the rest of the cheese mixture. Cover with foil and bake for 20–25 minutes or until the pasta is tender. Meanwhile, wash and cut salad ingredients and arrange on a plate.
6. Remove the lasagne from oven, sprinkle with extra parmesan and cook under a heated grill until the cheese is brown.

Questions

1. What other mince could be used instead of minced beef?
2. What do most traditional lasagne recipes use between the layers of pasta and meat? List the ingredients needed to make this.
3. List three serving suggestions for this lasagne recipe other than a basic salad.

Hot, rich potato salad

This warm winter recipe has a tasty, rich dressing. It is perfect either as an accompaniment to a meal or eaten on its own.

Preparation time 20 minutes
Cooking time 25 minutes
Serves 2–3

Ingredients

Salad

- 3 rashers bacon
- 750 grams small desiree potatoes
- 2 shallots, sliced thinly
- 2 tablespoons parsley, chopped
- ¼ teaspoon salt
- pinch of black pepper

Dressing

- ⅓ cup melted butter
- 1 tablespoon Dijon mustard
- 2 tablespoons white wine vinegar

TIP: Bacon can be omitted if desired.

Method

1. Preheat oven to 180°C.
2. Trim the rind from the bacon and grill or pan-fry until crisp. Allow bacon to cool then chop it into small pieces.
3. Place whole potatoes into a saucepan of simmering water and cook until just tender. Do not let their skins break away too much. Drain and cool.
4. Make the dressing by whisking all ingredients together in a jug. Keep warm until required.
5. Cut potatoes into quarters and place in an ovenproof dish with three-quarters of the bacon bits and the spring onion, parsley, salt and black pepper. Pour in the dressing and toss gently. Sprinkle with remaining bacon and place in oven for approximately 10 minutes or until warmed through. Serve hot.

Questions

1. How could you alter this meal to make it comply with the dietary guidelines?
2. This recipe uses desiree potatoes. Go to the internet to find the names of three other types of potatoes.
3. List as many other ingredients as you can think of that can be included in a potato salad.
4. Design your own potato salad. Share your ingredients with your class.

Chocolate caramel slice

This old-fashioned favourite will appeal to young and old.

Preparation time 10 minutes
Cooking time 30 minutes
Makes 1 bar tin

Ingredients

Base

½ cup plain flour, sifted
¼ cup soft brown sugar
¼ cup desiccated coconut
60 grams butter, melted

Filling

1 × 200 gram can sweetened condensed milk
1 tablespoon golden syrup
30 grams butter, melted

Topping

30 grams Copha, chopped
70 grams cooking chocolate, chopped

Method

1. Preheat oven to 180°C. Line a 3-centimetre deep, 28-centimetre by 18-centimetre lamington pan.
2. Combine all base ingredients in a bowl and mix well.
3. Press into prepared lamington pan. Bake for 10–15 minutes, or until light golden. Remove from oven and cool.
4. To make filling, combine all filling ingredients in a saucepan over medium heat. Cook, whisking, for 8 minutes or until golden.
5. Pour filling over cooked base. Bake for 12 minutes or until firm. Cool completely by refrigerating for 3–4 hours, or until set.
6. To make topping, place Copha and chocolate into a heat-proof bowl over a saucepan of simmering water. Stir until melted.
7. Pour topping over caramel. Refrigerate to set. Cut into squares to serve.

Question

What happens to slices and biscuits as they cool?

Battered fish and chips

This is a traditional takeaway food and often features on blackboard menus. Many young people start their working careers cooking and selling takeaway foods like this.

Preparation time 10 minutes
Cooking time 10 minutes
Serves 2

Ingredients

⅔ cup plain flour, sifted
¼ teaspoon baking powder
¼ teaspoon salt
150 millilitres soda water
vegetable oil, to deep-fry
2 pieces frozen fish fillets
lemon wedges and/or tartare sauce, to serve
2 cups frozen chips

Method

1. Combine flour, baking powder and salt in a bowl. Make a well in the centre of the mixture and gradually add soda water, using a whisk to stir until well combined.
2. Heat oil in deep fryer to 190°C.
3. Dip the fish fillets, one at a time, into the batter mixture to coat evenly.
4. Slowly release the fish into the hot oil and deep-fry for 3–4 minutes or until crisp and golden brown. Transfer to a plate lined with a paper towel.
5. Bake or deep-fry chips.
6. Divide fish and chips between serving plates and serve with tartare sauce and lemon wedges. You can even wrap them in some greaseproof paper and then butcher's paper.

TIP: To test when oil is hot enough to fry the fish, drop a cube of bread in turns—it should turn golden brown in 10 seconds if the oil is hot enough.

TIP: It is best to work with fish that is partly frozen.

TIP: To make your own tartare sauce, combine 1 cup mayonnaise with a finely chopped gherkin, a few chopped capers, some chopped dill and salt and pepper.

Questions

1. What is the function of the soda water in the recipe?
2. Why is it important to have the oil at the correct temperature when cooking?
3. List some safety tips to follow when using a deep-fryer.
4. Name other popular takeaway foods.

Mini quiches

These bite-sized quiches are tasty finger food.

Preparation time 10 minutes
Cooking time 20 minutes
Makes 12

Ingredients

1 egg
1 tablespoon cream
salt and pepper
1 teaspoon chopped chives
1 tablespoon corn
2 tablespoon grated cheese
1½ sheets ready-rolled shortcrust pastry

Method

1. Preheat oven to 180°C. Grease a 12-hole patty pan.
2. Place egg, cream, salt, pepper and chives in a bowl, and whisk until combined. Add corn and cheese.
3. Using a 7-centimetre biscuit cutter, cut out rounds from pastry sheets. Press each round into greased patty pan.
4. Pour egg mixture into pastry shell, taking care not to overfill.
5. Bake for 15 minutes or until cooked through and golden. Serve warm or cold.

Questions

1. Which country does the quiche originate from?
2. What are some other fillings that can be used for the quiches?
3. What is the difference between puff pastry and shortcrust pastry?
4. Identify other hot finger foods that can be served at functions.

Caesar salad

This is a popular café and restaurant dish, particular as an entrée.

Preparation time 15 minutes
Cooking time 5 minutes
Serves 2

Ingredients

1 egg
2 slices of white bread
1 tablespoon of olive oil
1 teaspoon of dry Italian herbs
1 rasher bacon
6–8 cos lettuce leaves
20 grams shaved parmesan cheese
2 tablespoons of Caesar salad dressing (bottled or homemade)
salt and pepper

Method

1. Preheat oven to 200°C.
2. Place egg in a saucepan. Cover with cold water. Place over medium heat. Bring to the boil, stirring often to create a whirlpool (to centre yolk). Reduce heat to low. Simmer for 5 minutes. Drain. Refresh in cold water. Peel and cut egg into wedges.
2. Cut crust off bread then cut bread into cubes. Toss cubes in olive oil and Italian herbs and then arrange bread on a baking tray. Bake for 10 minutes or until light golden. Set aside to cool completely.
3. Chop bacon and fry until the bacon is crisp. Drain on paper towel.
4. Tear lettuce leaves into 3-centimetre pieces and place in a large bowl. Add bacon and croutons. Pour dressing over salad. Season with salt and pepper. Toss gently to combine. Top with parmesan and egg. Serve.

Questions

1. What is the term used for toasted small cubes of bread?
2. How can the ingredients in this dish be modified to produce a variation of the salad?
3. What are some other suitable dishes that can be served as entrée?

Chicken parmigiana

This is a popular main dish on many menus.

Preparation time 15 minutes
Cooking time 20 minutes
Serves 2

Ingredients

1 chicken breast fillet
1 egg
½ cup flour
½ cup dried breadcrumbs
1 tablespoon olive oil
1 tablespoon butter
½ cup passata (Italian tomato sauce) or puréed tomato
½ cup pizza cheese (grated mozzarella and parmesan)
vegetables or rocket, to serve

Method

1. Preheat oven to 200°C.
2. Slice chicken breast in half horizontally. Using a meat mallet, bash out gently.
3. Lightly beat egg. Coat chicken in flour, then egg, then breadcrumbs.
4. Heat oil and butter in large fry pan. Cook crumbed chicken until golden brown on both sides.
5. Place on an oven tray lined with some baking paper.
5. Spread passata on chicken, sprinkle with cheese and bake until cheese has melted.
7. Serve with some seasonal vegetables or some rocket salad.

Questions

1. Suggest some suitable vegetables that could be served with this dish.
2. What is the role of the egg in this recipe?
3. Why is some butter added to the oil when frying the chicken?

Profiteroles

Profiteroles are a well-known special-occasion food.

Preparation time 15 minutes
Cooking time 20 minutes
Serves 2

Ingredients

⅓ cup water
40 grams butter (chopped into small cubes)
⅓ cup plain flour
2 eggs
cream or custard (pre-made)
cooking chocolate to decorate

Method

1. Preheat oven to 200°C.
2. Stir water and butter in a saucepan over medium heat until it just begins to boil.
3. Reduce to low heat, and add the flour into the saucepan.
4. Beat well with a wooden spoon, making sure that all the flour is cooked simultaneously. Once the mixture forms into a dough ball, turn off the heat and set aside for a few minutes to cool.
5. Add an egg into the slightly cooled dough, beating with the wooden spoon or an electric mixture with a dough hook. Crack the second egg into a bowl, then add it slowly to the mixture and beat.
6. Spoon teaspoons of the choux mixture onto a greased tray, spaced evenly. Bake for 25–30 minutes, until the profiteroles look nice and puffy.
7. Turn the oven off, and remove the profiteroles. With a knife, pierce the base of each profiterole, to release steam and then return it to the oven for 15 minutes. Once the profiteroles have dried out, transfer them to a wire rack to cool.
8. Add your favourite filling in the profiterole, cream or custard. Either pipe the filling through the pierced hole, or cut the profiterole in half and spoon the filling inside. Coat the top half of the profiterole with some chocolate. Serve.

Questions

1. What is the name of the pastry used to make this recipe?
2. What other recipes can be made using this pastry?
3. What raising agent is used in this recipe?

Chargrilled beef salad

A well-balanced and nutritious diet is essential for women throughout pregnancy Below is a very quick and nutritious meal that would be suitable.

Preparation time 20 minutes
Cooking time 10 minutes
Serves 4

Ingredients

500 grams beef rump steak
¼ cup fish sauce
¼ cup lime juice
3 Lebanese cucumbers, seeded and thinly sliced
8 shallots, thinly sliced
250 grams cherry tomatoes, quartered
1 cup mint leaves, loosely packed
1 cup coriander leaves, loosely packed
1 tablespoon grated palm sugar
2 teaspoons soy sauce
1 clove garlic, crushed

Method

1. Combine beef with 2 tablespoons of the fish sauce and 1 tablespoon of the lime juice in a large bowl. Cover and refrigerate for 20 minutes.
2. Drain beef and discard marinade. Cook beef on heated oiled grill plate until browned on both sides and cooked as desired. Cover and stand for 5 minutes. Slice thinly.
3. Combine cucumber, shallots, tomatoes and herbs in a large bowl. Combine the remaining juice and fish sauce with palm sugar, soy sauce and garlic in a screw-top jar. Shake well.
4. Add the beef and dressing to the salad and toss gently to combine.

Questions

1. Identify the food groups from the Australian Guide to Healthy Eating that are represented in the recipe.
2. Suggest two meat sources that could be used as an alternative to beef.

Vegie pancakes with ham, tomato and avocado

This is a nutritious and easy meal that busy parents and caregivers can prepare for children. As children mature, this recipe can also be used to encourage them to participate in the preparation of family meals. Active participation in food preparation often makes eating food much more appealing.

Preparation time 15 minutes
Cooking time 15 minutes
Serves 4

Ingredients

- 1½ cups self-raising flour
- 1 egg
- 1¼ cups reduced-fat milk
- 1 × 125 gram can corn kernels, drained
- 1 zucchini, coarsely grated
- 60 grams cheddar slices, finely chopped
- ¼ cup fresh chopped continental parsley
- pepper
- olive oil spray
- 80 grams shaved ham
- ½ small avocado, peeled, stone removed, sliced
- 4 mini Roma tomatoes, halved lengthways

TIP: Try replacing the corn and zucchini with different vegies, such as peas and grated carrot.

TIP: Sifting the flour keeps it light and airy so you end up with lovely fluffy pancakes.

Method

1. Sift flour into a large bowl. Make a well in the centre. Add the egg and milk and gradually whisk until the batter is smooth.
2. Stir in the corn, zucchini, cheddar and parsley. Season with pepper.
3. Heat a large non-stick fry pan over medium heat. Spray with oil. Drop one-quarter cup quantities of the mixture into the pan, leaving room between each pancake for spreading. Cook for 2–3 minutes or until bubbles appear on the surface. Turn over and cook until golden and cooked through. Transfer to a plate and cover with foil to keep warm. Repeat with remaining mixture.
4. Place 2 pancakes on each serving plate. Top with ham, avocado and tomato.

TIP: Gradually mix in the wet ingredients—this keeps the mixture lump-free. It also helps to keep your pancakes light and fluffy.

TIP: Work in small batches in the fry pan to allow room for spreading. Don't turn the pancakes before the bubbles appear as they won't be ready!

Questions

1. Identify the main nutrients provided by this dish.
2. Using the same ingredients listed in the recipe above, plan a meal that would appeal to all family members.

Tuna and fetta turnovers

These are a quick, convenient and nutritious alternative to takeaway foods.

Preparation time 15 minutes
Cooking time 15 minutes
Serves 2

Ingredients

- 1 × 110 gram can tuna in oil
- 50 grams ricotta cheese
- 50 grams fetta cheese, crumbled
- 25 grams sun-dried tomatoes, sliced thinly
- 1 tablespoon finely chopped flat-leaf parsley
- 1 tablespoon toasted pine nuts
- 2 tablespoons lemon juice
- 2 sheets frozen puff pastry, thawed
- 1 tablespoon milk

Method

1. Preheat oven to 180°C.
2. Drain the tuna over a bowl and reserve two tablespoons of the tuna oil. Flake tuna into a medium bowl, add both cheeses, tomatoes, parsley, nuts, lemon juice and reserved tuna oil. Mix well. Preheat oven to moderately hot.
3. Cut four 12-centimetre rounds from each pastry sheet.
4. Place one heaped tablespoon of tuna mixture on each round. Brush edges with a little milk and fold over to enclose filling. Press edges to seal. Repeat with remaining tuna mixture and pastry.
5. Place turnovers on lightly greased oven trays and brush lightly with milk.
6. Bake uncovered for about 15 minutes or until lightly browned.

Questions

1. Describe the appearance, taste, texture and aroma of the turnovers
2. Would you make any modifications to the recipe if you were to produce this recipe again?

Marinated seafood with tabouli

There are many health benefits of including seafood in your diet.

In Australia, a wide range of seafood, which is low in kilojoules, is readily available. An average-sized portion of fish (cooked without fat) has only about 360 kilojoules.

Preparation time 15 minutes
Cooking time 15 minutes
Serves 2

Ingredients

2 tablespoons olive oil

juice 1 small lemon

1 tablespoon fresh oregano leaves

sweet chilli sauce (optional)

250 grams seafood such as cleaned baby octopus, fish and shellfish

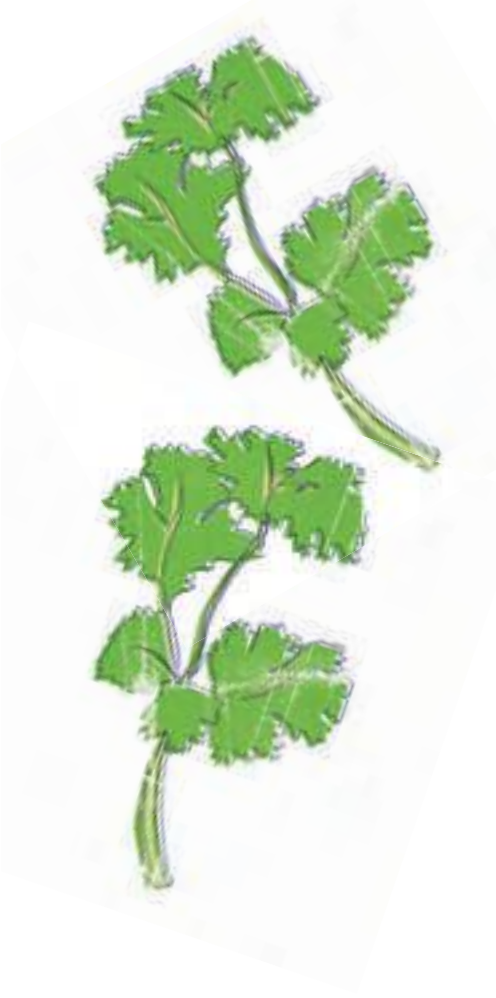
¼ cup burghul (cracked wheat)

1 shallot, sliced

¼ bunch fresh parsley

1 Roma tomato, diced

iceberg lettuce leaves for serving



Method

1. Prepare marinade by combining 1 tablespoon oil, half the juice of a lemon and oregano. Sweet chilli sauce may be added for flavour if desired. Wash and trim the seafood then soak it in the marinade while you prepare the tabouli.
2. Make the tabouli by pouring half a cup of boiling water over the burghul and leaving it to swell for 10 minutes.
3. Drain burghul and add shallot, parsley, tomato, 1 tablespoon olive oil and the remainder of the lemon juice.
4. Serve in a bowl in lettuce cups.
5. Cook the seafood over a hot griddle plate for approximately 2 minutes each side. Make sure that it does not overcook.
6. Arrange cooked seafood on tabouli to serve.

Questions

1. What nutritional value does burghul provide?
2. Describe the texture, flavour and appearance of this meal.
3. a. Prepare a flow chart with words and drawings to show the steps you took during the process of preparing this dish.
   b. In small groups, compare your charts and discuss any similarities and differences.

Chicken risotto

There are a number of wheat-free and gluten-free products on the market that make life much easier for people who are wheat- and gluten-intolerant. This is a tasty wheat-free, gluten-free and dairy-free dish that you can make at home.

Serves 2

Ingredients

- 3 tablespoons olive oil
- 200 grams Arborio rice
- 1 onion, chopped
- 1 green pepper, chopped
- 1 red pepper, chopped
- 8 medium mushrooms
- 750 millilitres wheat-free/gluten-free vegetable stock
- 2 skinless chicken breasts, chopped
- 2 teaspoons fried oregano
- salt and pepper to season

Method

1. Put 2 tablespoons of olive oil in a heavy-bottomed pan and add the rice. Gently heat the rice for 2–3 minutes, until it looks translucent.
2. Add the onion, peppers and mushrooms and cook for another 5 minutes, stirring and being careful not to brown the rice.
3. Add the vegetable stock and bring to the boil. Turn down the heat and simmer the rice for 25 minutes, adding boiling water if necessary to ensure it does not dry out.
4. Put the chicken pieces in a fry pan with 1 tablespoon of oil and cook until lightly browned.
5. At the end of the risotto cooking time add the chicken, oregano and salt and pepper before mixing well.

TIP: You can purchase wheat-free/gluten-free vegetable stock from the health-food section of the supermarket or at health-food stores.

Questions

1. List the nutrients provided by this dish.
2. Which ingredients in this recipe provide dietary fibre?
3. How could you modify this dish to make it completely balanced?
4. Outline which specific nutritional needs this dish would meet.

Steak sandwich

This recipe uses a variety of ingredients that are both nutritious and appetising. Present this steak sandwich on a plate as though you were styling it for a magazine advertisement.

Preparation time 10 minutes
Cooking time 20 minutes
Serves 2

Ingredients

- 100 grams button mushrooms, sliced
- 1½ tablespoons balsamic vinegar
- 1 onion, sliced
- ½ teaspoon brown sugar
- 2 fillet steaks, flattened slightly
- 4 slices ciabbata or sourdough bread
- 25 grams mixed salad leaves
- 1 tomato, thinly sliced
- 150 grams canned beetroot slices, drained
- 25 grams snow pea sprouts

TIP: Try these sandwiches with thin veal escalopes or flattened chicken breast or tofu instead of steak.

Method

1. Spray a non-stick fry pan with oil and then heat the pan.
2. Add mushrooms and 1 tablespoon balsamic vinegar and cook over high heat until browned and tender. Remove from pan.
3. Add onion, remaining balsamic vinegar and sugar, and cook over low-medium heat for 10 minutes or until caramelised. Remove from pan. Clean pan, respray with oil and heat.
4. Cook steaks over high heat for 3 minutes on each side, or to your liking. Toast bread until golden brown on both sides. To assemble each sandwich, place salad leaves, tomato, onion, steak, beetroot, snow pea sprouts and mushrooms on a slice of bread and top with another slice of bread.

Questions

1. Using the Food Composition tables (found at the Healthy Eating website), outline the nutritional benefits of your sandwich.
2. What additional or alternative ingredients might you use to personalise your sandwich?

Tofu, miso and vegetable soup

The following Japanese-style vegetarian soup produces a hearty main dish, full to the brim with healthy vegetables.

Preparation time 15 minutes
Cooking time 10 minutes
Serves 1

Ingredients

1 teaspoon white miso
250 millilitres vegetable stock
1 teaspoon sesame oil
30 grams asparagus, chopped finely
35 grams snow peas, finely sliced
70 grams plain firm tofu, chopped into small cubes
1 teaspoon mirin
1 teaspoon soy sauce
1 teaspoon water
60 grams spinach

TIP: Measure the water, soy sauce and mirin then combine them in a glass so they glass so they can be added quickly together to the wok.

Method

1. Dissolve the miso into the vegetable stock. Put aside ready to be added later.
2. Heat the oil in a wok. Stir fry asparagus and snow peas for 2 minutes.
3. Add tofu, mirin, soy sauce and water, stir fry for a further minute.
4. Add stock, miso and spinach to wok. Cook for 2–3 minutes, or until the spinach has wilted. Pour into a bowl to serve.

Questions

1. Identify the ingredients in this recipe that are good sources of iron. You could use the Food Composition tables found at the Healthy Eating website to evaluate the iron content of the ingredients.
2. How could you adapt this recipe to increase the iron content for vegetarians?

Baked bananas

Follow the Tofu, Miso and Vegetable Soup (page 341) with this delicious dessert full of fruit.

Preparation time 10 minutes
Cooking time 15 minutes
Serves 2

Ingredients

½ large orange
2 firm bananas
1 tablespoon light brown sugar
15 grams butter, cut into small pieces

Method

1. Preheat the oven to 180°C.
2. Use a citrus zester to take fine pieces of zest from half of the orange, or thinly remove the zest with a vegetable peeler, then cut it into thin pieces. Cut the orange in half and squeeze the juice from both halves into a small jug.
2. Peel the bananas, slice them lengthwise and lay them in a shallow ovenproof dish. Pour the orange juice over. Sprinkle with the sugar and scatter with the butter and orange zest.
3. Bake for 10–15 minutes until the bananas are just lightly cooked and the sauce is syrupy. Serve immediately.

TIP: These bananas are delicious served hot with vanilla ice-cream or thickened cream.

Questions

1. Would you prefer to eat an orange and banana this way or raw? Explain why.
2. What other fruit could you add to the banana? How would you do this?

Cupboard muesli bars

These delicious bars are very dense and full of flavour. They are perfect for bushwalking or camping. You can vary the recipe according to what's in the cupboard, as any type of dried fruit may be substituted for the ones listed in the recipe.

Preparation time 15 minutes
Cooking time 45 minutes
Serves 4

Ingredients

375 wholemeal plain flour
220 grams plain flour
125 grams rolled oats
185 grams soft brown sugar
2 teaspoons baking powder
1½ teaspoons salt
2 eggs
125 grams honey
60 grams treacle
1 cup apple sauce
½ cup vegetable oil
185 grams raisins
90 grams sunflower seeds

Method

1. Preheat the oven to 180°C. Grease 2 × 23-centimetre square baking pans.
2. In a large bowl, stir together the wholemeal flour, white flour, oats, brown sugar, baking powder and salt.
3. In a separate bowl, stir together the eggs, honey, treacle, apple sauce and vegetable oil.
4. Pour the wet ingredients into the dry ingredients and stir until well blended. Mix in the raisins and sunflower seeds. Divide the batter evenly between the two pans.
5. Bake for 45 minutes or until the top springs back when lightly pressed. Let the bread cool in the pans for at least 10 minutes before cutting into squares or bars. Wrap pieces individually, and refrigerate.

Questions

1. Define the word 'dense' and outline why dense foods are a good choice for bushwalking or camping.
2. Identify an ingredient that could substitute the treacle.

Pizza sub production line

Your class has been asked to trial a new recipe for the school canteen. As a class you are required to work together to prepare and cook a pizza sub for each person in your class.

You will need to work collaboratively to reach the desired result.

Preparation time 15 minutes
Cooking time 10 minutes
Serves 20

Ingredients

10 bread rolls, cut in half and buttered lightly
⅔ cup of tomato paste
160 grams canned crushed pineapple
250 grams cheese
5 slices ham, finely chopped by hand or in the food processor
or 1 tomato, sliced
pinch of oregano
aluminium foil

TIP: If selling this dish in the canteen, you would transfer it to the warmer before serving.

Method

1. Preheat oven to 160°C.
2. Spread bread rolls lightly with tomato paste.
3. Top with drained pineapple, cheese and ham, or tomato slices.
4. Sprinkle with oregano.
5. Wrap base of pizza sub with foil for easy handling and to prevent roll from drying out.
6. Place in oven for 10 minutes to melt the cheese.

Questions

1. Develop a production plan for this recipe.
2. Develop a costing schedule for this recipe.
3. Invite your canteen manager or a representative to evaluate your end result.
4. Design and prepare a poster advertising your dish. Remember to put the price on your poster!

Traditional sausage rolls

Sausage rolls are a convenience food commonly served at parties and available from bakeries and corner stores, as a takeaway food item. The basic composition of a traditional sausage roll is generally a sheet of puff pastry sliced into two, wrapped into tubes around sausage meat and brushed with egg before being baked.

Preparation time 10 minutes
Cooking time 30 minutes
Makes 12 sausage rolls

Ingredients

500 grams sausage mince
1 small onion, finely chopped
2 tablespoons tomato sauce
2 tablespoons parsley, finely chopped
2 sheets frozen puff pastry, thawed
1 egg yolk or milk, for glazing

Method

1. Preheat oven to 200°C. Line a baking tray with baking paper.
2. Place sausage mince, onion, tomato sauce and parsley into a large bowl and mix with hands. Season to taste.
3. Cut each pastry sheet in half. Wet hands and divide mince into four portions.
4. Take one portion and roll into a sausage shape, about 3.5 centimetres wide and as long as the length of the pastry (approximately 25 centimetres). Place it halfway down the pastry piece.
5. Fold one side of the pastry over the mince and continue rolling. Cut into three pieces and place on prepared tray. Cut slits on top of each piece and brush with egg yolk or milk.
6. Repeat with remaining ingredients.
7. Bake sausage rolls in oven for 30 minutes or until tops are golden.
8. Serve immediately.

TIP: These traditional sausage rolls contain 927 kilojoules and 16 grams of fat.

Revamped sausage rolls

The traditional sausage roll recipe can be varied and revamped in many different ways. Some variations on the basic recipe include adding ingredients such as seasonings and sauces or using a different pastry. Sausage rolls can also be served in various lengths, for example, party or jumbo sausage rolls.

Preparation time 20 minutes
Cooking time 35 minutes
Makes 16 sausage rolls

Ingredients

- 1 small onion, finely chopped
- 400 grams lean beef mince
- ½ cup fresh breadcrumbs
- 1 egg
- ½ cup barbecue sauce
- 2 tablespoons finely chopped parsley
- 16 sheets filo pastry
- 1½ tablespoons light olive oil
- poppy or sesame seeds (optional)

TIP: These revamped sausage rolls contain 638 kilojoules and 9 grams of fat.

Method

1. Preheat oven to 180°C. Line a baking tray with baking paper.
2. Spray a non-stick fry pan with cooking spray and cook onion on low heat for a few minutes until soft.
3. Place onion in a bowl with mince, breadcrumbs, egg, barbecue sauce and parsley. Mix with hands and season to taste.
4. Unfold filo sheets and cover with a damp tea towel. Remove one sheet and use a pastry brush to lightly coat with oil. Place two filo sheets on top, lightly oil top sheet, then place another sheet on top. Turn pastry so the length is facing you and paint the furthest edge away from you with water.
5. Divide mince mixture into four portions. Take one portion and roll into a sausage shape about 2 centimetres wide, and place mince about 2 centimetres from pastry edge closest to you. Carefully roll up. Place roll joined-side down on work surface and gently pat to flatten slightly.
6. Brush top with oil and sprinkle with poppy or sesame seeds, if desired.
7. Cut into four pieces and place on prepared tray. Repeat with remaining ingredients.
8. Bake for 35 minutes.
9. Serve immediately.

Spaghetti and prosciutto

This is a variation on a traditional spaghetti dish.

Preparation time 15 minutes
Cooking time 20 minutes
Serves 2

Ingredients

250 grams Roma or egg-shaped tomatoes
½ teaspoon olive oil
1 clove garlic, chopped
1 tablespoon capers
2 teaspoons balsamic vinegar
250 grams spaghetti
1 thin slice prosciutto

Method

1. Cut a small cross in the top of each tomato. Place the tomatoes in a bowl, cover with boiling water and allow to stand for about 3 minutes. Remove the tomatoes from the boiling water and rinse under cold water. Using a small, sharp knife, pull the skin away from each tomato.
2. Cut tomatoes in half and carefully scoop out the seeds with a small teaspoon. Remove the core from the tomatoes and chop roughly.
3. Heat the oil in a large, heavy-based pan, add the garlic and tomatoes, and cook over a high heat for 5–6 minutes.
4. Add capers and balsamic vinegar. Stir to combine. Cook spaghetti until just tender in a large quantity of boiling water.
5. Heat prosciutto under a hot grill for a few minutes. Cut into thin shreds. Add sauce to drained spaghetti and toss to combine. Serve spaghetti in bowls topped with prosciutto.

TIP: For the best flavour use very ripe tomatoes. If you do not like capers, simply omit them. You will still have a rich sauce.

Questions

1. Outline the main nutrients found in tomatoes.
2. Research how prosciutto is produced.

Double corn bread

This quick and easy corn bread that originated in the corn-growing regions of America does not use yeast, so you don't have to wait for the bread to rise before baking it.

Preparation time 15 minutes
Cooking time 25 minutes
Makes 1 large loaf

Ingredients

¾ cup white flour
1½ cups yellow cornmeal (use polenta if unavailable)
1 teaspoon salt
1½ tablespoon baking powder
1 tablespoon castor sugar
50 grams butter, melted
1 cup milk
3 eggs
1¼ cups canned sweet corn, drained

Method

1. Preheat oven to 200°C. Grease and line a 22-centimetre round tin.
2. Sift the flour, cornmeal, salt and baking powder together in a large bowl. Stir in the sugar and make a well in the centre.
3. Mix the melted butter, milk and eggs together. Add this to the centre of the flour mixture and beat until just combined.
4. Using a wooden spoon, stir the sweet corn quickly into the mixture. Pour into the prepared tin and bake for 20–25 minutes, or until a metal skewer inserted into the middle comes out clean.
5. Turn the bread onto a wire rack and lift off the paper. Cool slightly and serve warm.

Questions

1. Where does this recipe originate?
2. List as many corn-based products as you can think of.
3. Even though yeast is not used in this recipe, there is an ingredient that makes the bread rise. Do you know what it is and how it works?

Butterfly cakes

This recipe is an old-time favourite for children's birthday parties, and morning and afternoon teas.

Preparation time 30 minutes (plus 15 minutes cooling)
Cooking time 10 minutes
Makes 12 cakes

Ingredients

125 grams soft butter
¾ cup castor sugar
1 teaspoon vanilla essence
2 eggs
1½ cups self-raising flour
½ cup milk
125 grams cream
2 teaspoons sugar
120 grams jam (any flavour)
icing sugar to dust

Method

1. Preheat oven to 190°C. Grease 12 medium (three-quarter cup) muffin tins.
2. With electric beaters, mix butter, sugar and vanilla essence in a large bowl until pale and creamy. Add eggs one at a time, beating well after each addition. Fold in the flour alternatively then the milk until well combined.
3. Spoon the mixture into muffin pans and bake for about 10 minutes or until a skewer inserted into the centre comes out clean. Stand for 5 minutes before turning onto a wire rack to cool. Whip cream and sugar with electric beaters until soft peaks form.
4. When cool, cut a shallow cone-shaped piece out of the top of each cake. Cut this cone in half. Fill the centre with jam and cream and arrange the two 'wings' on top of each cake. Dust with icing sugar and serve.

Questions

1. Describe the process of 'folding' flour into a mixture
2. What else could be used as a filling in the butterfly cakes?
3. List various garnishes and decorations that could be used to increase the appeal of this recipe at a party event.

Quick Christmas fruit mince tarts

This traditional Christmas recipe uses convenience foods to help save time and effort.

Preparation time 15 minutes
Cooking time 15–20 minutes
Makes 12 tarts

Ingredients

1 packet sweet shortcrust tart cases
1 cup bottled fruit mince
1 sheet frozen shortcrust pastry, thawed
2 tablespoons sugar
1 cup ready-made custard

Method

1. Preheat oven to 190°C.
2. Place tart cases on a baking tray and divide the fruit mince equally between each case. Press down with back of spoon.
3. Using a 6-centimetre fluted or plain cutter, cut 12 rounds from the sheet of shortcrust pastry. Place a pastry round on top of each tart case.
4. Brush the tops with water and sprinkle with sugar.
5. Bake for 15–20 minutes or until golden. Dust tops with icing sugar if desired.
6. Serve warm or cold with ready-made custard.

Questions

1. What raw ingredients would be required to make homemade custard?
2. List two other ingredients that may be used for filling instead of fruit mince.

Chicken and ricotta sausage rolls

Complete this recipe in class with a partner and record how long it takes.

Preparation time 30 minutes
Cooking time 20 minutes
Makes 10–12 rolls

Ingredients

1 egg
190 grams lean chicken mince
100 grams ricotta cheese
1 tablespoon finely chopped fresh basil
½ tablespoon finely chopped fresh chives
¼ teaspoon salt
pepper (optional)
1 sheet frozen puff pastry, thawed

Method

1. Preheat oven to 210°C. Cover an oven tray with baking paper.
2. Lightly beat the egg and divide it into two equal portions. Set one half aside for glazing.
3. Place egg, mince, ricotta, basil, chives and salt in a medium bowl. Season with pepper if desired. Mix well with clean hands. Halve the mixture and roll into two sausages 25 centimetres long.
4. Cut the sheet of pastry in half and brush the surface of each with water. Lay a roll of filling on the bottom third of each sheet across the widest part. Roll up like a sausage roll.
5. Use a sharp knife and cut each roll into six even pieces. Place these on an oven tray and glaze each one with lightly beaten egg. Score or pierce the surface with a sharp knife and bake for 20–25 minutes or until puffed and golden brown.

TIP: Use baking paper on the baking tray to help keep the tray clean.

Questions

1. How long did it take you to prepare this recipe?
2. Can you think of any time-saving devices or ingredients that could be used to further speed up the process?

Potato and corn chowder with warm bread rolls

This quick and hearty soup can be served as a snack or a meal.

Preparation time 15 minutes
Cooking time 20 minutes
Serves 4–6

Ingredients

- 4 small part-baked dinner rolls
- 2 brown onions, chopped
- 2 fresh corn cobs, with kernels cut off
- 350 grams potatoes, peeled and cut into small cubes
- 100 grams ham slices, finely chopped (optional)
- 50 grams butter
- 2 tablespoons plain flour
- 1 litre chicken stock
- 310 grams canned creamed corn
- ½ cup cream

TIP: Remember to use different chopping boards for meat and vegetable ingredients.

Method

1. Preheat oven for bread rolls as directed on the packet. Prepare onions, corn, potatoes and ham (optional) as directed.
2. Melt butter in a large saucepan and cook the onion for 2–3 minutes or until soft. Add the flour and heat on a low temperature, stirring for 1 minute.
3. Add stock, corn kernels, creamed corn, potato and ham to the pan.
4. Bring to the boil, reduce heat and simmer for 15 minutes or until potatoes are tender and the mixture has thickened. Heat bread rolls in the oven as directed on the packet.
5. Add cream to soup just before serving with warm, crusty bread rolls.

Question

How could this recipe be modified to make a low-fat version?

Basic butter cake

This plain butter cake recipe makes a good base for decorating because it is firm and does not collapse easily. You may ice this cake with Vienna cream icing (see page 354) for a delicious afternoon tea treat.

Preparation time 20 minutes
Cooking time 40–50 minutes
Makes 1 cake

Ingredients

125 grams butter
½ cup castor sugar
½ teaspoon vanilla essence
2 eggs
1½ cups self-raising flour
⅓ cup milk

Method

1. Preheat oven to 180°C. Line a 20-centimetre round cake tin with baking paper.
2. Beat butter and sugar until light and creamy. Add vanilla essence and beat until light and fluffy.
3. Add eggs one at a time and beat well after each addition.
4. Add half the flour and half the milk. Mix well. Add the remaining flour and milk. Beat until mixture is smooth.
5. Spread into greased tin and bake for 40–50 minutes or until a skewer inserted into the centre of the cake comes out clean. Turn onto a wire rack to cool.

TIP: Allow the cake to cool completely before turning it out of the tin to prevent it from sticking.

Vienna cream icing

This icing is very easy to work with and is a great base for cake decorating.

Preparation time 10 minutes
Cooking time nil
Makes enough icing for one cake

Ingredients

125 grams butter, at room temperature

1½ cups sifted icing sugar

2 tablespoons milk

food coloring (optional)

Method

1. Beat butter with an electric mixer until it is almost white.
2. Gradually add about half the sifted icing sugar, beating constantly. Add the milk gradually and then beat in the remaining icing sugar.
3. Add food colouring if desired.
4. The mixture should be smooth and easy to spread with a spatula.

Questions

1. As well as greasing the tin, what could be used to prevent the cake from sticking?
2. Why are the butter and sugar beaten until the mixture is light and creamy?
3. Find another type of icing that may be suitable for this cake-decorating activity.

Chicken and corn vol-au-vents

This recipe uses a variety of convenience foods that save time and effort.

Preparation time 20 minutes
Cooking time 10 minutes
Serves 6

Ingredients

- 1 packet pre-prepared small vol-au-vent cases (approximately 20)
- 1 cup cooked barbecue chicken, diced
- 1 cup corn kernels
- ½ cup corn relish
- 2 tablespoons cream
- ½ cup Kraft cheese sauce

Method

1. Preheat oven to 190°C. Place vol-au-vent shells on a baking tray that is lined with baking paper.
2. Combine chicken, corn kernels, corn relish, cream and cheese sauce in a small saucepan. Stir over a moderate heat until bubbling.
3. Spoon filling into each shell and heat in oven for 10–15 minutes. Serve warm.

TIP: Serve the vol-au-vents with some skilfully designed garnishes, such as celery curls.

Questions

1. How long did it take you to prepare the vol-au-vents?
2. What is your opinion of these vol-au-vents in terms of appearance, aroma, flavour and texture?
3. What other fillings could you use with this recipe?

Marble cake

This is an old-fashioned favourite!

Preparation time 20 minutes
Cooking time 25 minutes
Makes 2 bar tins

Ingredients

- 1 cup self-raising flour
- ⅓ cup plain flour
- ⅔ cup castor sugar
- 100 grams butter, softened
- ½ cup milk
- 2 eggs
- ½ teaspoon vanilla essence
- 2–3 drops red food colouring or
- 1 tablespoon strawberry topping
- 1 tablespoon cocoa powder, sifted

Method

1. Preheat oven to 180°C. Brush 2 bar tins with melted butter to lightly grease. Line with non-stick baking paper.
2. Place the self-raising flour, plain flour, sugar, butter, milk, eggs and vanilla essence in a large mixing bowl. Use an electric beater to beat on low speed for 30 seconds or until just combined. Increase the speed to high and beat for 1–2 minutes or until the mixture is thick and all butter is incorporated.
3. Divide the cake batter equally into three bowls. Add a few drops of red liquid food colouring to one portion and stir until well combined. Combine the cocoa powder with another portion and stir until well combined. Leave one portion as it is.
4. Place alternate spoonfuls of the 3 mixtures into the prepared pans. Use a spoon or knife to gently swirl the batters together to create a marble effect. Tap the base of the pan on a flat surface to smooth the surface.
6. Bake for 20–25 minutes or until a skewer inserted into the centre comes out clean.
7. Remove from oven and set aside in pan for 5 minutes. Turn onto a cake rack to cool completely.

Questions

1. What term is used for an oven set at 180°C?
2. Besides checking with a skewer, how else can you check the cake is cooked?
3. Marble cake is been a traditional cake found in many early Australian cookbooks. Name another traditional Australian dish.

Tuna sushi

Sushi is a nutritious snack or meal.

Preparation time 15 minutes
Cooking time 30 minutes using pre cooked rice
Serves 2

Ingredients

1 cup sushi rice, pre-cooked and cooled
1 tablespoon sushi vinegar or rice wine vinegar
¼ cup tuna in oil, drained, flaked
1 tablespoon good-quality mayonnaise
2 nori sheets
½ carrot, julienned
½ cucumber, julienned
soy sauce, to serve

Method

1. Combine the cold rice and vinegar. Set aside.
2. Combine the tuna and mayonnaise in a bowl.
3. Place 1 nori sheet, shiny-side down, on a clean work surface, with 1 long side facing you. Use wet hands to spread half of rice mixture over the bottom two-thirds of nori sheet, leaving a border around edge.
4. Spread 2 tablespoons of tuna mixture along centre of rice. Top with carrots and cucumber. Roll up to enclose. Repeat with remaining nori, rice mixture, tuna mixture, carrot and cucumber.
5. Wrap each roll in plastic wrap. Place in fridge for 10 minutes to chill. Cut each roll in half. Serve with soy sauce for dipping.

TIP: Using a bamboo mat helps in the rolling process.

Questions

1. Suggest alternative fillings for sushi.
2. Suggest two reasons why sushi is increasing in popularity.
3. Give an example of a dish for which the following types of rice are best.
   - basmati
   - jasmine
   - long grain
   - short grain
   - Arborio
   - brown

Thai green curry chicken

Thai cuisine became very popular in Australia in the 1990s and there are now Thai restaurants in many suburbs and towns.

Preparation time 10 minutes
Cooking time 15 minutes
Serves 2

Ingredients

½ tablespoon vegetable oil
200 grams chicken thigh fillets, trimmed, cut into 3-centimetre pieces
½ zucchini, thickly sliced, or some broccoli
1 tablespoon green curry paste
1 × 150 millilitre can light coconut cream
1 teaspoon brown sugar
1 teaspoon fish sauce
1 kaffir lime leaf, torn, or 1 teaspoon lime juice
¼ cup frozen peas
1 cup cooked steamed jasmine rice, to serve

Method

1. Heat oil in a saucepan over high heat. Add chicken. Cook, stirring, for 4–5 minutes or until browned. Reduce heat to medium–high heat.
2. Add zucchini or broccoli. Cook, stirring, for 2 minutes or until zucchini or broccoli starts to soften.
3. Add curry paste. Cook, stirring, for 1 minute or until fragrant.
2. Add coconut cream, sugar, fish sauce and lime leaf or juice. Bring to the boil. Reduce heat to medium–low. Simmer for 5 minutes or until sauce starts to thicken. Add peas. Simmer for 2 minutes or until heated through. Serve with steamed rice.

Question

In your notebooks, write the ingredients in the recipe under the appropriate storage temperature.

0–4°C	–18°C	10–15°C

White chocolate pannacotta with raspberry coulis

Pannacotta is Italian for 'cooked cream'.

Preparation time 10 minutes
Cooking time 5 minutes, 3 hours to set
Serves 2

Ingredients

Pannacotta

½ cup thickened cream
⅓ cup milk
70 g white chocolate, chopped
1 tablespoon castor sugar
1 teaspoon gelatine
2 teaspoons just-boiled water

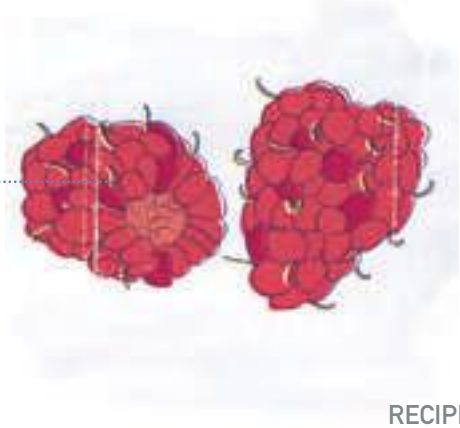
Raspberry coulis

100 grams frozen raspberries
2 tablespoons icing sugar, sifted

TIP: To remove pannacotta from mould, run a palette knife around the edges of the mould. Dip mould in warm water for a few seconds. Invert onto serving plate, shake, then gently remove mould.

Method

1. Lightly grease two half-cup moulds. Arrange on a baking tray.
2. In a small saucepan, combine cream, milk, chocolate and sugar. Stir over low heat until melted and smooth—do not boil.
3. In a small jug, whisk gelatine into water vigorously with a fork until dissolved. Cool slightly. Blend into cream mixture.
4. Pour mixture evenly between prepared moulds. Chill until set.
5. To make raspberry coulis, process berries in a food processor or blender until smooth. Push berries through fine sieve into a bowl. Stir icing sugar into sauce.
6. Gently slide pannacottas from moulds and serve drizzled with raspberry coulis.



Questions

1. What other berries can be used to make the coulis?
2. Why shouldn't you boil the milk mixture?
3. How else could you decorate this dessert?

Buttermilk pancakes

In the Christian calendar, pancakes are traditionally served on Shrove Tuesday before Easter. Variations of the pancake batter are also part of many traditional foods for many other cultures around the world.

Preparation time 10 minutes
Cooking time 15 minutes
Serves 2

Ingredients

1 cup self-raising flour, sifted
1 tablespoon castor sugar
1 egg, separated
15 grams butter, melted
½ teaspoon vanilla extract
1 cup buttermilk
toppings, to serve (your choice)

Method

1. Combine flour and sugar in a bowl.
2. Combine egg yolk, melted butter, vanilla and buttermilk in another bowl.
3. Whisk buttermilk mixture into the flour mixture.
4. Beat egg white in a small bowl until soft peaks form.
5. Fold egg white gently into the batter.
6. Pour a quarter of the batter into a small greased fry pan. Cook over medium heat until browned lightly and flip over and cook.
7. Serve pancakes with maple syrup, ice-cream, fresh fruit or other toppings.

Questions

1. What is the name of the thin pancake associated with French cuisine?
2. How do you avoid lumps when making pancake batter?
3. Which ingredients in this recipe help the pancake to rise when heated?
4. Design a filled savoury pancake that can be cooked for dinner.

Melting moments

Delicious melting moments are difficult to get just right.

Preparation time 10 minutes
Cooking time 12 minutes
Makes 25 biscuits

Ingredients

125 grams butter, softened
¾ cup plain flour
¼ cup icing sugar
⅓ cup custard powder
60 grams butter, softened, extra
⅔ cup icing sugar, extra
2 teaspoon finely grated lemon rind
1 tablespoon lemon juice

Method

1. Preheat oven to 160°C. Line 2 oven trays with baking paper.
2. Use an electric mixer to beat butter until pale and creamy. Add the flour, icing sugar and custard powder and use a wooden spoon to stir to combine.
3. Use your hands to roll teaspoons of the dough mixture into balls. Place the balls 3 centimetres apart on the lined trays. Use a fork dusted in icing sugar to gently flatten.
4. Bake in preheated oven, swapping trays halfway through cooking, for 15 minutes or until just cooked through. Remove from oven and set aside for 30 minutes to cool.
5. Use an electric mixer to beat the extra butter and icing sugar in a bowl until light and fluffy. Add the lemon rind and juice and beat until combined. Spread the butter mixture over the flat side of half the biscuits and sandwich together with remaining biscuits.

Questions

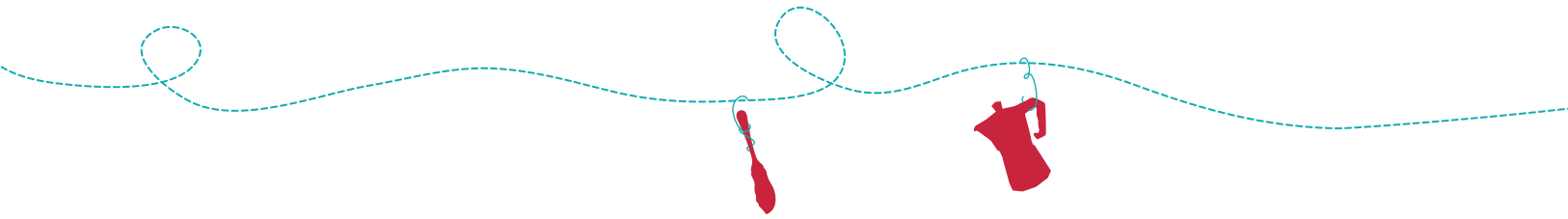
1. When do biscuits become crisp?
2. What is the role of the custard powder in this recipe?
3. How would you package these biscuits?
4. How would you market these biscuits?

Index

Aboriginal Australians
  Australia Day and 237
  food inequity and 97, 99
  welfare payment quarantine and 100
Aboriginal celebrations 241
Aboriginal food sources 59–66, 67, 69, 90
active non-nutrients 172–4
adolescents, nutritional needs of 52, 150, 151, 207, 210
adults, nutritional needs of 52–3, 151, 208–9
advertising 81, 139, 140, 158, 159, 164, 165, 278
age, diet and 248
aged people
  calcium and 150
  food inequity and 98, 99
  nutritional needs of 127, 150, 151, 209, 210
aid agencies 115–16
airline food 125, 126, 129, 178, 224–6, 250
à la carte menu 24, 188, 189, 190, 199
alcohol 52, 67, 69, 148, 185, 205, 220, 221, 276
alcoholism 69, 101, 214
Alexander, Stephanie 23
allergies 187, 248
anaemia 42, 150, 159, 205, 214, 218
anaphylaxis 99, 211, 212
animal rights 76
anorexia nervosa 45–6, 81, 145, 159, 214, 218
antioxidants 9, 172
appetisers 188, 189
appetite 76, 150
ARIA Restaurant 181
aroma 19, 135, 246
artificial colours and preservatives 212
artificial sweeteners 20
Asian food 16, 86, 226
athletic diets 219, 227
Australia
  causes of death in 216
  farming in 104–5
  food changes in 47–8, 58–90, 276–7
  food inequity in 96–102
Australia Day 67, 237, 245
Australian Bureau of Statistics 87, 131, 214
Australian Food and Grocery Council (AFGC) 163, 165, 168
Australian Government 115, 169
Australian Guide to Healthy Eating, The 56, 84, 169, 171, 210
Australian history, food in 67–70, 74–5
Australian native foods 59–66

babies, menus for 246
back-of-house food employment 179, 180
bacteria, beneficial 39
Bajgerytsch, Emma 55
barbecues 74, 77, 86, 237, 241
Barclay's Café 202
basic ingredients 16–18
beer 41, 186
beliefs, food and 77
berries 64, 74
B group vitamins 19, 35, 205
birthday celebrations 241, 256, 257
bistro meals 177, 197, 269
blind tests 28,135
blood pressure 266, 267
body image 45, 81, 158
body mass index (BMI) 217
body size 150
body weight 145
bombonieres 276, 277
bottling 10, 28
bread 40, 167, 234–6
breadmaking machines 157
breakfast 122, 190, 265
breakfast cereals 38, 50, 122, 273, 278
breast-feeding 49, 52, 94, 95, 115, 205–7, 210
Breheny, Paul 199
Bruneteau, Paul 60–1
budget constraints 108, 133, 135, 136, 251
buffet meals 24, 197, 237, 245, 269
bulimia 81, 214, 218
bush tucker 59–66
bushwalking diet 222, 227

cafés 129, 182, 191, 202, 269
caffeine drinks 122, 266
cakes 25, 98, 256, 257
calcium 35, 150, 173, 205, 207, 267
camping diet 124, 128, 222, 223, 227, 245
canapés 181, 194, 237
cancer 55, 108, 172
canned foods 7, 27, 88, 107, 251
canola 104, 263
carbohydrates 14, 16, 33–4, 145, 147, 148, 149, 159, 248, 266
casual workers 177, 179
Caterair 225
catering 176–203, 244
Cathay Pacific Airways 250
Cerqueira, Antonio 268
chefs 60–1, 126, 179, 181, 242, 253, 274, 278
chemical additives 7, 9
children
  diet for 52, 81, 150, 151, 154, 171, 198, 199, 207, 208, 234, 241, 248, 252, 256
  food inequity and 96
chilli 264, 268
Chinese foods 71, 127
Chinese New Year 238, 241, 277
chocolate 48, 51, 139, 163, 265
cholesterol 43, 150, 267
Christmas foods 191, 234, 237, 239, 245, 276
chronic disease 99, 130
cleaning area 253
clean water 92
Clermont Nursing Home 224
climate 65, 103
Coca-Cola 13, 139
cocktail parties 237, 245, 259
coeliac disease 41, 147
colours 12, 19, 20, 24, 172, 246
commercial catering 253–4
competition, food and 96, 132–3
complex carbohydrates 33, 37, 207, 219, 227
condiments 129, 272
consumer feedback 121, 123, 137, 138
consumer rights and responsibilities 185
consumption patterns 32–57, 83–7, 159–61
convenience foods 23, 26, 127, 251, 252, 258, 259

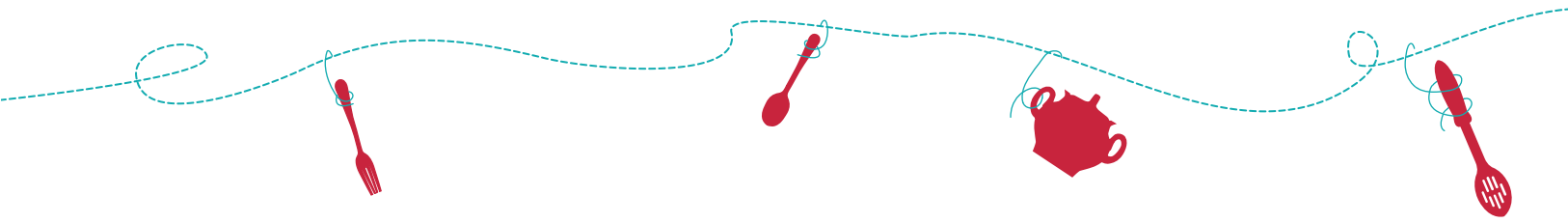


cook-chill preparation 226
cooking, reasons for 12–13
cooking area 17, 253
cooking demonstrations 108
cooking TV shows 194, 278, 279
cool climate foods 77
Cornius, Gary 216
coronary heart disease 43, 214, 216, 267
cost 193, 198
Crews, Bill 118
criteria and aims 132–3
cultural background, diet and 47, 80, 105, 127, 220–1, 227, 237, 248, 276
culture, microorganism 173

dairy foods 43, 104, 212
dairy industry 88
damper 67, 69, 235
death, causes of (Australia) 216
Debus, Bob 97
decorations 255, 257, 271, 272
degustation menus 188, 199
dehydrated foods 124, 125, 222
dehydration 9, 36, 222, 227
dementia 99
dental decay 214, 218, 266
design brief 136, 138
desserts 35, 188, 189, 190
diabetes
  type 1 41–2
  type 2 41–2, 47, 69, 114, 130, 161, 214, 218
dietary guidelines 49–50, 84, 127, 152, 169, 171, 210, 258
diet changes, multicultural 71–3
dietitians 153, 163, 229
diet-related disorders 41–4, 47, 83–4, 214–17
digestion 146–7
dining, trends in 268–70
dinner parties 245, 259
disabled people, food inequity and 98
disease
  Aboriginal Australians and 99
  elimination of 115
  water scarcity and 92
disposable income, product innovation and 129
diverticulitis 37, 159
dried peas 67, 68
drug abuse 101, 205
du jour menu 188, 189

Easter 237, 239
eating disorders 45–6
economic situation, diet and 83–4, 156, 177
Edgell, R. G. 88
Edible Garden 23
educational level, food and 106, 115
eggs, allergy to 212
electrolyte replacement drinks 266, 267
Elliott 109
Ellis, Kate 45–6
emaciation 159
emergency relief 115–16
emerging products 141–2
emotions, food and 76
employment, food industry 22, 177, 179–84
emu meat 61, 64
energy sources 33–4, 145, 219, 248
entreé 188, 189
environmental factors 22, 85, 185, 217
  food contamination and 8
  food innovation and 130
  packing and 28
enzymatic changes 5
equipment 242–3, 251
Ethiopia, women food providers in 96
European settlers 59, 67–70
Everyday Wellbeing foods 265
Exchericia coli (E. coli) 6
Exodus Foundation 118, 178

fair trading 106, 185
families, diet and 47, 155, 241, 270
farming 104, 157
Farrugia, Paul 199
fashion industry, anorexia and 45–6
fast-food outlets 81, 164, 165
fasting 221, 239
fats 34, 35, 43, 145, 167, 228, 230, 266
fibre 19, 37–8, 62, 205, 228
Fine Foods Australia 122
finger food 197, 276
first-in, first-out (FIFO) system 195, 196
fish 43, 64, 68, 272
flavour 12, 19, 20, 135, 246
flooding 106, 115
flour 67, 68
folate 35, 205
food additives 20, 29, 142
food allergies 29, 99, 211, 212, 213
food appeal 246–7
food changes, Australian 47–8, 58–90
food costs 156
food deliveries 155
food deterioration and spoilage 5–8
food development 120–43
food distribution, patterns of 91–119
Food for Kids 208
food functions 14–15
food habits 69, 77, 155–8
food inequity 91–119
food innovations 129–31
food intolerance 211, 213
food labelling 29–30, 164, 166, 187, 230
food manufacturers, nutrition and 164, 166, 168
food nutrient groups 33–6
food ordering 195
food photography 255, 273–5
food presentation 197, 255–9, 271–2
food preservation 9–11
food safety 2–4, 26, 29
food security 92
food selection 54–6, 76–82
food service 176–203, 268–70
food standards 185
Food Standards Australia and New Zealand (FSANZ) 163, 167, 168, 208
food storage 7, 9–11, 195
food stylists 255, 257, 273–5
food trends 261–81
food wastage 22, 79
formal dining 197, 237, 269, 270
Fratelli Del Mare 199
free meals 178
free-range products 262
freeze-dried products 124, 125, 222
fresh foods 156, 199, 252, 263
frozen foods 7, 10, 196
fruit and vegetables 23, 74, 104, 107, 109
frying 18, 19
full-time food employees 179



function menus 188, 189, 199
functional foods 39, 174, 266, 267

garnishes 24, 25, 255, 257, 271, 272
Gatorade 266
gender, nutritional needs and 150
genetically modified (GM) foods 141, 263
geography, food and 62, 77, 103, 155
George Weston Foods 229
glass packaging 27, 28
global food distribution 92, 106, 110
glucose 41, 147
gluten-free products 40, 41, 213
glycaemic index (GI) 50, 219
Go for 2 & 5 program 108
Good Taste 75
gourmet bush tucker foods 65
governments, nutrition and 163, 166, 167, 168
Greek cooking 16, 277
green revolution agriculture 115
Gross Domestic Product (GDP) 94
guéridon service 197

halal food 221, 250
health foods 50, 279
health status, diet and 39–40, 105, 110, 144–75, 211–13, 248
healthy eating guides 164, 169–71
Healthy Eating Pyramid 54, 169, 246
Healthy Heart tick 50, 229
heart disease 47
heat-and-serve meals 264–5, 267
herbs 16, 24, 230, 264, 267
high-energy foods 222
high-fibre foods 37–8
high-risk farming 112
Hindus/Buddhist diets 220, 221, 240
homeless people, food inequity and 101
Horton, Janel 247
hospital diets 191, 223
Hot Rocks Events + Catering 180
hunger 76, 106, 107, 114, 150
hunting and gathering 62, 63, 99
hygiene 2–4, 185–6, 226, 242–3
hypertension 44, 47, 172

ice-cream 20, 21, 272, 273, 279
illicit drugs 101
immigration, sources of 71–2
income, food availability and 48, 78, 94
Indian cooking 16
Indigenous Australians, *see* Aboriginal people
Indonesia 112
industrial food processing 20–2
infants, nutritional needs 52, 94, 95, 151, 207
influences, food selection 76–82
initiation ceremonies, Aboriginal 238
internet 139, 164
investment, food development 122–8
iron 36, 42, 152, 170, 205, 214, 218, 219
irrigation 85, 92
Islam celebrations 239
Italian cooking 16

Japanese diet 16, 238
Jewish diet 220–1, 239, 248
Johnstone, Yogi 256
juices 37, 262
julienne strips 255
junk foods 46, 81, 160, 162–3, 170

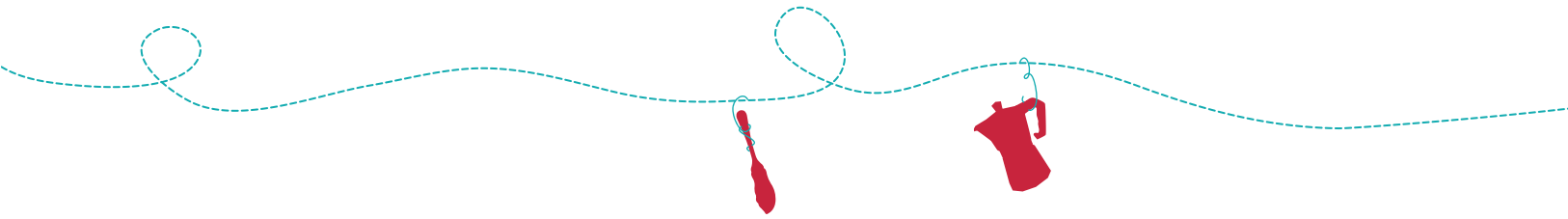
kangaroo meat 61, 62, 64, 86
kilojoules 33, 52
kitchen gardens 23
kitchen layout 23, 253
kosher foods 239, 250
Kraft Foods 88, 166

labour-saving devices 129
lactation, diet for 52, 205, 210
lacto-ovo-vegetarian diet 220
lean cuisine 86, 265
leavened bread 234, 235
legislation, food standards 166, 167
Lewis, John and Judy 202
life stages, nutrititon and 52–3, 205
lifestyle choices 108, 219–27
line enhancements 122, 138
lipids 15, 16, 34, 147, 149
Loaves and Fishes Free Restaurant 118, 178
logistics, diet and 222–7
low-fat diet 44, 192, 193
low-GI foods 41, 50, 173
low-income groups 83, 96
low-kilojoule foods 228, 230
lunch 129, 190

McDonald's 139, 158, 164, 170, 268
main course 188, 189
malnutrition 45, 114, 209
marketing 121, 127, 135, 137–8, 139, 278–80
mass media, diet and 158
meal replacements 265–6
measuring utensils 17
meat 67, 68, 69, 86, 273
media influences, food and 81
menopausal women 172
menus 13, 187, 188–94, 243, 246–52
microwave ovens 121, 122, 157
Millington, Janel 225
minerals 35–6, 149, 207
Mrs Crocket's salads 263
modified atmosphere packaging (MAP) 26
modified foods 121, 164
monosodium glutamate (MSG) 213
Moran, Matt 181
moulds 5, 7
muesli 38, 266
multicultural food influences 71–3
multinational companies 109, 158
Muslim diet 221, 277

National Heart Foundation 55, 228
non-profit food providers 177, 178
NSW Food Authority 185, 186
nursing home menu 190, 223–4
nutrients 145, 148–54, 210
nutrition 19, 29, 32–57, 84, 94, 130, 227, 229, 246

obesity 23, 41–2, 46, 47, 52, 152, 153, 159, 162, 164, 207, 208, 214, 215, 216, 217
occupational health and safety 183
oils 34, 43, 171
online shopping 157, 158
Oporto restaurants 268
organic produce 23, 262, 267
osteoporosis 43, 53, 147, 150, 159
outdoor eating 77, 237, 269
overnutrition 41–4, 95, 114, 159, 160–1
overweight 159, 160, 209, 246



packaging 22, 26–30, 50, 84, 85, 88, 123, 128, 134, 142
packet cake mix 98, 130
partly prepared foods 258
peeling 17, 18, 19
peer pressure, diet and 155
perishable foods 222, 223
Perry, Neil 126, 224, 226
physical exercise 43, 44, 53, 209, 265
physiological factors, food selection and 76
phytochemicals 172, 174
picnic lunch 245
plant traditional food sources 64
plastic packaging 27, 28, 123
plate service 197, 272
pollution, packaging and 28
pork 86, 220, 221, 239, 248, 276
portion sizes 163, 164, 187, 193, 248
poverty 83–4, 178
pregnancy, diet and 52, 150, 151, 154, 205–6, 210
preparation area 253
pre-prepared foods 22, 83, 84, 258, 263
preservatives 20, 26
probiotics 39, 173, 174
processed foods 22, 48, 78, 228
product design 132–6
product loyalty 123, 128
promotion trends 139–40, 278, 279, 280
proteins 14, 16, 33, 62, 114, 145, 147, 149, 150, 151, 152, 159, 205, 213, 219, 227, 228, 265
psychological factors, food selection and 76
purchasing systems 195–6

Qantas Airways 126, 224, 226
quick-frozen meals 226

Ramadan 239, 277
rationing 67–8, 69, 70
recipe development 133, 192–4
recipe writing 11, 18, 192, 193
Recommended Dietary Intakes (RDIs) 151, 152, 208
recycling 22, 28
refrigeration 21, 88, 125
refugees
  flooding and 115
  food inequity and 101
  war and 106, 107
religion, diet and 80, 105, 110, 155, 220–1, 227, 235, 236, 239, 242
restaurants 23, 126, 177, 199, 269
Riberries Taste Australia restaurant 60
rice 47, 51, 67, 85, 103, 104, 112
Richards, Trish 126
rights and responsibilities 183–4, 185
Riley 212
Rockpool Consulting 126
Rowntrees the Australian Restaurant 60

safe work practices 4, 183
salads 48, 170, 263
salt 9, 36, 44, 64, 208, 228, 266, 230
satiety value 76
saturated fats 34, 43, 170, 171
sausages 72, 86
Saxelby, Catherine 170
school canteen diets 153, 154, 162, 165, 171, 191, 223, 227
seasonal food purchases 63, 78, 190
sedentary lifestyle 41, 43
sensory assessment 12, 133, 135, 137
service area 253
service clubs 177
service styles 24
serviettes 198, 255
serving food 255–9
silver service 24, 197
simple carbohydrates 33
single-parent families 83, 241
single-person households 127
small businesses 201–2, 243
smoking 52, 55, 185, 205
smoking (food) 9–10
smorgasbord 259
snack foods 48, 162, 265–6, 267
social celebrations 237, 241
society, nutrition levels and 77, 83, 162–8
socio-economic status, food distribution and 105, 110
sodium 36, 170
soy beans 172, 220
Spa (Indonesia) 112
space foods 125, 128
special needs foods 124, 204–32
special occasions foods 190, 233–60
spices 16, 230, 264, 267
sports 177, 194
sports drinks 266
Stanton, Rosemary 153, 167, 170, 279
staphylococcus 6
staple foods 103, 110, 234, 235
starches 33
Stastny, Theresa 274
Stephanie Alexander Kitchen Garden Program 23
stir-fries 273
subsistence farmers 92
sugar 9, 33, 34, 88, 167, 170, 266
supermarkets 84, 87, 159
super-obesity 217
support networks 228–30
sushi 16, 276
sustainability 61, 92, 130
Sweet Dreams Cakes 256
sweets 69, 162, 163

table d'hôte menu 188, 189, 190, 191, 199
table settings 200, 270
takeaway meals 197, 268
tamper-proof products 123, 128
target market 132, 135
taste 12, 135, 249
tea 68, 129, 238
technological change
  food distribution and 109
  food processing and 47, 79, 88
  diet and 157
Tennant Creek 109, 110
test kitchen 133
tetrapack 30
texture 12, 19, 24, 135, 246
Thai garnishes 271
time allocation 251, 253
tomatoes 24, 43
Tstix 129
Tukka Restaurant Advanced Australian Fare 74

undernutrition 41–4, 45, 94–5, 159
unleavened bread 234, 235
use-by date 78
Usic, Kathy 229

vacuum packaging 11, 27
Valentine's Day 240, 245
vegan diet 33, 152, 220, 227
vegetables 23, 68, 69
vegetarians 33, 130, 152, 220, 227, 230, 250, 276
villi 147
Vitamin A 35
Vitamin B 52, 101, 150
Vitamin B12 220
Vitamin C 19, 35, 43, 52, 68, 83, 146, 154, 220, 262
Vitamin D 35, 205, 220
vitamins 35, 50, 62, 149, 207

war, food distribution and 106, 107
water use 36, 56, 64, 92, 93, 95, 96, 103, 107, 205
Wayside Chapel 118
weaning 207
wedding celebrations 200, 241, 245, 276
weight gain 49, 69
weight loss 45–6, 218, 265
wheat 103, 104, 155
wheat intolerance 212
Wilcannia 109
Windsor Farm Group 107
women
  food inequity and 96
  food provision and 96
Woolworths 279
workflow plan 253–4

yeast 5, 7, 235
yoghurt 39, 173
yoplait elivaé 173

Zen Buddhism 238

Index of recipes

apricot choc chip muesli bars 320

baked bananas 342
basic butter cake 353
battered fish and chips 330
bush damper 307
butterfly cakes 349
buttermilk pancakes 360

caesar salad 332
café-style scrambled eggs 298
chargrilled beef salad 335
chicken and corn vol-au-vents 355
chicken and hokkien noodle stir-fry 289
chicken and ricotta sausage rolls 351
chicken noodle omelette 312
chicken parmigiana 333
chicken risotto 339
chocky rocks 284
chocolate caramel slice 329
chocolate fudge slice 293
coconut and passionfruit rice 317
contemporary Aussie damper 308
corn tortillas 315
cupboard muesli bars 343

double corn bread 348
dreamy fudge 291
dried apricot jam 287

easy lasagne and garden salad 327
easy-as apple pie 295

first-class flathead 319
frozen dessert 324
fruit roll 294

garlic pizza 302
ginger beer 285–6

hot, rich potato salad 328

jam drops 322

lamb burgers 314
lamb rissoles with mint pea mash 301
lemon myrtle cooler 304

marble cake 356
marinated seafood with tabouli 338
melting moments 361
minced beef pies 310
minestrone soup 300
mini quiches 331

orange and chickpea couscous 313

pad Thai 309
pesto 323
pizza pockets 321
pizza sub production line 344
plum jam 318
plum pork and vegetables 325
potato and corn chowder with warm bread rolls 352
potato pea mash 311
profiteroles 334

quick Christmas fruit mince tarts 350
quick vegetarian pizzas 326

revamped sausage rolls 346
roasted apple, macadamia and wattleseed muffins 305

sago custard and peaches 316
spaghetti and prosciutto 347
stained glass biscuits 290
steak sandwich 340

Tandoori chicken wrap 299
Thai green curry chicken 358
three-ingredient party pies 296
tofu, miso and vegetable soup 341
tomato relish 288
traditional damper 306
traditional sausage rolls 345
tuna and fetta turnovers 337
tuna sushi 357

vegetarian sushi 292
vegie pancakes with ham, tomato and avocado 336
Vienna cream icing 354
Vietnamese rice paper rolls 297

warm chocolate puddings 303
white chocolate pannacotta with raspberry coulis 359