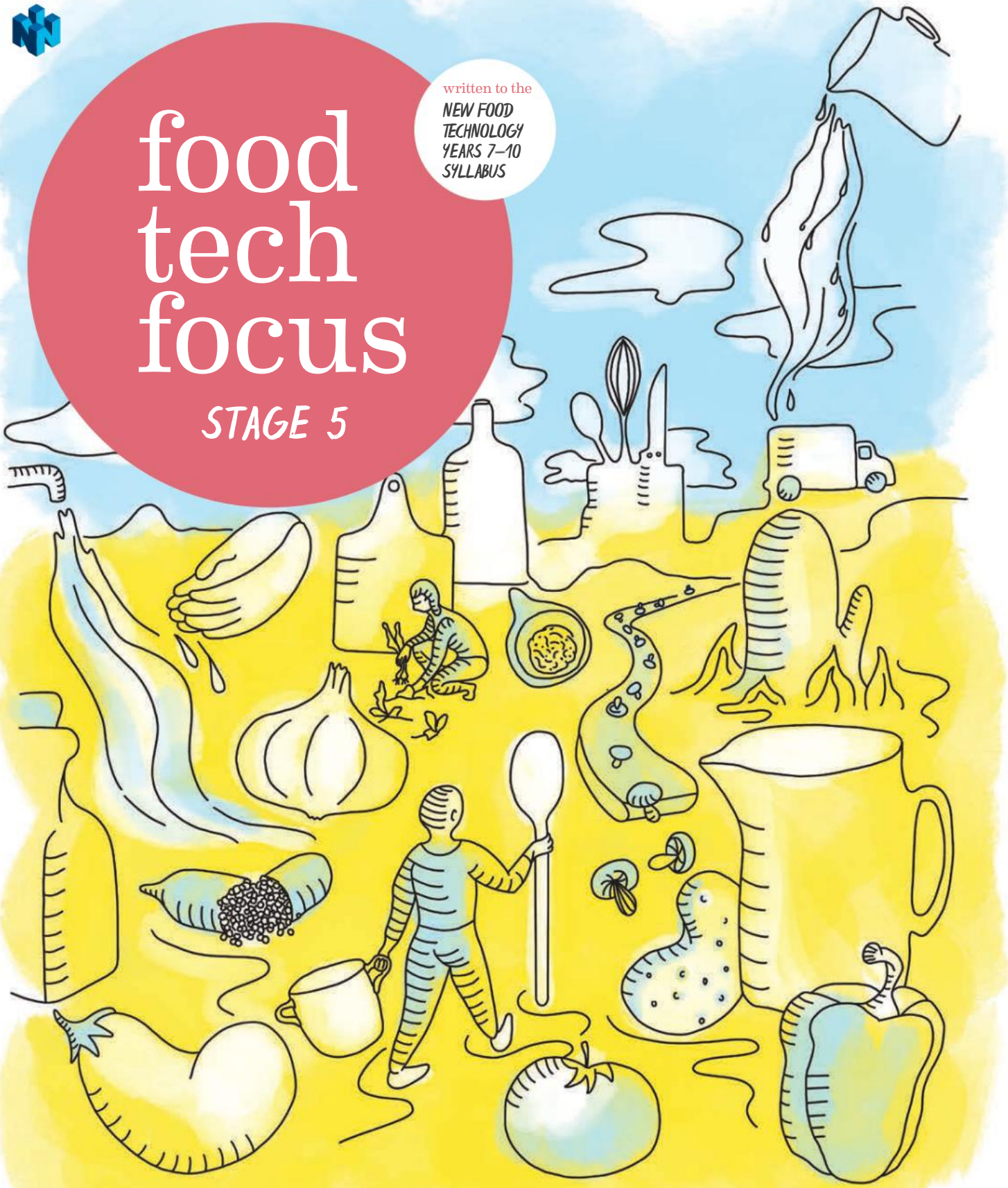
food tech focus

written to the NEW FOOD TECHNOLOGY YEARS 7–10 SYLLABUS

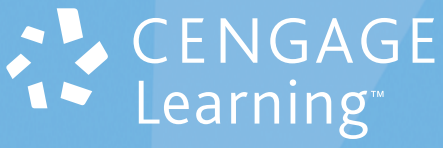
STAGE 5



PAMELA MALONE, GERALDINE BLAKE, ROSALIE GUALTIERI,
RACHAEL CORNIUS-RANDALL, AMBER FANNING

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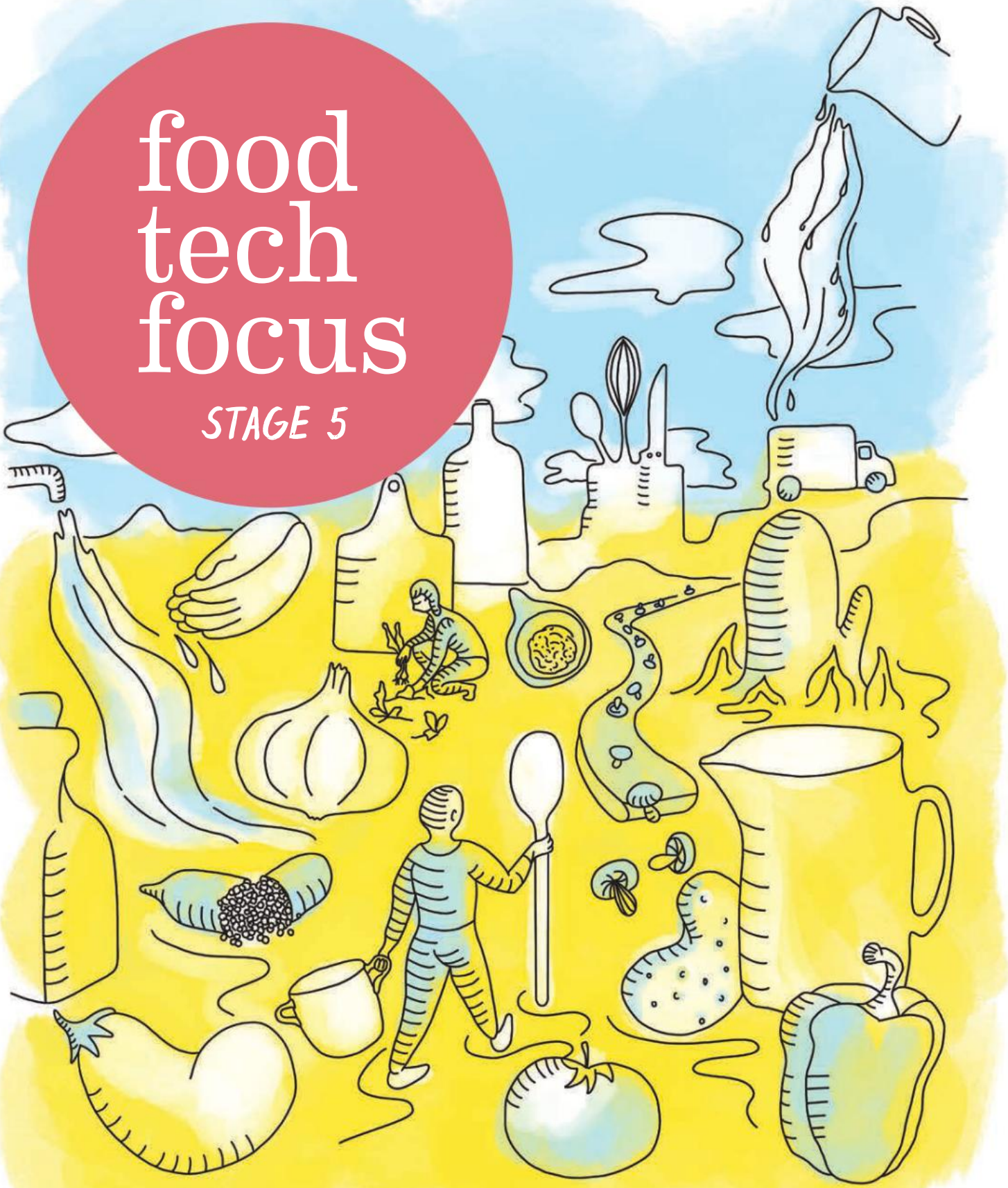
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Food Tech Focus Stage 5
3rd Edition
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Publisher: Sam Bonwick
Project editor: Kathryn Coulehan
Proofreader: Robyn Flemming
Indexer: Max McMaster
Project designer: Linda Davidson
Cover design: Emilie Pfitzner
Original text design: Aisling Gallagher. Adapted by: Linda Davidson
Toolkit infographics: Jennai Lee Fai, Jenki
Photographer and stylist: Mark Fergus
Chapter opener images: Mark Fergus
Chef and stylist: Melanie Vandegraaff
Photo shoot production: Rhonda Fergus
Tableware: Cedar Hospitality Supplies
Photo shoot venue: Belgrave Heights Christian School Trade Training Centre
Permissions researcher: Debbie Gallagher
Production controller: Karen Young
Typeset by: Q2A Media

Any URLs contained in this publication were checked for currency during the production process. Note, however, that the publisher cannot vouch for the ongoing currency of URLs.

Acknowledgements
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ISBN 978 0 17 044285 5

Cengage Learning Australia
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South Melbourne, Victoria Australia 3205

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331 Rosedale Road, Albany, North Shore 0632, NZ

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Printed in Singapore by 1010 Printing International Limited.
1 2 3 4 5 6 7 23 22 21 20 19

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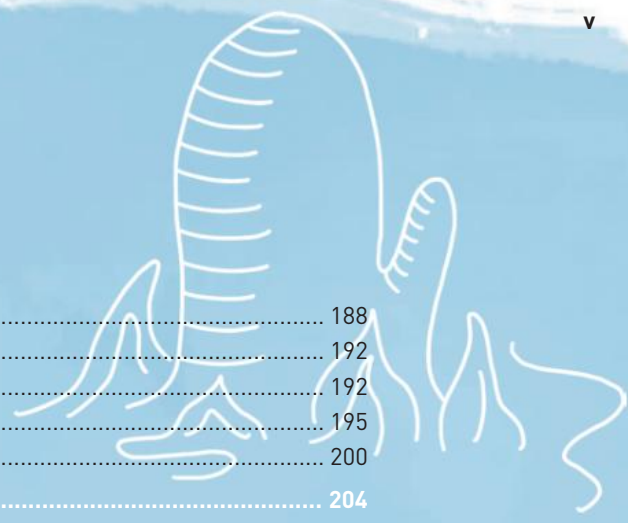
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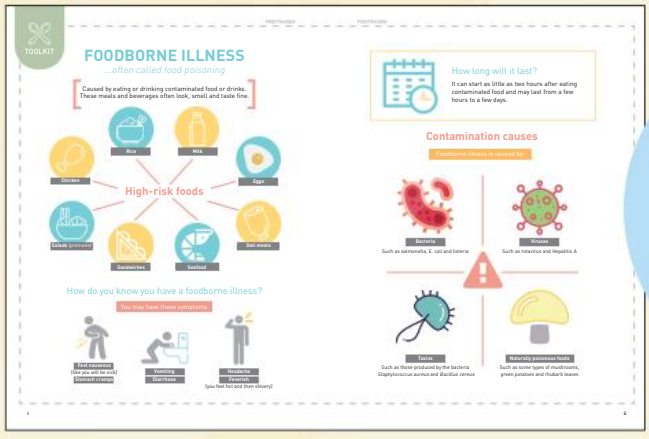
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Introduction

Food Tech Focus, the leading resource for the New South Wales Stage 5 Food Technology syllabus, has been updated to meet the requirements of the new syllabus for implementation in 2020.

This third edition includes:

- A new introductory chapter that reinforces the knowledge required for the outcomes associated with hygiene, WHS issues and food processing, preparation and storage.
- Redesigned chapter openers with emphasis on what students are being asked to do in each focus area, updated food facts to kick-start class discussion and collaboration, and updated food words to reflect new content.
- Updated recipes and activities with even more opportunities to learn through a variety of practical experiences and a project-based approach.
- Updated content to reflect changes in the wider industry and policy context.
- The inclusion of cognitive verbs to the glossary and as bolded terms in the chapters.
- New online resources, including quizzes to check students' prior knowledge for every focus area.



Essential information on safety, hygiene and practical skills is introduced in a concise and visual infographic format across seven double-page spreads. The infographics can be referred to throughout the course and are also available to download on NelsonNet.



Chapter openers now feature clearly stated learning intentions with the relevant verbs in bold, along with a brief introduction to the focus area, recipes, food facts and food words





Unit reviews
Chapters are divided into units of learning. Graded activities and questions are provided at the end of each unit for students to apply the knowledge and skills learned.



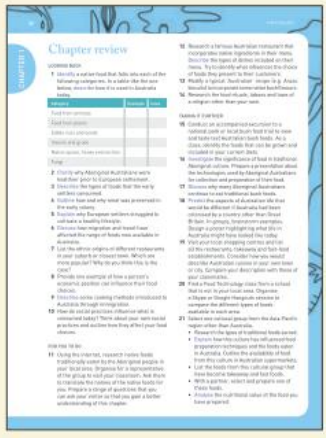
Food in focus
Using a case-study approach, this feature provides questions to consolidate and extend students' knowledge of the unit's content.



Hands-on
Structured practical tasks deepen and broaden practical knowledge and support student-centred investigations.



Practitioner focus
This feature allows students to make real-life connections between the classroom and the food service industry.



Chapter review
Extending on the unit reviews, graded activities and questions require students to apply knowledge and skills learnt throughout the chapter.



Recipes
All recipes have been tested and provide students with opportunities to develop skills in food preparation and processing.

NelsonNet

Food Tech Focus is a premium Cengage title and is fully supported by the NelsonNet platform. Access to NelsonNet also provides students with additional web-based materials, such as activity sheets and quizzes.

NelsonNetBook

The NelsonNetBook is your digital textbook. Readable online and offline on desktops, laptops and tablets, it reproduces the student text in digital form. With annotations and reviewing tools, and the ability to add and customise your book, NelsonNetBook is accessible immediately via access codes. Please note that any notations made to the NelsonNetBook will expire two years after the access code is activated.

Disclaimer

Please note that complimentary access to NelsonNet and the NelsonNetBook is only available to teachers who use the accompanying student textbook as a core educational resource in their classroom. Contact your sales representative for information about access codes and conditions.

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Glossary

à la carte meaning 'from the card' – a menu that is written with individual prices for dishes

anaemia condition resulting from an inadequate intake of iron, causing the sufferer to feel weak, tired and fatigued

anaphylaxis a generalised allergic reaction that often involves more than one body system (e.g. skin, respiratory, gastrointestinal and cardiovascular)

antibodies proteins in the blood that react with bacteria, viruses and other foreign substances to prevent them harming the body

antioxidant a substance that reduces damage due to oxygen

balanced diet nutrition intake that provides energy, nutrients, dietary fibre and fluids in amounts appropriate for good health

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

biodiversity the variety of all life forms on earth (i.e. the different plants, animals and microorganisms, and the ecosystems of which they are a part)

blanch plunge into boiling water for a short time, then into iced water

blind-bake to bake (a pastry case) before it is filled to prevent a soggy crust. When blind-baking, the pie crust is lined with non-stick paper and filled with uncooked beans or rice and then baked. This prevents the crust from puffing up while it bakes

bush tucker any native flora or fauna used for culinary and/or medicinal purposes

cafe informal restaurant, offering a range of hot meals

catering the business of providing people with food and drink at a social event or other gathering

Christianity religion based on the teachings of Jesus of Nazareth

chronic constant, continuing for a long time

colonisation a process by which a central system of power dominates the surrounding land and its components

condiment a substance, such as a sauce, that gives a special flavour to a food

constraint restriction

consumer a person who uses a product or service

contemporary existing or happening in the present

convalescence period of recovery of health and strength after injury or illness

coolamon elongated wooden dish used for gathering plant and animal foods

cream recipe technique combining sugar with a solid fat, such as butter, shortening or margarine to incorporate air and give baked goods structure. Creaming can be done by hand using a wooden spoon or with an electric beater

criteria standards to judge against

cross contamination transfer of bacteria or other microorganisms from one food or item of equipment to another

cuisine style of cooking

cure to preserve (meat, fish or an animal skin) by salting, drying or smoking

deficiency lack or absence of a particular nutrient

deforestation the removal of a forest or stand of trees, usually for commercial purposes (e.g. to use the land for farming)

degustation menu appreciative tasting of various foods and focusing on the senses

dehydration lack of water in the body

developing nation country with low levels of production of goods and services and limited technology

development the process in which someone or something grows or changes and becomes more advanced

diet the sum of food consumed by a person

duty of care legal obligation imposed on an individual requiring adherence to a standard of reasonable care while performing any acts that could foreseeably harm others

electrolytes minerals that are found in body tissues and blood in the form of dissolved salts

employee a person working for another person or business for pay

employer a person or business that employs one or more people, especially for wages or salary

energy the capacity or power to do work. It exists in various forms such as chemical, mechanical and electrical. In humans, it is needed for both physical and mental activities

enrich add nutrients to improve nutritional value

enterprise a company organised for commercial purposes

entomophagy the practice of eating insects

ethical avoiding activities or organisations that do harm to people, animals or the environment

export to send goods or produce out of the country

fast eat very little or nothing

fermentation production of acid or alcohol by microorganisms that changes the texture, flavour or aroma of food

finger food small appetiser or sweet item that you can pick up and eat using your fingers

finite having bounds or limits; many natural resources are available in fixed amounts and once used cannot be replenished

FODMAP acronym for the term fermentable oligosaccharides, disaccharides, monosaccharides and polyols. These are the chemical names of several sugars that are poorly absorbed in the small intestine. Linked to irritable bowel syndrome (IBS)

food allergy abnormal, unpleasant or adverse reaction to food by the body's immune system

food inequity the unequal distribution of and access to high-quality food

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

food intolerance abnormal, unpleasant or adverse reaction to food caused when the nerve endings in different parts of the body become irritated

food miles unit of measurement of the fuel used to transport food

food presentation the art of modifying, processing, arranging or decorating food to enhance its aesthetic appeal

food preservation the process of treating and handling food to stop or slow down food spoilage

food security to have reliable access to a sufficient quantity of food that is affordable and nutritious

food service the preparation, delivery, serving, etc., of ready-to-eat foods

food taboo a prohibition against consuming certain foods

food trend a widespread change in food preferences; 'in foods'

food waste edible food that is discarded or lost uneaten

garnishing the art of decorating food or drinks to make them visually appealing and appetising

glaze a thin coating given to food to make it glossy. It may be sweet (e.g. sugar syrup) or savoury (e.g. egg wash). Glazes are normally applied using a brush

globalisation the process by which the world is becoming increasingly interconnected as a result of massively increased trade and cultural exchange

grill a form of cooking that involves dry heat applied to the surface of food, commonly from above or below

halal permissible or lawful in traditional Islamic law; relating to meat from animals that have been slaughtered in accordance with Islamic law

health the state of being free from illness or injury

herbs leafy plants, valued for their flavour and scent

hormone a protein-based substance made by the body to perform a specific function; for example, to stimulate growth and development

indigenous ethnic groups who are the original settlers of a given region; also known as first peoples, aboriginal peoples or native peoples

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

industry a group of manufacturers or businesses that produce a particular kind of goods or services

Islam religion based on the words and philosophy of the prophet Mohammed

Judaism religion based on the holy book of the Torah and the teaching surrounding it

julienne narrow strips that are approximately 3 mm wide

kilojoules standard unit of energy measurement

knead to work dough, usually by hand, for the purpose of developing the glutens in the flour, which is what gives baked goods their structure and texture

lactation production of milk for breastfeeding

leavened bread bread that has risen because of the addition of a leavening agent such as yeast

legislation law passed by a government

life cycle stages through which people pass that begin when a female egg is fertilised and end at the time of death

local produce food that is sold and consumed within 160 kilometres from the place it was grown

logistics planning and carrying out of any complex or large-scale activity

maintenance the process of preserving a condition or situation

malnutrition lack of proper nutrition, caused by not having enough to eat or not eating enough of the right things

manufacturer business involved in the making, processing or production of goods

marinate the process of soaking foods in a seasoned, often acidic, liquid before cooking. This technique adds flavour and sometimes acts to tenderise the meat

marketing the action or business of promoting and selling products or services

media forms of communication – radio, television, newspapers, magazines, social media, world wide web – that reach large numbers of people

menu the food available or to be served in a restaurant or at a meal

microorganism microscopic organism such as bacteria

migration movement of people or animals from one place to another

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mindful eating paying attention to what, why, how and when you are eating
modified changed or altered
morbidity illness
mortality death
multiculturalism existence of different cultures within the one society
natural resources materials or substances occurring in nature that can be exploited for economic gain (includes water, land and energy)
New World a name for North, Central and South America used during the time of first exploration and colonisation of this area by Europeans
nomadic moving from place to place; travelling
nutritionally modified foods foods that have been changed to improve their nutritional qualities, either by adding some component (e.g. vitamins, minerals, fibre, active non-nutrients) or by removing or reducing some component (e.g. sugar, fat, sodium)
perishable having a short shelf life; spoiling quickly and needing careful storage
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
policy management plan or strategy devised by a government or organisation
portion to measure or divide foods into predetermined quantities
portion size specific size, shape and weight of food to be served
processed foods foods that have undergone change from their original raw state by a manufacturing process
pulse function on a food processor that will work it at its fastest speed and will stop when you release the button
rancid unpleasant or stale smell or taste, usually affecting fats and oils
ration fixed allowance of food
refugee person who flees for safety to another country
repair to restore (something damaged, faulty or worn) to a good condition
resource something that human society attaches value to due to its usefulness
sanitise make clean and free from germs and dirt
satiety state of being fed or satisfied
sauté to fry quickly in hot fat
scurvy disease caused by a lack of vitamin C
sensory relating to the senses or sensation
sift break down lumps by passing through a sieve
simmer a food preparation technique in which foods are cooked in hot liquids kept just below the boiling point of water
spices aromatic seasonings obtained from the bark, buds, fruit, roots, seeds or stems of various plants
spore organism that produces one or more organisms, similar to a seed
staple basic food that a population eats on a regular basis and in large quantities
stir-fry a cooking technique in which ingredients are fried in a small amount of very hot oil while being stirred in a wok. The technique originated in China and has spread to other parts of the world
stock control determination of the supply of goods kept by a business
stunted restricted growth and development of the body; underdeveloped
subsidise provide financial aid
superfood a food that is considered very beneficial to health due to a high concentration of nutrients
sustenance nourishment in the form of food
taboo social or religious custom prohibiting or restricting a particular practice
table d'hote a menu where multi-course meals with only a few choices are charged at a fixed total price
tamper meddle with for the purpose of altering
tariff tax on imports so that locally produced goods become less expensive by comparison
therapeutic diet a meal plan that controls the intake of certain foods or nutrients to treat a health condition
totem a natural object, plant or animal that is inherited by members of a clan or family as their spiritual emblem. Totems define people's roles and responsibilities, and their relationships with each other and creation
toxin poisons generated by microorganisms that can cause illness
tradition the transmission of customs or beliefs from generation to generation
value-added products raw agricultural products that have been modified or enhanced so that they have a higher market value (consumer appeal) and/or a longer shelf life
vegan people who consume no animal products of any kind, including dairy and eggs
whisk a quick, light movement with a wire utensil of the same name

Cognitive verbs

analyse identify components and the relationship between them; draw out and relate implications

apply use, utilise, employ in a particular situation

assess make a judgement of value, quality, outcomes, results or size

clarify make clear or plain

compare show how things are similar or different

contrast make; build; put together items or arguments

define state meaning and identify essential qualities

demonstrate show by example

describe provide characteristics and features

discuss identify issues and provide points for and/or against

evaluate make a judgement based on criteria; determine the value of

examine inquire into

explain relate cause and effect; make the relationships between things evident; provide why and/or how

identify recognise and name

investigate plan, inquire into and draw conclusions about

justify support an argument or conclusion

outline sketch in general terms; indicate the main features of

predict suggest what may happen based on available information

propose put forward (e.g. a point of view, idea, argument, suggestion) for consideration or action

recommend provide reasons in favour

summarise express, concisely, the relevant details



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FOODBORNE ILLNESS

...often called food poisoning

Caused by eating or drinking contaminated food or drinks. These meals and beverages often look, smell and taste fine.



How do you know you have a foodborne illness?

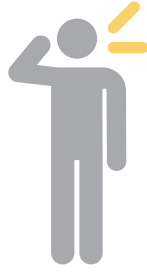
You may have these symptoms



Feel nauseous
(like you will be sick)
Stomach cramps



Vomiting
Diarrhoea



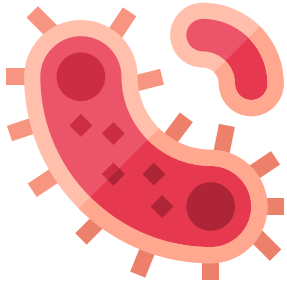
Headache
Feverish
(you feel hot and then shivery)

How long will it last?

It can start as little as two hours after eating contaminated food and may last from a few hours to a few days.

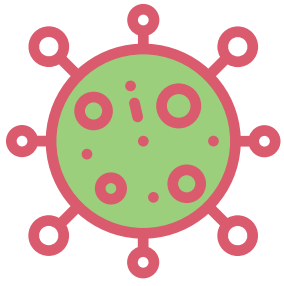
Contamination causes

Foodborne illness is caused by:



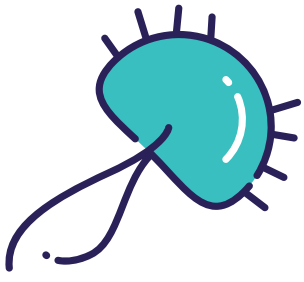
Bacteria

Such as salmonella, E. coli and listeria



Viruses

Such as rotavirus and Hepatitis A



Toxins

Such as those produced by the bacteria *Staphylococcus aureus* and *Bacillus cereus*



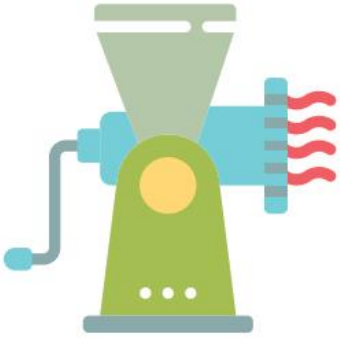
Naturally poisonous foods

Such as some types of mushrooms, green potatoes and rhubarb leaves

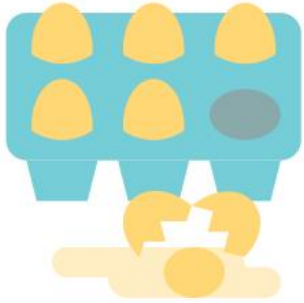
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BACTERIA

What foods do bacteria like?



Raw meats, particularly mince



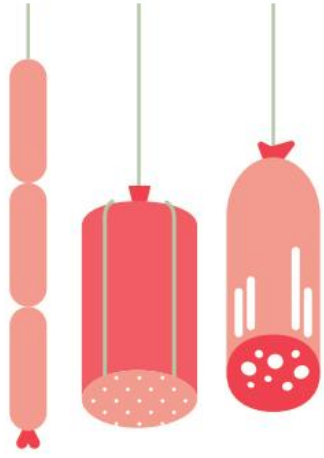
Raw eggs



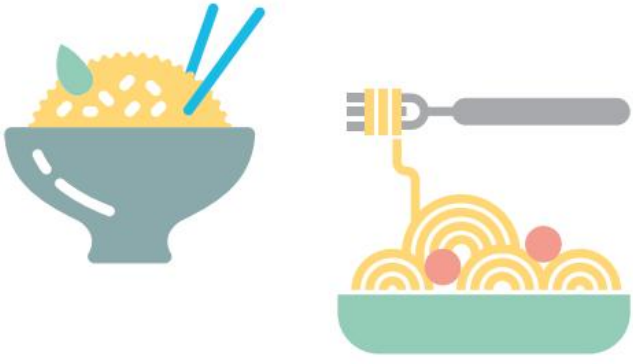
Raw poultry such as chicken, turkey and duck



Seafood, especially prawns and shellfish



Deli meats
(sometimes called smallgoods)



Cooked rice and pasta



Prepared salads and fruit salad
(particularly ones with creamy dressings)

What conditions do bacteria like?

Think of the acronym **FLAT TOM** to remember the ideal conditions for food poisoning bacteria to flourish.

F — **Food to eat** (see the facing page)

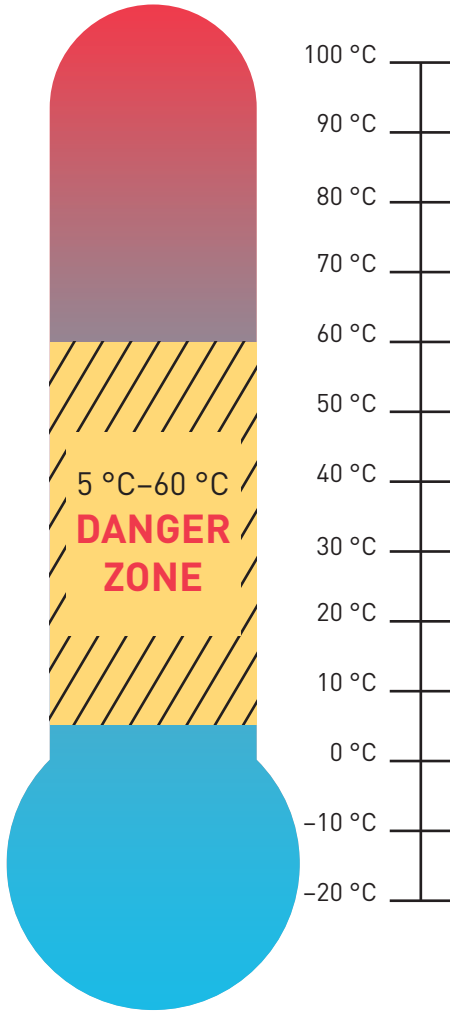
L **A** — **Low-acid foods**

T — **Time to grow** (bacteria will double in size every 20 minutes if conditions are right)

T — **Temperature** (the 'danger zone' of 5 °C to 60 °C – bacteria loves it!)

O — **Oxygen** (although some rare types can live without it)

M — **Moisture**

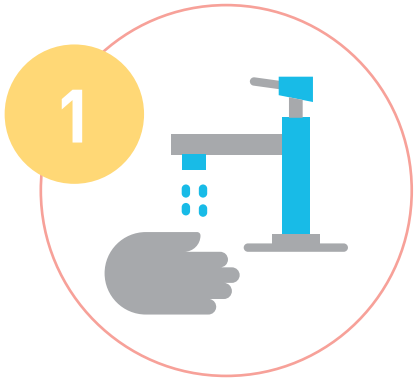


Keep hot foods hot and cold foods cold.

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PREVENTION PRACTICES

Wash your hands often!



Wet your hands with warm water



Apply soap



Lather hands and fingers for at least 20 seconds



Rinse



Dry with paper towel or air

Work in a clean environment



Clean as you go



Wash up using detergent and hot water



Wash all equipment and wipe surfaces regularly

Food prep dos and don'ts

DO



Avoid cross contamination by using clean equipment



Wash fruits and vegetables before using



Store food covered and chilled (below 5 °C if necessary)



Wash hands frequently



Wear gloves when handling ready-to-eat food



Cook high-risk foods completely

DON'T



Allow garbage to build up



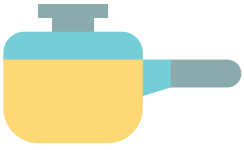
Keep high-risk foods in the 'danger zone'



Thaw meat at room temperature

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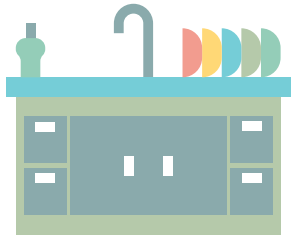
STAYING SAFE WHEN WORKING



Turn pot handles inwards



Clean up spills immediately

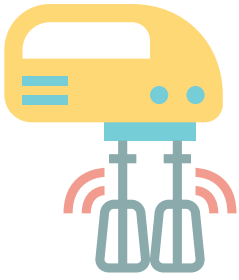


Close cupboard doors and drawers



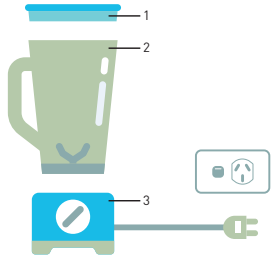
Handle sharp utensils carefully

Use equipment carefully



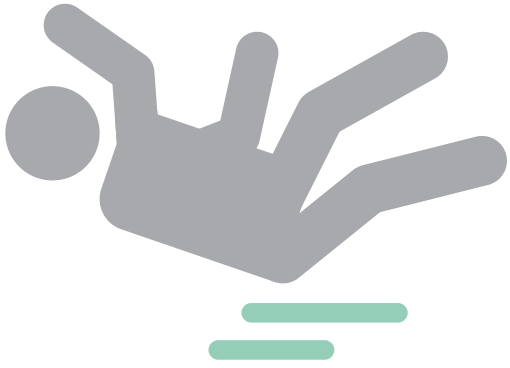


Make sure you have received instruction on how to use equipment



Ensure the appliance is assembled correctly before turning on. Take care when disassembling and cleaning



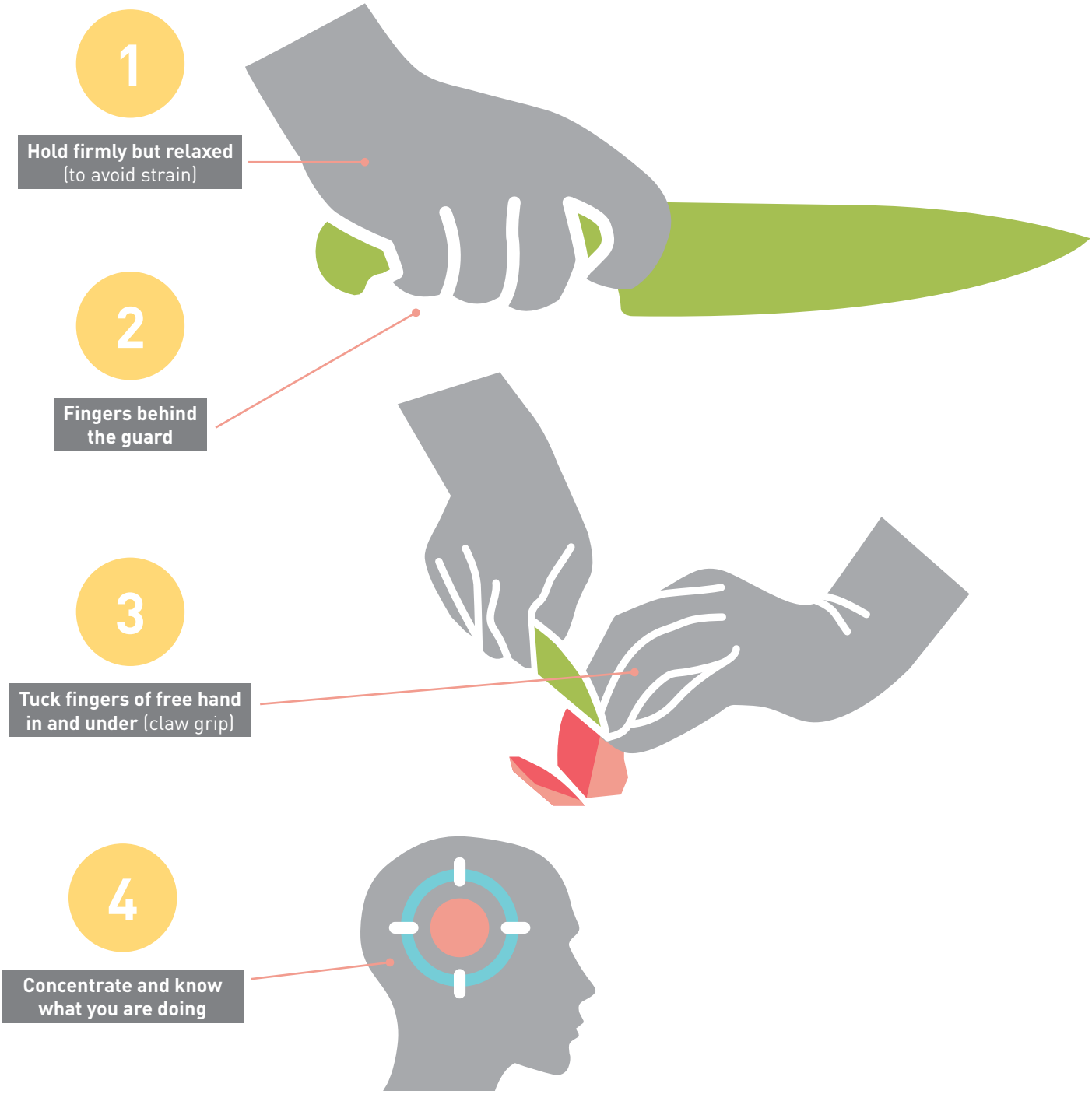




Report any accidents, damage or breakage

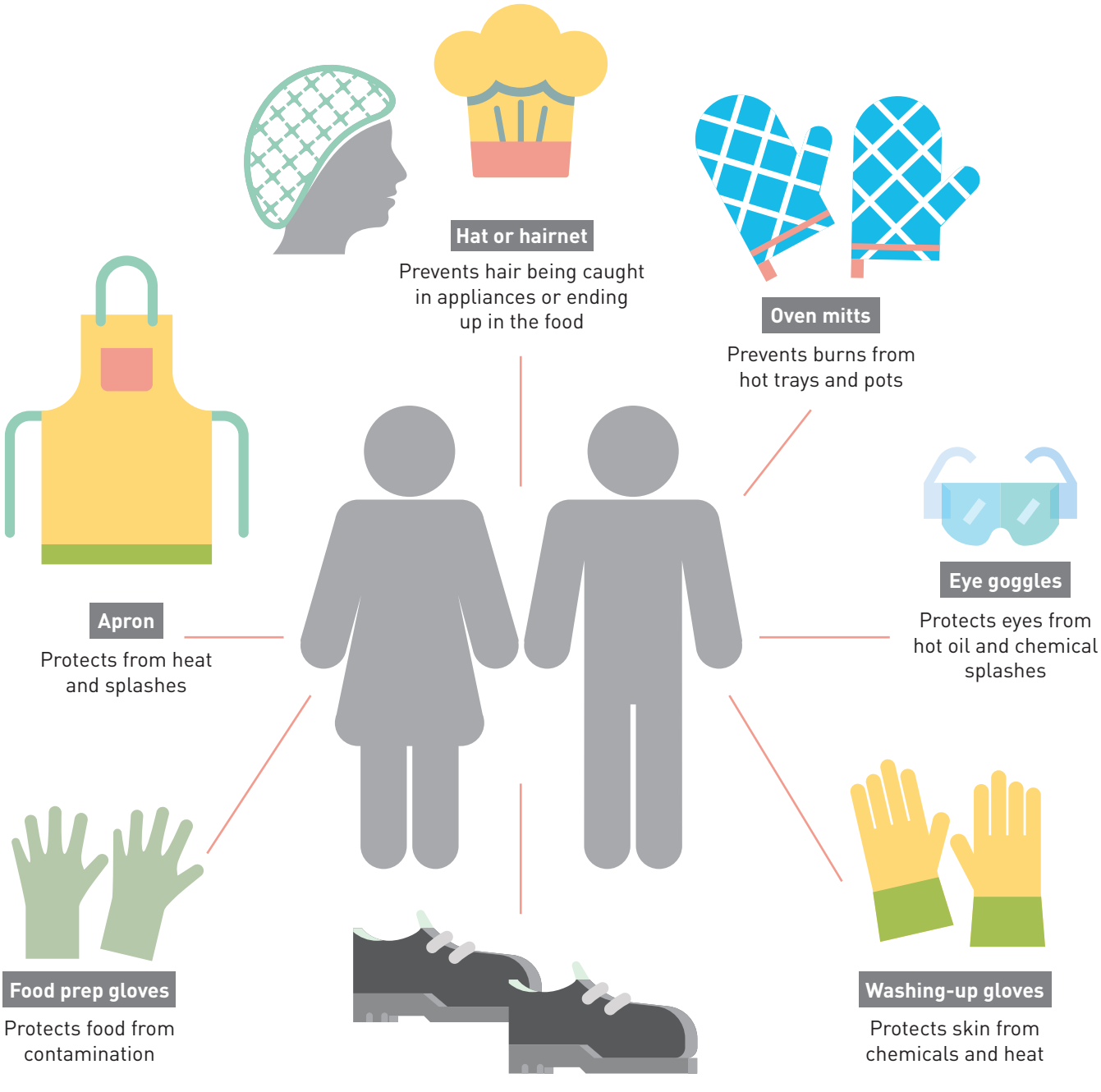
Use knives carefully

Keep knives sharp and free of damage



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WEARING PERSONAL PROTECTIVE EQUIPMENT



Hat or hairnet

Prevents hair being caught in appliances or ending up in the food

Oven mitts

Prevents burns from hot trays and pots

Apron

Protects from heat and splashes

Eye goggles

Protects eyes from hot oil and chemical splashes

Food prep gloves

Protects food from contamination

Washing-up gloves

Protects skin from chemicals and heat

Sturdy shoes

Protects feet from spills or dropped utensils

Working with heat, gas and electricity

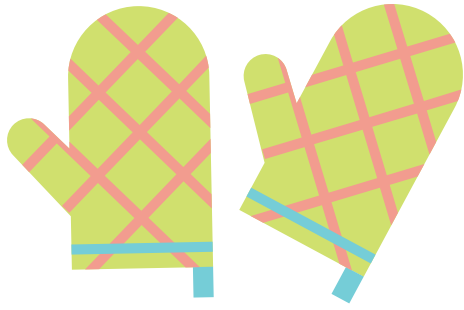


Keep electrical appliances away from water



Remove pot lids with care; lift towards the body to direct heat and steam away

Turn the gas or hotplate off when not in use



Protect yourself from heat by using **oven mitts** (NOT a tea towel)



Unplug appliances before cleaning and ensure cords are free from damage



Beware of hot surfaces

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TOOLKIT

WORKING WITH RECIPES

Title The name of the recipe

Prep time How long it should take to put together

Cooking time How long it will take to cook or set

Yield Tells you how many servings it should make

Lemonade scones

Scones are suitable for high teas and morning teas.

Preparation time 15 minutes **Cooking time** 15 minutes **Makes** 12

INGREDIENTS

2 cups self-raising flour
½ teaspoon salt
¼ cup caster sugar
½ cup thick cream
½ cup lemonade
2 tablespoons milk



METHOD

1. Preheat the oven to 220 °C.
2. Lightly grease a baking tray.
3. Sift the flour and salt.
4. Add the sugar.
5. Add the cream and lemonade and mix to form soft dough in the shape of a ball.
6. Turn out onto a lightly floured board and knead lightly until combined.
7. Press the dough with your hands to a thickness of about 2 cm.
8. Use a 4 cm round cutter to cut out 12 scones.
9. Place on a baking tray with scones just touching over.
10. Brush the tops with some milk.
11. Bake for 10–15 minutes until lightly browned.

Ingredients In a list with the quantities needed

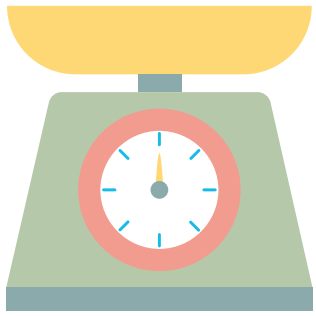
Photograph or image Inspiration (or what it should look like)

Method The steps to follow to make the dish

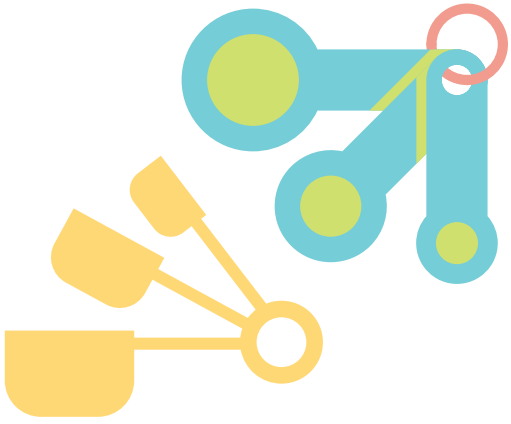
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Decoding the recipe

Ingredients may be listed by weight (grams or kilograms) or volume (cups and tablespoons or teaspoons). These are **exact** measurements (unless the recipe states otherwise).



Scales can be used for bigger quantities



Dry ingredients use measuring cups/spoons

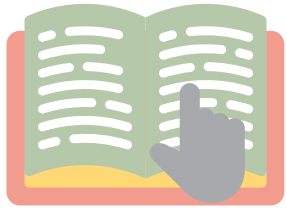


Wet ingredients use measuring jugs

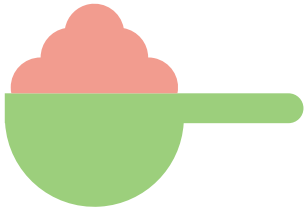
Tips and tricks



Preheat the oven
(It takes about 10 minutes to heat up.)



Read the recipe from start to finish



Measure and prepare everything before you start putting it together



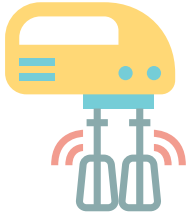
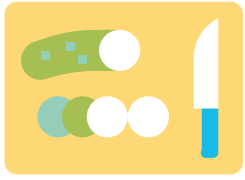
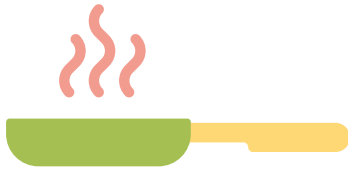
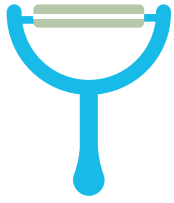
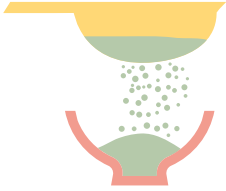
Think about presentation
How will this look on a plate?



Ask rather than guess!

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CHOOSING THE RIGHT TOOL FOR THE JOB

BAKE	BEAT	BOIL
		
CHOP	**CORE**	**FRY**
		
GRATE	**JUICE**	**PEEL**
		
SIFT	**STIR**	**WHISK**
		

WORKING TOGETHER



Work as a team

Sharing the jobs is more time effective



Communicate



Plan your prac

Decide who will do what

Be organised and work methodically



Help each other

(if you have done all your jobs)



CHAPTER 1

Food in Australia

FOCUS AREA:

Does Australia really have a national cuisine that defines us as a nation?

The changing nature of modern Australian cuisine makes this a difficult question to answer. Our current diet has been defined and shaped by many factors over time. This chapter will help you to explore the evolution of contemporary Australian cuisine, including traditional habits and customs of Indigenous Australians, and the effects of colonisation and ongoing migration and multiculturalism. You will also consider *what* Australians eat, *when* we eat, and *how* we grow and produce the food we consume.



CHAPTER CONTENT

In this chapter you will:

investigate

- native Australian ingredients and modify recipes to include them
- the development of food production and processing technologies
- Aboriginal and Torres Strait Islander food knowledge
- multicultural influences on how we eat today
- the food habits of other countries around the world

assess the impact of European settlement on Aboriginal and Torres Strait Islander peoples in the context of food and food-related practices

demonstrate

- knowledge of the correct equipment and techniques to use in food preparation
- how to prepare food safely and hygienically

design, plan and prepare food that is safe to eat and reflects Australia's ever-changing cuisine

discuss how migration affected the diet of early settlers and introduced new foods to Australia

examine the influences on how we select our food.

Pre-test quiz

RECIPES

- Macadamia and wattleseed Anzac biscuits
- Quandong relish
- Kangaroo and macadamia salad
- Johnny cakes (damper)
- Crispy-topped beef mince pies
- Mexican pizza
- Nasi goreng
- Vegie burgers

FOOD FACTS

A Kakadu plum has 100 times more vitamin C than an orange and 5.2 times more antioxidants than a blueberry.

It is estimated that before 1788 there were more than 750 000 Aboriginal and Torres Strait Islander peoples living in over 500 nations or clan groups. Each nation had its own territory, customs and language.

Livestock shipped to Australia in the First Fleet included 19 goats, 44 sheep, 4 cows, 6 horses, 5 rabbits, 32 hogs and 87 chickens.

According to Food Standards of Australia and New Zealand, meat pies can legally contain meat from 'buffalo, camel, cattle, deer, goat, hare, pig, poultry, rabbit or sheep', and only 25 per cent of the filling need be from these sources.

Dim sims were invented in Australia in 1945.

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

More than 670 million individual Tim Tam biscuits are produced annually, and Australians eat approximately 45 million packets a year.

Innovative technologies are transforming farming practices and guiding Australian farmers to a sustainable future.

FOOD WORDS

biodiversity the variety of all life forms on earth, i.e. the different plants, animals and microorganisms, and the ecosystems of which they are a part

bush tucker any native flora or fauna used for culinary and/or medicinal purposes

contemporary existing or happening in the present

coolamon elongated wooden dish used for gathering plant and animal foods

entomophagy the practice of eating insects

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

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

migration movement of people or animals from one place to another

multiculturalism existence of different cultures within the one society

nomadic moving from place to place; travelling

ration fixed allowance of food

satiety state of being fed or satisfied

scurvy disease caused by a lack of vitamin C

superfood a food that is considered very beneficial to health due to a high concentration of nutrients

Australian cuisine

Modern Australian cuisine can be described as daring, original and progressive. What Australians eat today has been influenced by cuisines from all over the world. The Anglo-Australian dishes developed by the British settlers have, over time, been infused with indigenous ingredients, global flavours and adventurous techniques. Our current cuisine reflects the rich and diverse history of our nation (our multiculturalism), the vast array of fresh local ingredients available to us, and our ever-increasing technological skills and expertise. Roast lamb is often proclaimed as our national dish; however, fish and chips, salt and pepper squid, 'spag bol', barbecued 'snags' and the humble meat pie could all claim the crown.



Clockwise from top left: Shutterstock.com/Janet Faye Hastings; Shutterstock.com/MaraZe; iStock/Getty Images Plus/LauriPatterson; iStock/Getty Images Plus/bonchan; iStock/Getty Images Plus/grandriver; iStock/Getty Images Plus/IngaNielsen

Figure 1.1 Roast lamb, fish and chips, salt and pepper squid, spaghetti bolognese, sausages and meat pies have all been suggested as contenders for Australia's national dish. What do you think our national dish should be?

HANDS-ON

WHAT IS AUSTRALIA'S NATIONAL DISH?

PURPOSE

To investigate multicultural influences on contemporary Australian diets.

ACTIVITIES

1 Design a survey to collect information about Australia's national dish. Alternatively, use a 'give one, get one' activity to assess what your class members consider Australia's national dish.
2 Collate your information and analyse the data.
3 Create an infographic to illustrate your results.

Bush tucker

Before European settlement, Australia's Aboriginal and Torres Strait Islander peoples had a thriving food culture, which not only maintained their health but ensured the sustainability and biodiversity of the environment. They lived off the land for more than 60 000 years, enjoyed more than 5000 native food species, and developed sustainable and highly successful agricultural and land management techniques. They only took what they needed and there was little waste. Hunting was done by the men, but they often returned with very little. What they did bring back – larger animals or fish – was then shared among their clan. Women and children 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, as it was much more difficult to come by.

Bush tucker, or indigenous food, is any native flora or fauna used for culinary and/or medicinal purposes. The nature of bush tucker changed across the country. In coastal and tropical regions of Australia that were well-watered, an abundance of plant and animal species were available for consumption. In more arid regions there was less variety of species available and restricted water supplies, but Aboriginal peoples were still able to find enough nourishment for survival. Traditional bush tucker was unique and often innovative, and came from a variety of sources.

Table 1.1 Australian native foods

Food sources	Examples
Food from animals	Kangaroo, crocodile, emu, fish, crustaceans, wild turkey, birds, wallaby, possums, snakes, lizards, eggs
Food from plants, including edible nuts and seeds	Warrigal greens, bush yams, finger limes, wild orange, passionberry, native fig, bush tomato, mistletoe, bush banana, bush coconut, quandongs, pencil yam, mulga apple and seeds, Kakadu plums, Davidson's plum, riberries, wattleseeds, bunya nuts, edible pinecones, macadamia nuts
Insects and grubs	Witchetty grubs, cicadas, caterpillars, green ants, honey ants, bogong moths
Native spices, honey and nectars	Lemon myrtle, mountain pepper, aniseed myrtle, honey from the native bee, nectar from flowers (e.g. banksias, grevilleas and bloodwood trees)
Fungi	Beefsteak fungus, 'native bread', stalked puffball, native truffle
Water was also essential for survival	Rivers, streams, springs and wells, soakages, water-holding frogs, tree roots and hollows





Left: Shutterstock.com/Leslie Joan monahan; right: Shutterstock.com/Tim Ezzy

Figure 1.2 There are many native plants and animals that can be eaten, including **a** finger limes and **b** saltwater crocodiles.

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Alamy Stock Photo/Travelscape Images

PAULA NIHOT: BUSH TUCKER EXPERT

HIGH ANTIOXIDANTS, VITAMINS: THE AUSTRALIAN BUSH TUCKER DIET YOU SHOULD TRY

When you think of Australian bush tucker, the first thing that probably springs to mind is witchetty grubs.

But stereotypes aside, the term 'bush tucker' in fact describes the diverse range of animals, like kangaroo, and plants – including berries, nuts and herbs – native to Australia.

This includes the unique fragrances of lemon myrtle, wattleseed, lilly pilly, strawberry gum leaves, pepper berry and midgen berry – some of which are higher in antioxidants than blueberries.

It is these native flavours that first come to mind for bush tucker expert Paula Nihot when contemplating 'Australian cuisine' ...

She takes pride in Australia being abundant in edible delights, naturally growing amid our bushland areas and coastlines.

Ms Nihot is passionate about breaking the stigma associated with the term 'bush tucker' and spreading the word about its surprising health benefits.

She also says these ingredients are too often absent from chefs' menus and could enrich Australia's restaurant scene.

...

Some examples are lemon myrtle shortbread, a kangaroo salad with warrigal greens and native raspberry vinaigrette, a bush tomato and curry myrtle chutney, a lilly pilly and apple sauce and a wattleseed damper.

...

'These accessible plant varieties are high in antioxidants, and include a range of antimicrobial and antibacterial properties, as well as vitamins and minerals,' Ms Nihot said.

'They also encourage seasonal eating, ensuring we get a variety of foods and their nutritional content all year round.'

She [adds] that meats, such as kangaroo, are lean and high in iron.

Increased use of native produce could also bring economic benefits to Australia if chefs exploit its unique flavours in their cooking.

Source: Mitchelson, A 2018, 'High antioxidants, vitamins: The Australian bush tucker diet you should try', *The New Daily*, 5 May

ACTIVITIES

1 What did you know about bush tucker before you read the article? What do you know about it now?
2 Describe the native flavours you have already tried. What other flavours would you like to try?
3 Explain why bush tucker has a 'stigma' associated with it.
4 Discuss why Australians should embrace the use of native ingredients in their own kitchens.
5 How do you think chefs could help promote the use of these native 'superfoods', and how would that be beneficial to Australia?
6 Investigate the types of native plants you could grow in your school garden or in your garden at home.
7 Modify a recipe you like to use to include some bush tucker.
8 Develop an Instagram post or video clip that could be used to promote to everyday Australians the advantages of using Australian native foods. The promotional material should include:
   - the nutrient values of Australian native foods
   - reasons why Australian native foods make versatile, healthy and tasty ingredients
   - recipe ideas.

PRACTITIONER FOCUS

Nutritional value of a traditional diet

The diet of Aboriginal and Torres Strait Islander peoples 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 nations 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 micronutrients, 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.

People have started to recognise bush foods as **superfoods** – packed full of valuable nutrients with plenty of functional health benefits! Bush foods are also increasingly used in cosmetic and bath products.

HANDS-ON

AUSTRALIAN SUPERFOODS

PURPOSE

To investigate the use and nutritional values of Australian native ingredients.

Our native ingredients are very undervalued in Australia. Your challenge is to choose one of these ingredients to promote to a local food company to raise awareness of the value of this ingredient in everyday menus.



Austockphoto.com.au/Leanne Atherton

Figure 1.3 Kakadu plums are a gift from the Dreaming and have 100 times more vitamin C than an orange and 5.2 times more antioxidants than a blueberry. They are a vegetarian source of iron and vitamin E and contain 110 µg of folate per 100 g.



Shutterstock.com/Peter Krisch

Figure 1.4 Davidson's plums are an excellent source of potassium, vitamin E and zinc. They are full of antioxidants and are a dairy-free source of calcium.



Shutterstock.com/Serj Malomuzh

Figure 1.5 Quandongs, or native peaches, have twice the amount of vitamin C found in an orange and are a good source of vitamin E, folate, magnesium and calcium. They are believed to boost the immune system and have anti-inflammatory qualities.



Shutterstock.com/wasanajai

Figure 1.6 Finger limes are rich in folate, potassium and vitamin E. One finger lime contains three times the vitamin C found in a mandarin.



iStock/Getty Images Plus/GordonImages

Figure 1.7 Wattleseed is a great source of protein and is considered a low glycemic food. It contains high concentrations of potassium, calcium, iron and zinc.



Alamy Stock Photo/Dorling Kindersley ltd

Figure 1.8 Kangaroo is a lean meat that is low in fat and high in protein. It is a rich source of omega-3 fatty acids and a strong source of B-group vitamins. Iron and zinc are also found in this meat.

ACTIVITIES

1 Complete a fact and opinion chart like the one below, based on your chosen ingredient.

Fact	Opinion
Example: Kakadu plums have the highest known natural vitamin C content in the world.	Oranges and other citrus fruits are the best source of vitamin C.
1	
2	
3	

2 Using the facts and opinions you have collected, write an 'elevator pitch' that will promote your chosen native ingredient to the potential client.

An elevator pitch is a brief (30 seconds to 1 minute) persuasive speech that can be used to spark interest in a chosen topic. It should be interesting, memorable and succinct. It also needs to explain what makes your product or idea unique.

3 Create a business card that captures the essence of your pitch which you could distribute to potential clients to make sure they remember you and your message.

Top 10 Australian superfoods

4 Present your pitch to your classmates and have them help you refine your presentation.

5 Test your pitch out at a local café or restaurant that you feel would be open to including this new ingredient in their menu. Evaluate your success.

Health Benefits of Australian Native Foods

HAYLEY BLIEDEN:
THE AUSTRALIAN SUPERFOOD CO.


The Australian Superfood Co

AUSTRALIAN SUPERFOODS

Hayley is the founder and managing director of The Australian Superfood Co. (TASC). The company creates snack foods, fruit powders, herbs, spices and granola made from native Australian bush foods. The ingredients are made from locally sourced 'superfoods' which are rich in nutritional qualities and have sustained Indigenous communities for over 60 000 years. The company sells its products in more than 350 stores across Australia and online, and also supplies the food service industry and food and beverage manufacturers.

Hayley began as a dietitian and nutritionist who had always been driven to create new foods to enhance people's wellbeing and performance. She soon saw a gap in the market and researched Australian superfoods, travelling to remote Indigenous communities in the Northern Territory to discover the secrets of native bush food. She learnt about their nutritional content and farming practices and began to develop products that celebrated age-old Aboriginal wisdom.

Today the Superfood Company is one of the few commercial brands that harnesses and promotes Australian native superfoods. A large focus for this company is not only to spread awareness about Australian bush food, but also to support the people who discovered and harvested it in the first place. Its relationship with Indigenous communities in Australia goes far beyond a commercial partnership. Not only does it create more employment by purchasing ingredients directly through Indigenous communities, but it gives back to the communities in other ways, such as by advocating for health and education.

The company is currently working with new communities and farmers to broaden its supply chain and develop new products that will encourage easier use in the home kitchen. Both of these things will increase accessibility to ingredients for the wider market, both in Australia and abroad.

Source: Adapted from 'Ambassador feature – Hayley Blieden, The Australian Superfood Co.', ausmumpreneur.com, 4 August 2018



ACTIVITIES

1 Describe the types of foods produced by this company.
2 What type of job did Hayley have before she established this company? How has this helped her now?
3 Outline some of the steps Hayley took to develop her products.
4 Identify the places where these products are sold. Why are they sold there?
5 Besides spreading awareness of these superfoods, what else does the company consider to be important? Why?
6 Justify the importance of these ingredients being more accessible to consumers.
7 Test out some of the recipes suggested on the Superfoods website.
8 Design you own granola mix that uses these superfoods. Prepare your recipe for your classmates to try.
9 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?

PRACTITIONER FOCUS

Knowledge of food and food practices

Aboriginal and Torres Strait Islander peoples had a deep awareness of plants, animals and seasons. They practised sustainability through land management, and they knew how to hunt and gather so that their food resources would thrive and replenish. People moved from place to place, their knowledge based on thousands of years of experience and understanding passed down in an oral tradition. They told their stories using legends, paintings, dance and song. Some of this cultural knowledge has been lost in time, but its significance has been acknowledged and it is now being protected as Indigenous cultural and intellectual property.

The Dreaming is the Aboriginal understanding of the world, of its creation, and its great stories.

Dreaming stories could be considered as the oral textbooks of accumulated Aboriginal knowledge, spirituality and wisdom, from when time began. They are unique stories and beliefs that are owned and held by different Aboriginal groups within Australia. Each story explains the meaning and significance of particular people, places and creatures.

HANDS-ON

ART AND FOOD

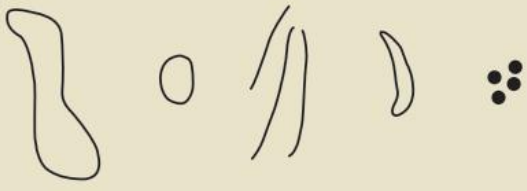
PURPOSE

To investigate cultural knowledge of food and food practices of Aboriginal and Torres Strait Islander peoples.

ACTIVITIES

1 Examine the painting on the right, which is telling a story about bush tucker.

2 Use the key below to describe what this artwork may have been saying.



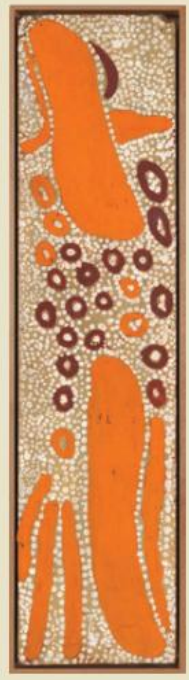
Footprint | Witchetty grub | Digging marks | Boomerang | Desert floor

3 Create your own artwork which gives a message about food sources.

4 Get someone else in your class to interpret the message you have portrayed in your artwork.

5 Check your answers against the description of the artwork provided by the National Gallery of Australia. Discuss the differences.

'Man's Bush Tucker Dreaming' at the NGA



National Gallery of Australia – Man's Bush Tucker Dreaming 1971, Uta Uta Tjangala. © the estate of the artist licensed by Aboriginal Artists Agency Ltd

Figure 1.9 What do you think the artist is portraying in this painting?

FOOD IN FOCUS

CULTURAL KNOWLEDGE OF FOOD AND FOOD PRACTICES

PURPOSE

To investigate cultural knowledge of food and food practices as set out in stories of the Dreaming.

STEPS

Visit your school or local library, or use the weblinks provided, to find an Aboriginal Dreaming story that relates to food sources.

Guddhu the Murray Cod
Wayamba the Turtle
Mundiba and the Honey

ACTIVITIES

1. Having read the Dreaming story, what have you learnt?
2. How may this story have been told before it was written down?
3. Why are these types of stories culturally important?
4. How can this type of knowledge be protected for the future?
5. Investigate other creation stories and their meanings.
6. Write your own creation story about a food or celebration you enjoy.

Seasons

Aboriginal peoples divide the year in a variety of ways, including using the moon and stars as well as cycles in local food sources and the seasons identified in their environment. For example, the Miriwoong people (from Kununurra and the land along the border of Western Australia and the Northern Territory) recognise three seasons, and the Jardwadjali and Djab Wurrung people (from western Victoria) recognise six seasons. People used their knowledge of the seasons and food cycles to move around their country and source nutrient-rich foods.

HANDS-ON

INDIGENOUS SEASONAL CALENDARS

PURPOSE

To investigate the different seasons identified by Aboriginal peoples around Australia.

ACTIVITIES

1. Individually or in groups, explore the Bureau of Meteorology's Indigenous Weather Knowledge website. The site provides details about the seasons as recognised and described by nine different Aboriginal nations.
2. Discover more about the seasons using the CSIRO seasonal calendars for different indigenous language groups.
3. Follow the weblink to the interactive calendar to create a range of menus for typical days in different seasons. How do these menus vary?
4. Use your own local data and knowledge to design your own calendar.

BOM Indigenous weather knowledge
CSIRO: Indigenous calendars

Early technologies

Aboriginal people were one of the most technologically advanced societies in the world. Their inventions and innovations are among the earliest identified and helped them survive Australia's harsh conditions. A great variety of tools, weapons and utensils were used to gather plants for food, fibres and medicine, as well as to hunt animals for food and clothing.

Recent research has revealed that although permanent towns and communities were not always evident, dwellings and shelters were common, with large groups residing together. Aboriginal people used complex systems of land management, including dams, weirs and wells, the planting, irrigating and harvesting of seeds, and the preserving and storing of surplus food, to ensure convenient and predictable food supplies. They also practised aquaculture in rivers and lakes, using weighted fishing nets, fences and traps.

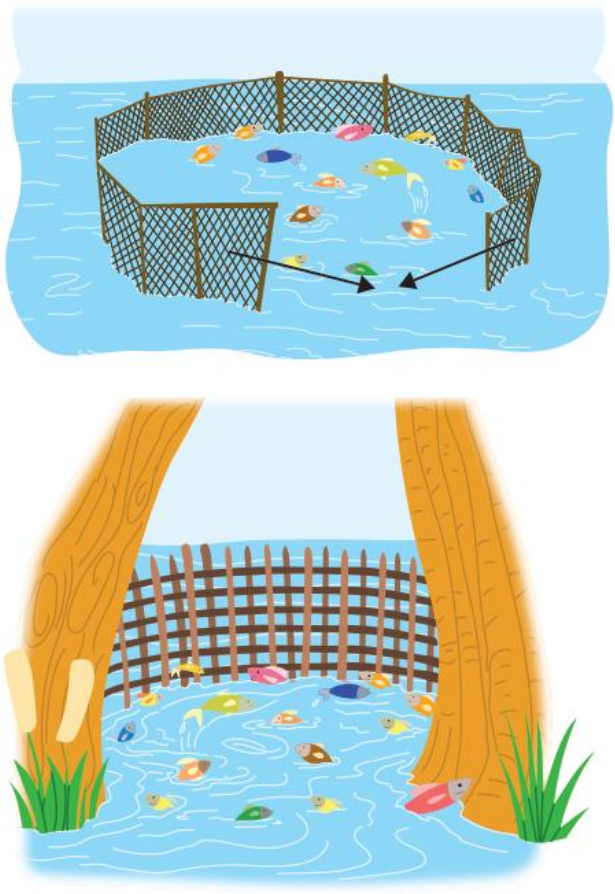


Figure 1.10 Nets made from the fibres of rushes that grew beside the creeks were used to catch fish, animals and birds.



Shutterstock.com/John Carnemolla

Figure 1.11 The existence of the Brewarrina Aboriginal fish traps was first reported by European settlers in 1848.

In a process known as 'firestick farming', Aboriginal people would burn grasses to herd hunting animals into particular areas and promote new grass shoots that would ultimately attract prey for future hunting and encourage biodiversity. This method is still used in some parts of Australia today as a way to control weeds and reduce fire hazards.

Animal foods collected by the hunters were usually cooked. This could be done using a variety of different methods. Some native meats, such as kangaroo, were seared over hot coals or on an open fire, leaving the flesh near raw. Others, such as barramundi and turtle, could be wrapped in leaves or paperbark and steamed in large ground ovens for long periods of time. Various versions of breads and dampers were made by grinding grass seeds and mixing them with water before cooking them in ashes or burying them under hot coals in the sand.

Foods such as ants and berries were simply collected and eaten. Others needed more preparation. The women spent time washing, grinding and pounding seeds and nuts before they could be cooked and eaten. For example, bunya nuts and cycad seeds required extra preparation to make them easier to digest and remove dangerous poisons and toxins. Basic tools such as sea shells, teeth, bone, bark troughs or coolamons, woven baskets and grinding stones were used to help with these tasks.

Plant foods required more careful preparation, since many of them are 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.

HANDS-ON

EARLY TOOLS

PURPOSE

To demonstrate an understanding of the technologies used by Aboriginal peoples in Australia.

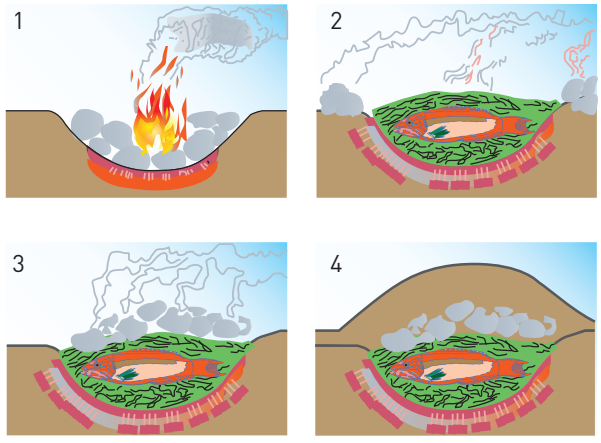
ACTIVITY

Create a diorama, model or animation that can be used to educate tourists and students about how Aboriginal peoples traditionally used different types of technologies to grow, gather and prepare their food.

How to make an earth oven

1 Scoop out a shallow pit in the earth and set your fire in it. Place stones on and around the fire.
2 When the stones are hot, rake out the fire and place wet, green leaves in the pit. Place potatoes, a whole fish or a chicken on the leaves.
3 Add more green leaves, then the hot stones and cover with earth.
4 Cooking time: 3–4 hours. Stay near the fire and put it out when you have finished.

Note: This activity should only be done with careful adult supervision.



Bush foods in contemporary Australian diets

Mainstream chefs around the world are embracing native Australian ingredients which have been used by Aboriginal people for thousands of years. The growing profiles of Indigenous chefs like Mark Olive from Black Olive Catering and Clayton Donovan, who presents the ABC television series *Wild Kitchen*, have made many people more aware of these unique foods. Non-Indigenous chefs have also embraced Australian bush foods and fused them with their own signature dishes, such as Kylie Kwong using warrigal greens in a stir-fry.

Everyday cooks are using more native ingredients in their own cooking, perhaps inspired by TV shows such as *MasterChef*. Kangaroo has been widely available in supermarkets for years, but other native meats, such as wallaby, possum and crocodile, are available at specialty butchers or online.

These specialised ingredients were initially harvested from wild sources; however, with the increase in demand more sustainable options are being explored. Some Aboriginal communities have become involved in the supply chain, using their traditional knowledge of these plants to establish more commercially viable bush tucker gardens, but such participation in the commercial production and sale of indigenous foods is still minimal. In an attempt to promote cultural renewal, connection and identity for Aboriginal people, organisations such as Australian Superfoods, Farmhouse Direct, Indigiearth and Outback Pride are working to increase Aboriginal participation in the bush tucker market.

Could you create a bush tucker garden at your school?

Bush tucker links



The Australian Superfood Co

Figure 1.12 Native ingredients are increasingly being used in food products.

9780170442855

Alamy Stock Photo/Genevieve Vallee



HERB SMITH:
INDIGENOUS FOOD ADVOCATE AND BUSINESSMAN

WELLINGTON'S DREAMTIME TUKA FEEDING THE WORLD THROUGH QANTAS

Wiradjuri man Herb Smith has grown his business, Dreamtime Tuka, from a few local customers in Central West NSW to supplying some of Australia's biggest brands, including Qantas, where traditional Wiradjuri foods are available for passengers from across the globe. Herb has fond memories of the Aboriginal stories passed down from elders to their children and grandchildren and believes that Dreamtime Tuka will help to highlight the significant cultural wealth surrounding food in Indigenous tradition.

Mr Smith said Dreamtime Tuka is a 100 per cent Aboriginal-owned company based in Wellington, NSW. Dreamtime Tuka is a leading supplier of bush food products, linking the nutritional value and cultural wealth of indigenous foods to the national and international market.

'We specialise in developing, producing, manufacturing and selling Indigenous flavoured food products across the Hospitality Industry. We use well-known Indigenous spices and ingredients such as cinnamon myrtle, lemon myrtle, wattleseed, rainforest plum jam and bush plum jam,' he said. The company's lemon myrtle coconut slice is being served for morning tea on Qantas domestic fights. Herb hopes that the linking of Aboriginal foods and culture to the average consumer will increase their appreciation and understanding of a history that has lasted many centuries.

'I think the story of Dreamtime Tuka is important to share because I want to spark the creation of new industries in the region and create new opportunities for employment, apprenticeships and traineeships.'

Dreamtime Tuka represents the very best that this exceptional country has to offer. Their products embody the rich cultural traditions that make Australia truly unique.

Source: Adapted from Craig Thomson, *The Daily Liberal*, https://www.dailyliberal.com.au/story/5600455/wellingtons-dreamtime-tuka-feeding-the-world-through-qantas/ and http://www.dreamtimetuka.com.au/

ACTIVITIES

1 Discuss where Herb got his knowledge of Indigenous recipes.
2 Explain what Herb hopes the average consumer of his products will learn.
3 Why do you think Qantas wants to showcase unique products such as this one?
4 How will this product help Herb's local community?
5 Identify other types of products Dreamtime Tuka makes, and describe how and where they are used.

Dreamtime Tuka

PRACTITIONER FOCUS

UNIT REVIEW

LOOKING BACK

1 Define the term 'bush foods'.
2 Explain the reasons for the varying diets of Aboriginal groups across the country.
3 Describe how the traditional food supply of Aboriginal and Torres Strait Islanders met their nutritional needs.
4 How do Aboriginal seasonal calendars differ from what we use today?
5 Compare the different gender roles within Aboriginal communities.
6 Discuss the use of technology by Aboriginal and Torres Strait Islanders in the growing and collection of food.

FOR YOU TO DO

7 Compare the nutritive value of the traditional diet of Aboriginal Australians to the diet of Australians today.
8 If you were stranded in the Australian bush, describe the foods you could eat to help you survive.
9 Write a blog post explaining the main reasons Australians should include bush tucker in their diet.
10 Select an Australian native food.
- Explore where and when you would locate it.
- Outline how you would capture or collect it.
- Describe how you would prepare it for eating.
- Provide an example of a recipe that uses the food.

TAKING IT FURTHER

11 Arrange for a local Aboriginal Australian student or family member to talk to the class about Aboriginal Australian eating patterns and how traditional bush foods are prepared and cooked. As an alternative, you could make contact with your local Aboriginal Australian organisation and invite a representative to come to your class.
12 Design and make a traditional cooking tool described at the link provided. Use the tool to prepare a meal using Australian bush foods.



13 Investigate the significance of food in traditional Aboriginal Australian culture. Prepare an oral or computer presentation about the technologies used by traditional Aboriginal Australians for food collection and preparation.
14 Predict some of the challenges facing commercial producers of bush foods.
15 Visit a restaurant that uses native ingredients and write a review of your meal for a local paper or the school newsletter or website.

Colonial influences on Australian cuisine

The 11 ships of the First Fleet were sent from England to establish a colony in NSW. From England, the fleet sailed southwest to Rio de Janeiro, then east to Cape Town and via the Great Southern Ocean to Botany Bay. After nearly nine months at sea, 750 convicts, 299 marines and their family members, 269 crewmen and 14 officials arrived at Sydney Cove on 26 January 1788.

The first settlers came ashore to find a country very different from England. Their immediate needs were the same as those of the Aboriginal people who inhabited the land already – food and shelter – but they went about providing these in a very different manner. European colonisation of Australia brought very rapid changes to Aboriginal society and dramatically affected Aboriginal land and the ways people lived.

The journey from England had been long and hard, and limited food supplies meant the early colony faced starvation. Many of the convicts had no knowledge of farming techniques, and the tools and seeds brought with them proved to be unsuitable for Australian conditions. The food they did have was rationed, a practice that would continue for many years.

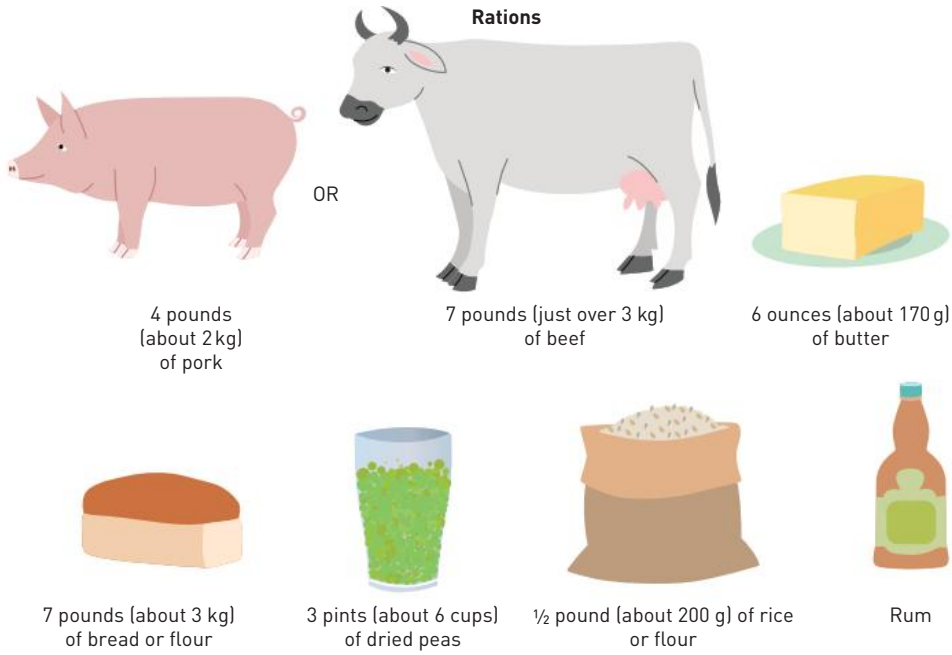


Figure 1.13 Pictured above is the weekly ration given to soldiers and male convicts. Tea, sugar and tobacco were regarded as indulgences and could be withheld for bad behaviour. Women received two-thirds of this allowance and children got even less.

Problems faced by the colony

The first settlers, convicts and military personnel were keen to farm the land and raise food, but their inexperience in farming techniques and the unfamiliar landscape resulted in near starvation due to early crop failures. They contended with many problems.

- The soil was unsuited to the type of farming they were used to.
- They had limited farming experience.
- No one knew how to fish.
- Most of the cattle and livestock that arrived with the First Fleet were lost in the bush.
- They tried to hunt for food, but again were mostly unsuccessful.
- The local foods they tried sometimes tasted strange or made them sick.
- With no building experience, shelter was limited to shacks made from sticks and mud.
- Many people were sick as a result of the poor conditions during the long sea voyage. For example, many suffered from scurvy.
- Tools and equipment were poorly made and not suitable for the work that needed to be done.
- Land clearing was difficult as English axes were blunted by the hard Australian timbers.
- Rum was easy to come by – sometimes the soldiers were even paid in rum.

Expansion of the colony

In March 1788, Governor Phillip sent a small party to Norfolk Island, 1268 kilometres east of Australia, to create a second colony for agriculture. Later colonies were begun in Tasmania (1803), Queensland (1824), Western Australia (1829), Victoria (1835) and South Australia (1836).

HANDS-ON

PROBLEMS FOR THE COLONY

PURPOSE

To reflect on the problems faced by the early settlers.

ACTIVITIES

1 Discuss the consequences of the problems listed in the text for the new colony.
2 How would these problems have affected the food supply at the time?
3 Prioritise the problems list above from worst to least. Justify your order.
4 Assess how you may have overcome some of these problems if you were Governor Phillip.
5 Imagine you were a convict on the First Fleet. Write a letter home to your family telling them about the voyage and your life in the colony.

The Second Fleet, known as the 'Death Fleet', was made up of six ships and arrived in 1790 with more convicts and much-needed supplies. However, many of the convicts arrived too ill to work or to help develop the colony and became a burden for the struggling community. The Third Fleet arrived in 1791 and comprised 11 ships carrying convicts, military personnel and notable people to fill important positions in the colony. The first 'free settlers' arrived in 1793.

By the mid-1800s, there were enough people in Australia to sustain and develop the colonies. Since colonisation had begun, more than 100 000 convicts had arrived on 806 ships.

When the first crops planted at Farm Cove failed, the search for suitable land for agriculture led to the discovery of fertile plains fed by the waters of the Parramatta River. The land was hoed by hand and trees cleared to grow wheat, corn and barley. The success of these farms was crucial to the food-obsessed colony. James Ruse, a former convict, produced the first wheat harvest for the colony in 1789. He then used seeds from this crop to plant more. He was rewarded for his efforts with chickens and pigs, as

FOOD IN FOCUS

FARM TECHNOLOGY REVOLUTION

PURPOSE

To investigate the development of food production and processing technologies in Australia since the arrival of the First Fleet.

Modern 'smart farms' will provide new career opportunities. The complete agricultural supply chain, including the affiliated food and fibre industries, already provides over 1.6 million jobs in the Australian economy.

Agriculture in Australia: growing more than our farming future

...

Agriculture today is a very sophisticated and highly technical industry, and in Australia it has been one of our most innovative and efficient industries ...

The ability of this industry to adapt, innovate and form successful collaborations will continue to support a strong and prosperous Australia with sustainable food security.

Agricultural production has remained important to our economy because we have effectively developed and delivered new technologies through a strong research base and a highly skilled and innovative farming community. In particular, we have been able to maintain our competitive export position even though we produce food on the driest inhabited continent, on low quality soils and with continual climate variability.

...

Over the next decade we will move to a scene where engineering and biology are intimately linked. Satellites will provide data on crop and rangeland health and productivity. This information will be combined with ground data and used as the basis for farm management decisions.

...

Agriculture is among our most technologically advanced industries, yet most Australians are largely unaware of the revolution that is occurring on our farms.

Source: Langridge, P., 2014, 'Agriculture in Australia: growing more than our farming future', *The Conversation*, 5 July 2014, CC Licence

There are approximately 85 681 farm businesses in Australia, 99 percent of which are Australian owned and operated. Each Australian farmer produces enough food to feed 600 people, 150 at home and 450 overseas. Australian farmers produce almost 93 percent of Australia's daily domestic food supply.

Source: 'Farm facts', www.nff.org.au/farm-facts.html

ACTIVITIES

1. Discuss why agriculture has been important to the growth of Australia as a nation.
2. Describe agriculture as you see it today.
3. Define food security and explain its importance.
4. How important is agriculture to the Australian economy?
5. Outline the types of issues and problems our agricultural industries have to overcome.
6. How will engineering and biology be used together on future farms?
7. Investigate the careers that will be available in the food, fibre and forestry industries in the future.

well as with the first land grant made by Governor Phillip in NSW. This small 30-acre plot was known as 'Experiment Farm' and established a basis for Australia becoming one of the world's leading agricultural nations.

Early settler cuisine

In the early years of the colony, meals were monotonous and unappealing. 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 was sometimes added to the cooking of any available green leaves or vegetables. This made a meal very similar to vegetable porridge. Meals were generally served hot and were high in fat, protein and refined carbohydrates, and particularly low in dietary fibre and vitamins.

These rations remained the basic diet for most Australians for the first 50 years of settlement. As farming was established and crops began to be successful, this diet was supplemented with traditional fruits and vegetables. While the traditions remained European, there is evidence that local ingredients were used in the colony. Some people were able to catch fish or collect crustaceans to supplement their restricted diet and a few ate some of the wild plants and fruits, such as wild currants and warrigal greens (native spinach). Historical journals and other written accounts of these early years describe meals like kangaroo soup, kangaroo steamer, wattle bird and echidna stew, bush turkey and parrot pie; dishes that transformed native ingredients into recognisable British meals.

The first recorded banquet in the new colony was held to celebrate King George III's birthday on 4 June 1788. George Worgan, the surgeon from the *Sirius*, wrote in a letter that at two o'clock the officers joined Governor Phillip in a 'very good Entertainment, considering how far we are from Leaden-Hall Market'. The meal included 'Mutton, Pork, Ducks, Fowls, Fish, Kanguroo, Sallads, Pies & preserved Fruits'.

FOOD IN FOCUS

COLONIAL COOKING

PURPOSE

To discuss the impact of migration on food habits through the introduction of new foods to Australia.

English and Australian fusion cookery, 1864

Pan Jam: This dish used to be made from kangaroo tails. Roast them in the ashes with the skin on. When nearly done, scrape them well, and divide at the joints. Then put them in to a pan, with a few slices of fat bacon, to which add a few mushrooms, pepper, &c. Fry gently, and serve. First-rate tack.

Slippery Bob: Take kangaroo brains, and mix with flour and water, and make into batter; well season with pepper, salt, &c.; then pour a table-spoonful at a time into an iron pot containing emu fat, and take them out when done. 'Bush fare,' requiring a good appetite and excellent digestion.

Roast Wombat (*Tasmania*): This animal feeds on grass and roots, and its flesh is eaten roasted; some persons like its flavour, others, again, decry it. It is also cooked in steaks. Native porcupines are cooked in a like way.

Source: *The English and Australian Cookery Book*, Edward Abbott

ACTIVITIES

1. Examine the recipes described above.
2. Would you eat some of these dishes? Justify your answer.
3. Identify ingredients that are still used today.
4. Describe the methods of cookery used in these recipes.
5. Propose how these ingredients may have been stored in the early colony.
6. What technologies do you think may have been available to the early colonists to assist in the preparation and cooking of food?
7. Using the rations of the First Fleet and your choice of any locally available ingredients from this time, plan a day's menu.

HANDS-ON

FOOD STORAGE USING A DRIP SAFE

PURPOSE

To investigate the development of food production and processing technologies in Australia by making a drip safe and assessing the effectiveness of this simple technology.

In the early stages of the colony, prior to the invention of refrigeration, it was difficult to keep fresh meats and dairy products for any length of time. A drip safe was an innovation that used the principles of evaporation to keep foods cool. It worked by having a bucket at the top that slowly dripped water which would dampen the hessian sides. The safe would be kept where it could catch the breeze, which was often on a verandah. The breeze would pass through the hessian and evaporate the water, resulting in cool air inside the safe (which then kept the food inside cool).

MATERIALS

You will need:

- a bowl or bucket (that will hold water)
- a stool or chair
- 10–12 long strips of hessian or calico
- water
- 2 x 250 g blocks of butter
- 2 plates
- 1 weight (e.g. a rock or a jar of sand).

ACTIVITY

1. Find a cool, shady spot under a tree to set up your drip safe – somewhere with a breeze would be ideal. Place the bowl on top of the stool. Fill with water.
2. Soak the fabric strips in the water and then drape them over the edge of the bowl and around the stool.
3. Hold the strips in place using a jar of sand.
4. Place one block of butter in the drip safe under the stool surrounded by the wet fabric.
5. Place the second block of butter on a plate in the shade.
6. Monitor the water level every 15–20 minutes. It may need to be topped up.
7. Observe each block of butter over a period of time. Record your observations using the table template.



Figure 1.14 Example of a drip safe

Sample	30 minutes	45 minutes	1 hour	End of the day
Butter in drip safe				
Butter in shade only				

QUESTIONS

1. In a table like the one shown above, outline your observations of the samples as the day progressed.
2. Describe the success of this basic technology.
3. If this was your only way of keeping foods cool, identify other problems that may have occurred with food storage.
4. Propose ways to improve the design of your drip safe to make it more effective.
5. How do you think refrigeration changed our food habits?

Taking it further

6. Find out about other methods of food storage and preservation used in the early colony.
7. Investigate the history of refrigeration. How and why was it invented, and by whom?
8. Evaluate how technology has contributed to modern Australian cuisine.

Impact of the colony on Aboriginal people

The colonisation of Australia had a devastating impact on Indigenous people. It is estimated that in just the first 10 years of European settlement, the Indigenous population of Australia was reduced by 90 per cent. The main reasons for this were:

- the introduction of new diseases such as smallpox, measles and influenza
- settler acquisition of Indigenous lands, which pushed the 'locals' away from their homes
- direct and violent conflict with the early settlers over land and resources.

As settlers began to occupy land around the settlement site, they encroached more and more on Indigenous sacred sites, hunting grounds and food supplies. The settlers completely ignored the deep spiritual connections the Aboriginal people had with the land and assumed they would be happy to move on to new land, due to the nomadic nature of their lifestyle. The Aboriginals lost their land and hunting grounds and were forced to conform to the European way of life.

Aboriginal people started to gravitate towards the settlements, where they 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 is still evident in some Aboriginal communities to this day.

HANDS-ON

BUSH BREAD

PURPOSE

To research the history of damper.

Damper, a simple bread made from flour and water and cooked on a heated hearthstone or in hot ashes, became a daily staple in the diet of the colonists. Damper (or 'Australian bush bread') has come to be an emblem of Australia's bush heritage. Indigenous peoples have ground seeds and grains over many centuries to produce breads high in protein and carbohydrates. They made small buns, or johnny cakes, or a large loaf, which we call damper. When new foods such as wheat flour were introduced, they replaced the more nutritious seeds and grains and in many areas the traditional skill of grinding seeds was lost.

ACTIVITIES

1 Investigate the different types of dampers and how they are cooked (e.g. fried as johnny cakes, or baked on coals or in camp ovens).
2 Find a traditional recipe for making damper and compare it to a more contemporary one.
3 Identify the cultural and nutritional issues that may have arisen for Aboriginal people as a result of using European flour.
4 Make a traditional damper in a practical lesson. Modify the recipe to make it more contemporary. What bush tucker ingredients could you add to the damper?
5 Find a traditional recipe that has been passed down within your own family. Write the recipe out so that someone unfamiliar with the food could prepare it, and illustrate the ingredients and/or process. Make the recipe and bring it in to share with the class.
6 Create a class recipe book with the recipes and include the stories about them: where they came from, who passed them on, why they are used, the occasions when they are made and eaten, and so on.

FOOD IN FOCUS

HOW WOULD YOU FEEL?

PURPOSE

To investigate the effects of immigration on lifestyle and food habits by exploring the feelings and consequences of displacement.

ACTIVITIES

Stop and think: do you like your way of life?

1 Imagine how you would feel if you welcomed strangers into your home and they never left.
2 What would it be like if they took control of your house and made you relocate far away?
3 How would you feel if they took your food and clean water?
4 Consider what it would be like to see a previously unknown disease sweep through your community, killing many.
5 Visualise how this would affect you, your family and future generations.
6 Predict the types of actions you would take to defend your way of life.
7 Describe how the settlement of Australia may have been different if the local Indigenous people had been treated as equals.
8 If you had been in charge of the new colony, how would you have changed what was done?



UNIT REVIEW

LOOKING BACK

1 Identify the foods that arrived in Australia on the First Fleet. Think about more than just the rations!
2 Why did the early settlers suffer from hunger?
3 What is a ration, and why was it needed in the early establishment of the colony?
4 Explain why meat was salted, instead of left fresh.
5 Define scurvy and explain why it would have been suffered by the settlers.
6 Explain the main reason the early settlers did not eat the native bush tucker.
7 How and why did the early settlers eventually incorporate local produce into their food habits?
8 Compare the diet of the traditional land owners to that of the colonists.
9 Discuss the reasons why the arrival of the First Fleet had such a devastating effect on the 'locals'.

FOR YOU TO DO

10 **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 Multiply these rations by two-thirds to calculate the women's rations and by one-third to calculate the children's rations.

11 Put yourself in the shoes of one of the first convicts to arrive in Australia. What measures would you have taken to ensure you did not starve?

TAKING IT FURTHER

12 Describe the problems faced by Aboriginal Australians adapting to non-Aboriginal food habits.
13 Research the health problems of Aboriginal peoples today. Compile a class report on your individual findings.
14 Develop a promotional strategy for healthy eating for use in Aboriginal communities that incorporates traditional foods.



Pre-1788:
Aboriginal and Torres Strait Islander peoples survived sustainably for thousands of years.



1788: The First Fleet introduced animals, plants, seeds, grains, flour, salted meat, sugar and alcohol.



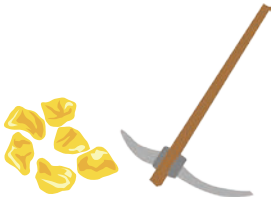
Convicts were used to build the colony.
Rations were limited to salted meats, flour, peas, rice, butter and rum.



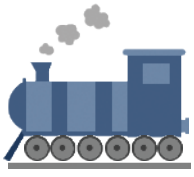
1820s: Local crop production established.
Wheat, corn, potato, fruits, vegetables, butter and cheese.
Beginning of export back to Britain.



Early 1800s: Labour arriving from Europe.
Wine production and dried fruits industry established.



1850s: Gold rush – many migrants from China and Ireland. Chinese market gardens established. Dairy industry takes off.



1890s:
Improved transportation means more migrants and steady food supplies.
Foods (e.g. wheat and tinned meats) also exported.
Communication channels also improving.



1900s: Depression + WWI / WWII.
Food shortages and rations.
Mass migration to escape the devastation of wars.



More and more processed and convenience foods available.



1950s: Nearly every home has a refrigerator, so food storage changes.



1960s: Supermarkets change the way we shop, and TV adds a new dimension to marketing and promotion.



1970s: Asian migration results in a variety of restaurants and cuisines, and eating out becomes popular.



1980s: Nutrition and lifestyle begin to play a key role in our food habits, and travel means we try and experience new foods and cultures.



2000s: Time-poor consumers want ready-made, easy meals.
TV shows like *MasterChef* heighten our interest in food.
There are a variety of marketplaces (e.g. online shopping).



2019: Concern for our food origins and food miles. pop-up farmers, markets and organic produce.



FUTURE
Where will our future food come from?

Figure 1.15 Rich cultural diversity is one of Australia's greatest strengths. It is central to our national identity.

Multicultural influences on Australian cuisine

As the colony became established, other free settlers began to migrate from around the world. Driven by the promise of a new life, waves of immigrants came to find fortune in the gold rush, or to escape the social upheaval of the industrial revolution, two world wars and the aftermath of the Vietnam War, and ongoing turmoil in the Middle East. Australia has evolved into a nation of people from over 190 different countries and 300 different ancestries.

Migration has played a vital role in shaping Australia's history, forming the multicultural identity we pride ourselves on today. Each wave of migrants brought with them their own traditions, customs and food habits, many of which are evident in what we know as contemporary Australian cuisine.



Pizza | Pad thai | Butter chicken | Green curry | Pad see ew

Figure 1.16 Australia's most popular takeaway meals

HANDS-ON

A SNAP IN TIME

PURPOSE

To investigate historical influences on contemporary Australian diets.



Getty Images/E+/TARIK KIZILKAYA

Figure 1.17 Social media now plays a key role in recording our food history.

ACTIVITY

Create your own post for social media (such as Instagram or SnapChat) that highlights one aspect of Australia's food history.

1. Find a suitable image (or take one of your own).
2. Add hashtags for:
   - **a** the type of cuisine, e.g. #Vietnamese
   - **b** the type of food and flavourings shown, e.g. #spicy
   - **c** time period, e.g. #1970s
   - **d** the contribution made to our lifestyle and food habits, e.g. #variety
   - **e** preparation techniques, e.g. #steamed

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 as a result. Cuisines also borrow traditional ingredients from other cultures and incorporate them into their own dishes. Australia is renowned for its fresh, safe and green food supply. As a nation we are not afraid to experiment and to try new and exciting foods and flavour combinations.

HANDS-ON

MULTICULTURAL AUSTRALIA

PURPOSE

To investigate multicultural influences on contemporary Australian diets, and design and prepare a dish that combines two or more cultural flavours, techniques or ingredients.

ACTIVITIES

1 Research five dishes that combine a variety of cultural flavours. Compile your findings in a table like the one below.

Dish	Cultures
Tandoori chicken pizza	India and Italy

2 Design your own 'fusion' dish to prepare, cook and serve in class.
- Think of elements of an Asian meal that could work on a pizza.
- Think of Mediterranean elements that could work in sushi.
- Combine fried rice with a European meat dish.
- Try to make sushi with something other than white rice.
- Try to make pizza dough with something other than white flour.

3 Develop your own recipe, including a name for your dish, suggested preparation and cooking times, ingredients list, method, serving suggestions.

4 Plan your practical task carefully by creating a time management plan.

5 Prepare, cook and present your dish in class. Focus on personal hygiene, food safety and safe work practices.

QUESTIONS

1 Conduct a sensory assessment of your final product. Explain why this combination of flavours, ingredients and techniques works well (or not) together.

2 Suggest how your dish could be improved.

3 Try some of the other items prepared during this class by other students. How do they compare to your own dish?
- Describe your favourite dish among those you tried during this activity. Explain why you liked it.
- Identify your least favourite dish. Justify your answer.

HANDS-ON

MULTICULTURAL TASTE TESTING

PURPOSE

To taste test a variety of multicultural foods. Be adventurous – find some foods that are not familiar to you.

WS Multicultural taste testing

ACTIVITIES

1 Prepare a sample of each food for everyone in the class to try.

2 Record your reactions to these foods using a sensory assessment tool. (Use the worksheet provided.)

QUESTIONS

1 What was your initial reaction to trying these unusual foods?

2 Describe something you really enjoyed tasting today.

3 Explain the reasons you may have disliked any of the foods you tried today.

4 What have you learnt from this activity?

Changing food habits

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 we make and our personal needs at different times in our life.



Getty Images/Emanuele Siracusa

Figure 1.18 The way you eat your food is a part of your food habits. In some cultures, people eat with their hands; in others, people use chopsticks or a knife and fork. How do you eat your food?

The food habits of most Australians 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.

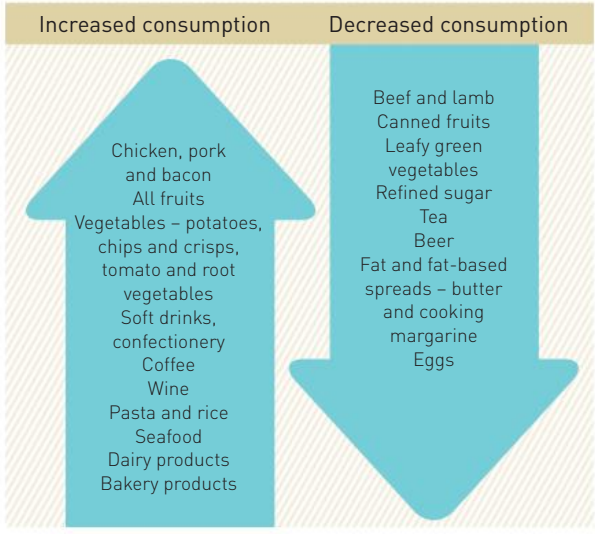


Figure 1.19 What we eat now has changed compared to what we ate 50 years ago.

FOOD IN FOCUS

WHAT AUSTRALIANS EAT

PURPOSE

To explore the food habits of Australians.

Food in Australia

Most Australians eat three main meals a day, but they also enjoy snacks. Australians love to eat outdoors, so barbecues, picnics and alfresco café dining are typical Aussie ways of sharing a meal.

- Breakfast (eaten first thing in the morning) may be light and fresh (e.g. cereals, yoghurt, fruits) or cooked (e.g. eggs, bacon, pancakes, porridge).
- Lunch (eaten in the middle of the day) if made at home may include a salad, sandwich or leftovers. Sushi, curry, falafel, noodles and pizza are also popular options.
- Dinner (eaten in the evening) is generally the main meal of the day. Meat and vegetables are very traditional, but a multicultural swing has seen foods such as pasta, curries, stir-fries, Mexican, etc. becoming more dominant. A shift away from meat also means many vegetarian or vegan options are available. More specific dietary requirements like halal, kosher and gluten-free are also catered for in most supermarkets, restaurants and cafés.
- Snacks (any time of the day). Morning and afternoon tea may be a muesli or nut bar and a piece of fruit, or a muffin or some vegetable sticks and dips. An array of local cheeses, nuts and nibbles is also a popular snack when entertaining other people.

ACTIVITIES

1 Do you agree with this description of Australians' eating habits? Why/why not?
2 What could you add or change about this overview?
3 Do your own habits fit into this description? Why/why not?
4 Describe the main influences on your food habits.
5 Write a general description of your eating habits.
6 Investigate the food habits of a culture other than your own, e.g. Indonesia, India, Lebanon. Find out:
   - what they eat
   - how they eat
   - when they eat
   - special cooking methods/ techniques.
7 Design, plan, prepare and present a meal that reflects the traditions and culture of your chosen group.

Food cultures links

Preparation techniques and cooking methods

Migrants from every country have brought with them different styles of preparation' cooking and eating. Over time, other groups have integrated these styles into their patterns of meal preparation and consumption.

Today we 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 cafés 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 our rich heritage and the various cultural groups who now call Australia their home.



Figure 1.20 Basic food preparation techniques

UNIT REVIEW

LOOKING BACK

1 Outline the key historical events that have helped shape Australians' current food habits.
2 List different types of restaurants in your local area. What culture have they been influenced by?
3 Identify a range of fast-food options that have a multicultural twist.
4 Make a list of your favourite food preparation techniques. When and why do you use these?
5 Describe one method of cookery that is regularly used by your family. Does it have any cultural significance?

FOR YOU TO DO

6 Keep a food diary for a week. Analyse your own eating habits and customs. Highlight the foods that may be linked to different cultures.
7 Investigate how the food habits of Australians have changed over the last 50 years.
8 Research how sous vide (low-temperature, long-time cooking) and microwaving are used as cooking methods in Australia both domestically and commercially.

TAKING IT FURTHER

9 Create a food origin world map display board for your food technology classroom.
10 Investigate a range of preparation and cooking techniques. Create a flipbook which explains the origins and uses of each technique.
11 As a class, prepare a multicultural feast. Explain the origins of your chosen dish to the rest of your class.
12 Invite some guests with specific cultural skills to visit your class and demonstrate the preparation of their traditional dishes.

The contemporary Australian diet

As we search for a unique food culture to call our own, Australians happily take inspiration from countries all over the world. Australian food culture has been influenced by our own fresh ingredients, unique Indigenous customs, British traditions, Italian home cooking and American fast food, as well as by Southeast Asian and Middle Eastern cuisines. Australians typically have an adventurous spirit and a willingness to try things that are new and exciting. New culinary experiences and technologies are readily accessible and, with the help of the internet, social media, international travel and television, they are quickly adopted in some way or form somewhere in Australia.

The cuisine of modern Australia fuses eclectic tastes and traditional menus. Pie floaters, bangers and mash, pad thai, laksa and crème caramel are all commonly found on one menu. These dishes are also now frequently prepared in home kitchens around the nation. Australians like to combine different foods, flavours and techniques on one plate.

A love of the outdoors is typically Australian. The warm, sunny conditions for much of the year mean that Australians spend more time outside. Informal outdoor meals therefore play an important part in our lifestyle, from barbecues with family and friends, to fish and chips at the beach, meat pies while watching weekend sport or picnics in the bush. Australians are now eating in a way that truly reflects our own relaxed, casual lifestyle and climate. We now are comfortable using a diverse range of cooking methods to prepare a wide array of ingredients in different culinary styles. This diversity has made it difficult for the modern Australian diet to be defined narrowly by a common style or common recipes but one thing is for sure – we are unique.



iStock/Getty Images Plus/zstockphotos

Figure 1.21 A love of the outdoors is typically Australian.

'Australian cuisine reflects our unique land where you can grow just about any product. It's a modern society drawing on multicultural influences. We're able to interpret with freedom and an open mind.'

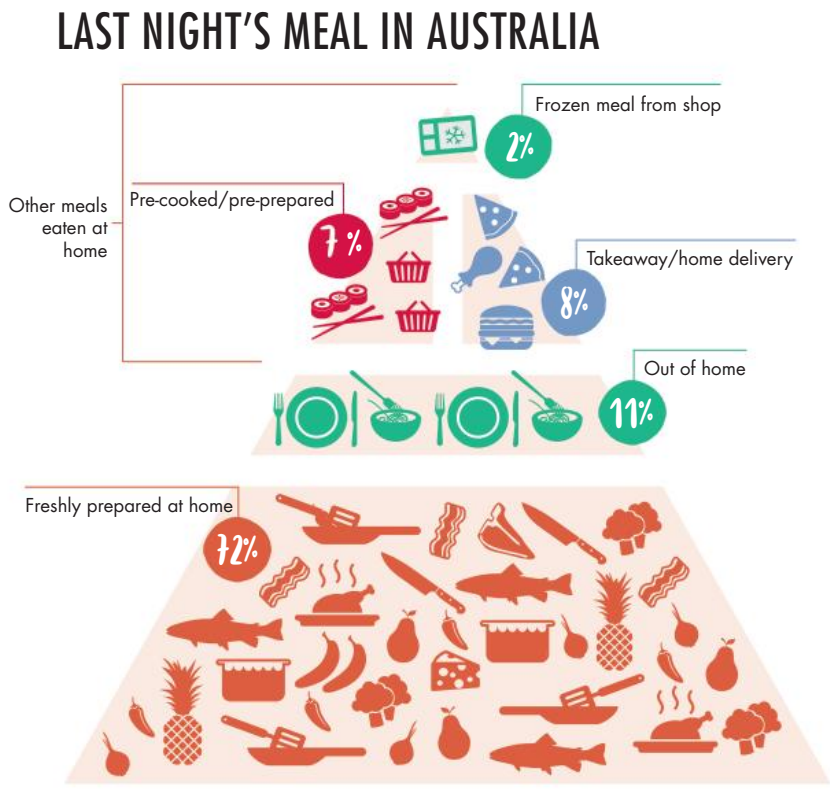
Peter Gilmore

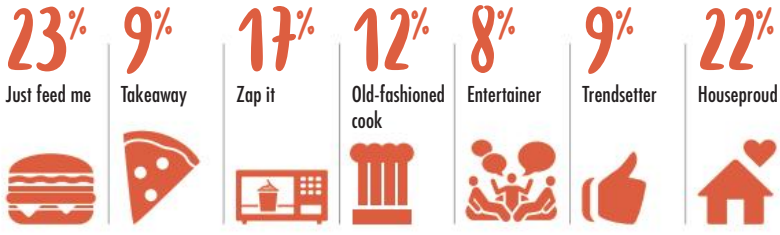
FOOD IN FOCUS

WHAT DID AUSTRALIANS EAT LAST NIGHT?

PURPOSE

Reflect upon the changing nature of Australian cuisine.





ACTIVITIES

1 Examine the infographic.
2 Describe what the average Australian had for dinner last night.
3 Identify the places where dinner was eaten.
4 Discuss the reasons for the selections made.
5 How might this differ from what your parents typically ate when they were adolescents?
6 How might this differ from what your grandparents typically ate when they were adolescents?
7 What did you eat for dinner last night, and why?

FOOD IN FOCUS

A BUCKET LIST OF FOOD EXPERIENCES IN AUSTRALIA

PURPOSE

To investigate the diversity of the modern Australian food scene.

Australia's bucket list food experiences

Australia has an exciting array of native ingredients and a food culture that is constantly evolving as international dishes are reimagined and adapted by the local cuisine. Not only can you indulge in unique flavours, but you can enjoy them in one-of-a-kind surrounds. Try a plate of Asian street food on a Darwin beach at sunset, or a meat pie at Melbourne's most famous sporting ground. Plus there are top-class restaurants run by world-renowned celebrity chefs. Here are 15 bucket list Australian food experiences.

- Savour a degustation at Attica
- Celebrate summer with mango treats
- Go to Quay Restaurant
- Eat Australia's best pizza in Carlton
- Taste fresh local produce in Tasmania
- Go to the Western Australia Gourmet Escape
- Taste the Fleurieu Peninsula
- Eat a Mbantua dinner by the campfire near Alice Springs
- Take a sunset dinner cruise through Nitmiluk Gorge
- Eat on the sand at Mindil Beach Sunset Market
- Eat a meat pie at the MCG
- Sample our fastest-growing food hub in Brisbane
- Drink coffee in Melbourne
- Dine alfresco around Western Australia
- Taste Thai street food in Perth

Source: Adapted from Chai, P, 'Australia's bucket list food experiences', australia.com

ACTIVITIES

1 Find out a little more about each of these iconic Australian food experiences.
2 Using these and others, create your own top 10 'bucket list' food experiences you would like to have in Australia.
3 Design a range of postcards or vlogs to promote five of these experiences.
4 Design a social media campaign to promote one of these experiences.
5 Find a food experience not on this list and write a review about it for an online travel blog.

Australia's bucket list food experiences

UNIT REVIEW

LOOKING BACK

1 Identify what you consider to be Australia's national cuisine.
2 What foods do you think people from other countries think we eat?
3 Explain why Australians consider their modern cuisine is unique.
4 Discuss how our lifestyle influences our food habits.

FOR YOU TO DO

5 Design and make a 'national dish' for Australia. Explain how and why this dish represents our nation.
6 Photograph your dish and create a 'photo story' to showcase the dish.
7 Research how and where each of the following 'Australian' dishes originated: lamingtons, pavlova, meat pies, Anzac biscuits.
8 Debate the following: 'Australia does not have its own national cuisine.'
9 Predict what the Australian diet will consist of in 2121.

TAKING IT FURTHER

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 exhibition.
11 Investigate the percentage of Australians born in another country. What are the most common countries of birth? How has this influenced our modern food culture?

Australian Bureau of Statistics

Influences on food selection

The key driver for eating is, of course, hunger, but there are many other factors that can influence our food selection, including history, culture and tradition – most decisions are a result of many interrelated factors.

Physiological influences

Physiological factors affect the body's need and desire for food as a source of nourishment. If the body is to remain healthy and functioning correctly, it must have adequate amounts of food containing the essential nutrients.

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 but still feel unsatisfied, then the food you ate is considered to have a low satiety value.

HANDS-ON

GLYCEMIC INDEX OF FOODS

PURPOSE

To examine the role of the Glycemic Index (GI) of food in food selection.

ACTIVITIES

1 Find out about the GI used for foods.
   - Why was it developed?
   - How can it be used?
   - What foods have a high or low GI?
2 Design a daily meal plan that includes a variety of foods that have a low GI and therefore will keep you feeling fuller for longer.
3 Prepare a dish that has a low GI.

Glycemic Index Foundation



Shutterstock.com/Robyn Mackenzie

Figure 1.22 Foods with a low GI will keep you feeling fuller for longer.

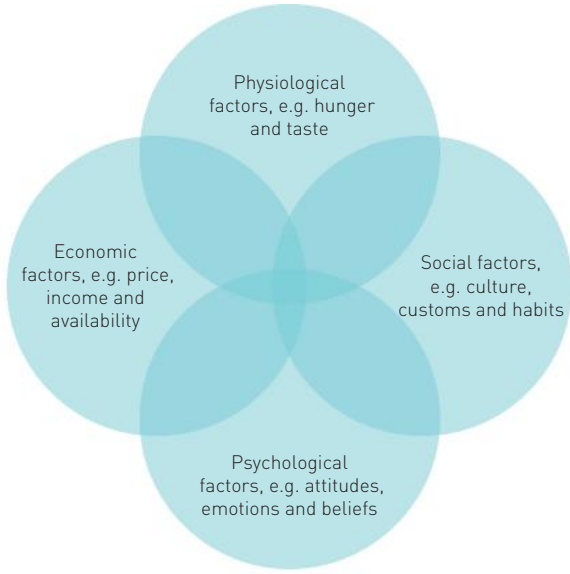


Figure 1.23 Influences on food selection

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 your food habits. 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. The amount required depends on factors such as growth and development, gender, body size and activity level.

Psychological influences

Psychological factors relate to the mind and the emotions. They are difficult to define and vary from person to person depending on their lifestyle and background. Some of these influences such as beliefs, habits, values and past experiences with food have a continuous influence on the foods chosen, while selections made as a result of emotions, self-concept and attitudes can vary on a daily basis.



Getty Images/E+/tbradford

Figure 1.24 Eating bugs – a practice known as **entomophagy** – is good for you as well as for the planet.

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 may exist around the eating of certain animals. For example, many cultures like to snack on grubs and bugs, while most of us would cringe at the idea.

Experiences

Experiences can influence your relationship with food. Foods commonly eaten when the family is together, or when 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 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. Do you have a favorite snack to eat while you study?

Habits

Habits are routines that you can perform without thinking much about them, and are usually hard to break. They can be something that you do at a particular time each day or in a certain situation. 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 your religion. For example, your family may always say a prayer before they consume any food, or may not eat meat on Fridays.

Social influences

Eating is a social activity, and the sharing of food is often a central part of socialising with others. 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 the most important socialising groups and both have a significant influence on the foods you select when you are with them.

When families entertain, special foods and traditions are shared. It is on these occasions that 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.

The lifestyle you lead and the resources available to you may also be classified as social factors that influence your food selections. Jobs, school, family responsibilities, location and leisure activities may all influence the choices we make about foods.

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 online or 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.

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 also have sufficient storage space, 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 ones. Frozen pizza that has undergone a range of processes before you purchased 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: Perishable foods that are close to use-by dates are usually sold at a reduced price.

FOOD IN FOCUS

FOOD AND INCOME

PURPOSE

To examine the economic influences on food selection.

Eating out in Australia

It's one thing to say that the food and beverage industry has continued to grow but it's another to back it up with data. Intermedia have released their annual market research report exploring the spend, behaviour and preference of the Australian population when it comes to eating out. With the average Australian household spending around $4900 a year on eating out, understanding where the people are spending and what they are enjoying is key to creating food and beverage precincts or single businesses that thrive into the future.

In 2017, Australians had 85,000 options when it came to choosing a place to eat out, making the food and beverage industry big business as well as a competitive one. Total revenue clocked $45 billion in the last year with fast food outlets taking the biggest slice of the revenue pie, bringing in just over $6.5 billion, quickly followed by our restaurants, which brought in over $4.5 billion. To put things into perspective, coal exports in Australia generated $34.3 billion so it is safe to say that the food and beverage industry is a thriving part of the Australian economy.

Source: 'Eating out in Australia: 2017 in review', futurefood.com.au, 10 January 2018

ACTIVITIES

1. What is the average Australian household spending on eating out each year?
2. Do you think your family would spend this much on eating out? Why/why not?
3. Why do you think fast food has the biggest market?
4. What is your favourite place to eat when away from your home? Why?
5. Conduct a survey of your classmates to find out the most popular place to eat out. Compare your results to the data in the article.
6. Explain why the hospitality industry is a thriving part of the Australian economy.



Shutterstock.com/EA Given

Figure 1.25 The food and beverage industry is an important part of the Australian economy.

9780170442855



Ms Olympia Yarger

OLYMPIA YARGER: MAGGOT FARMER FROM CANBERRA

SUSTAINABLE INSECTS

Many cultures have traditionally incorporated insects in their diet, but people with Western tastes are often squeamish about it. However, insects and grubs have recently begun appearing more readily on menus around the world. Concerns about sustainability and feeding a growing human population mean that entomophagy is being seriously considered as a food source for the future.

Olympia Yarger is an insect farmer. She has established Goterra, a waste management company that feeds food waste to growing larvae (maggots) from the black soldier fly. Both the larvae and their off-casts, or 'frass', are valuable agricultural commodities. Frass makes a nutritious soil conditioner and the live larvae, which are high in proteins and fats, can be used as feed in the aquaculture and poultry industry.

Ms Yarger sources her waste from government organisations, local councils, hotels, hospitals, restaurants and households. The larvae can consume multiple times their body weight in food waste each day making this type of farming a very environmentally friendly way to dispose of unwanted food waste.

Ms Yarger is also interested in insects as an alternative protein source for humans. While the local market is slow to adapt to the possibilities of eating insects instead of steak, Goterra does supply mealworms and crickets for overseas human consumption.

Ms Yarger is an advocate for the future acceptance of insects in the everyday Australian diet. She believes this type of farming and waste management is an opportunity for farmers and regions to develop innovative new careers and add value to an evolving marketplace.

Goterra

ACTIVITIES

1. Insects are said to be a food of the future. Why do you think this is the case?
2. What does Olympia Yarger farm?
3. How is this type of farming helping with food waste problems?
4. Discuss the reasons Australians generally avoid the consumption of insects in their diet.
5. Predict how and why this attitude may change in the future.
6. Design a dish using a form of insect protein. Prepare and make it for the class to try. Demonstrate appropriate selection of equipment and techniques during this activity.

Bug recipes

PRACTITIONER FOCUS

HANDS-ON

AUSTRALIA'S CHANGING CUISINE

PURPOSE

To reflect on the changing nature of Australian cuisine.

ACTIVITY

Design a two-course meal that reflects the changing nature of Australian cuisine.

1 Find some suitable recipes that reflect modern Australian cuisine.
2 Modify the recipes to incorporate one or more native ingredients that are readily available in your local supermarket or online.
3 Design a time management and workflow plan to assist you during this lesson.
4 Safely prepare and present this meal during a practical lesson in your class.
5 Evaluate the success of the meal by conducting a sensory assessment on the finished product.

QUESTIONS

1 Were you happy with the changes you made to your recipes? Why/why not?
2 Describe the native ingredients you featured in your menu.
3 Discuss the benefits of including these ingredients in your menu.
4 Explain any other cultural influences that are evident in your chosen menu.
5 Comment on the effectiveness of your time management and workflow plan.
6 Analyse how this menu reflects the changing nature of Australian cuisine.
7 Debate this question: Does Australia really have a national cuisine that defines us as a nation?

UNIT REVIEW

LOOKING BACK

1 Identify 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 Describe the foods you eat when you are happy. Why do you choose these foods?
4 Describe the foods you eat when you are sad or stressed. Why do you choose these foods?
5 Explain why age, gender and activity levels influence our food choices.
6 Justify the importance of food as an important aspect of social gatherings. Outline how your family entertains. What foods are offered to guests, and how are they presented? Do your classmates' families do anything different? How?
7 What economic factors affect the foods you choose to buy?

FOR YOU TO DO

8 Investigate how our body knows it is hungry or thirsty.
9 Design a survey to be completed by all students in your class as a means of analysing each person's favourite and least favourite foods and the reasons for this.

TAKING IT FURTHER

10 Working in pairs, complete the following tasks.
   a Design a low-cost main meal.
   b Write up a work plan, including time, sequences of steps, processes and equipment used, health and safety considerations.
   c Visit the supermarket or shop online to cost the items for your meal and determine the total cost.
   d Prepare your meal and undertake a sensory and nutritional evaluation of the finished product.

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Chapter review

LOOKING BACK

1 Identify a native food that falls into each of the following categories. In a table like the one below, describe how it is used in Australia today.

Category	Example	Uses
Food from animals		
Food from plants		
Edible nuts and seeds		
Insects and grubs		
Native spices, honey and nectars		
Fungi		

2 Clarify why Aboriginal Australians were healthier prior to European settlement.
3 Describe the types of foods that the early settlers consumed.
4 Outline how and why meat was preserved in the early colony.
5 Explain why European settlers 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 Provide one example of how a person's economic position can influence their food choices.
9 Describe some cooking methods introduced to Australia through immigration.
10 How 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

11 Using the internet, research native foods traditionally eaten by the Aboriginal people in your local area. Organise for a representative of the group to visit your classroom. Ask them to translate the names of the native foods for you. Prepare a range of questions that you can ask your visitor so that you gain a better understanding of this chapter.
12 Research a famous Australian restaurant that incorporates native ingredients in their menu. Describe the types of dishes included on their menu. Try to identify what influences the choice of foods they present to their customers.
13 Modify a typical 'Australian' recipe (e.g. Anzac biscuits) to incorporate some native bush flavours.
14 Research the food rituals, taboos and laws of a religion other than your own.

TAKING IT FURTHER

15 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.
16 Investigate the significance of food in traditional Aboriginal culture. Prepare a presentation about the technologies used by Aboriginal Australians for collection and preparation of their food.
17 Discuss why many Aboriginal Australians continue to eat traditional bush foods.
18 Predict the aspects of Australian life that would be different if Australia had been colonised by a country other than Great Britain. In groups, brainstorm examples. Design a poster highlighting what life in Australia might have looked like today.
19 Visit your local shopping centres and list all 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.
20 Find a Food Technology class from a school that is not in your local area. Organise a Skype or Google Hangouts session to compare the different types of foods available in each area.
21 Select one cultural group from the Asia-Pacific region other than Australia.
- Research the types of traditional foods served.
- Explain how this culture has influenced food preparation techniques and the foods eaten in Australia. Outline the availability of food from this culture in Australian supermarkets.
- List the foods from this cultural group that have become takeaway and fast foods.
- With a partner, select and prepare one of these foods.
- Analyse the nutritional value of the food you have prepared.

Recipe	Techniques	Equipment	Dietary considerations
Macadamia and wattleseed Anzac biscuits 	Melt and mix Baking Sifting	Measuring equipment Tray Bowl Board Knife Saucepan Spoon Fork Wire rack	V Could use gluten-free flour! Contains nuts. Please check your school's nut policy before preparing
Quandong relish 	Simmering	Measuring equipment Board Knife Saucepan Spoon Jars	V GF Vg DF
Kangaroo and macadamia salad 	Stir-frying	Measuring equipment Food processor/ mortar & pestle Bowl Wok Tongs Jar Board Knife	GF DF Contains nuts. Please check your school's nut policy before preparing.
Johnny cakes (damper) 	Kneading Baking	Measuring equipment Baking tray Sieve Bowl Fork Board Pastry brush	V Could use gluten-free flour!
Crispy-topped beef mince pies 	Blind-baking Sautéing	Measuring equipment Muffin tins Board Knife Baking beads/rice Saucepan Spoon	
Mexican pizza 	Sautéing Baking	Measuring equipment Baking tray Board Knife Frypan Spoons	V if substitute is made.
Nasi goreng 	Lime wedges Shallow frying Chiffonade	Measuring equipment Board Knife Saucepan Frypan Spoon	GF DF Could be V if meat left out
Vegie burgers 	Caramelised onion Shallow frying	Measuring equipment Board Knife Bowl Frypan Spoon Egg flip	V If altered as suggested in recipe: Vg GF DF

KEY

V = vegetarian Vg = vegan GF = gluten free DF = dairy free

Note: In the nasi goreng recipe we use spring onions. To clarify, the recipe uses the thin, white onion with the long, green leaves. You may know these as shallots.

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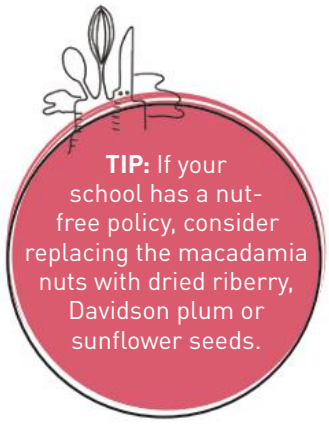
RECIPE

Macadamia and wattleseed Anzac biscuits

Preparation time 15 minutes **Cooking time** 5–10 minutes **Makes** 12

INGREDIENTS

½ cup whole macadamia nuts
¾ cup plain flour
1½ cups rolled oats
¾ cup caster sugar
½ cup desiccated coconut
1 tablespoon wattleseeds
2 tablespoons boiling water
1 tablespoon golden syrup
1 teaspoon bicarbonate of soda
125 g butter, melted



TIP: If your school has a nut-free policy, consider replacing the macadamia nuts with dried riberry, Davidson plum or sunflower seeds.

METHOD

1. Preheat oven to 180 °C. Line a flat tray with non-stick baking paper.
2. Soak wattleseeds in hot water for 5 minutes and then drain.
3. Spread the macadamia nuts over the tray and cook in preheated oven for 5 minutes or until lightly toasted – be careful not to burn them. Transfer to a chopping board to cool slightly, then coarsely chop.
4. Place the flour into a large bowl. Add the toasted macadamia nuts, softened wattleseeds, rolled oats, sugar and coconut, and stir to combine.
5. Melt the butter in a small saucepan with golden syrup. Remove from heat. Add bicarbonate of soda.
6. Add the butter mixture to the flour mixture and use a spoon to combine.
7. Roll mixture into balls and place on lined trays. Use a fork or the back of a spoon to flatten slightly.
8. Bake in preheated oven for 10–12 minutes for chewy biscuits or 15 minutes for more crunchy biscuits.
9. Set aside for 5 minutes, then transfer to wire racks to cool.
10. Store in an airtight container for up to 1 week.

QUESTIONS

1. Identify the native Australian ingredients used in this recipe.
2. What other flavours may work well in this recipe? Why?
3. Explain what happened when you added the bicarb soda to the melted butter.
4. Find out where and why the Anzac biscuit originated.
5. The technique used to prepare these biscuits is known as 'melt and mix'. Explain what this means.



Mark Fergus

RECIPE



Mark Fergus

Quandong relish

Quandongs are a fruit indigenous to Australia. They are prized for their high vitamin C content (twice that of an orange). They can be used to make a variety of sweet or savoury dishes. This relish is delicious on barbecued meats, hamburgers and vegie burgers, or with an Aussie pie.

Preparation time 30 minutes **Cooking time** 30 minutes **Makes** 4 small jars

INGREDIENTS

40 g air-dried quandong (available online from The Australian Superfoods Co.)

1 small onion, diced

300 mL vinegar

150 g sugar

6 g salt

1 teaspoon dried chilli flakes (optional)

TIP: To sterilise jars, wash thoroughly in hot soapy water, rinse and drain. Place on oven racks, with space between them and heat at 120 °C for 10–15 minutes. Or place jars in a large pot of boiling water for 10 minutes, then drain upside down on a clean tea towel and dry in the oven.

METHOD

1. Sterilise 4 small jars.
2. Soak dried quandongs in water for a minimum of 30 minutes. Drain and then cover with fresh water.
3. Cook until soft. Drain and retain liquid.
4. Add onion, vinegar, sugar, salt and chilli flakes.
5. Simmer for 30 minutes. Add some of the retained liquid if it is dry.
6. Remove from heat and blend.
7. Return mixture to the pot and simmer until thick and creamy.
8. Pour into clean, warm jars and seal.

QUESTIONS

1. Identify the nutritional benefits of quandongs.
2. Why do the quandongs need to be soaked before they can be used?
3. If quandongs are not available, how could you modify this recipe to use a different fruit?
4. What types of dishes could a fruit chutney such as this one be used with?
5. Assess the importance of using warm, sterilised jars to store the chutney.

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RECIPE

Kangaroo and macadamia salad

This dish uses Australian native ingredients and flavours infused with other elements from around the world. The dish is a modification of a classic Chinese stir-fry.

Preparation time 20 minutes (+ time for marination, if possible)

Cooking time 5 minutes (+ 5 minutes to rest) **Serves** 2

INGREDIENTS

1 dried lemon myrtle leaf

1 rosemary sprig, leaves picked

1 large garlic clove

½ tablespoon macadamia oil

1 tablespoon Australian bush spices blend (e.g. McCormick's Bush Spices Seasoning)

200 g kangaroo fillets, thinly sliced

½ cup *each* baby spinach and rocket leaves

1 cup warrigal greens

¼ red onion, thinly sliced

½ red capsicum, thinly sliced

30 g roasted macadamia pieces

Honey mustard dressing

1 teaspoon mustard

1 teaspoon bush honey

1 tablespoon white wine vinegar

1 tablespoon macadamia oil

TIP: For best results, kangaroo should be cooked rare to medium rare.

TIP: If your school has a nut-free policy, consider replacing the macadamia nuts with dried riberry or Davidson plum.

METHOD

1. Use a food processor or mortar and pestle to combine lemon myrtle, rosemary, garlic and macadamia oil to form a paste.
2. Combine spice mix, kangaroo and paste in a bowl. Coat meat well, cover and chill. Overnight marination will give a better flavour.
3. Add the kangaroo to a hot wok or pan. Stir-fry for 2–3 minutes. Transfer to a plate and rest, covered loosely with foil, for 5 minutes.
4. Make the dressing by placing the mustard, honey, vinegar and oil in a small jar and shaking well to combine.
5. Toss warrigal greens, spinach and rocket in a large serving bowl.
6. Scatter the kangaroo, onion, capsicum and macadamias over the leaves.
7. Drizzle with dressing and serve immediately.

QUESTIONS

1. Identify the native ingredients used in this recipe.
2. From which country does the technique of stir-frying originate?
3. When do you think this technique was first introduced to Australia?
4. Why is it important to use a hot pan or wok when stir-frying?
5. Describe a mortar and pestle, and explain what it is used for.



Mark Fergus

RECIPE



Mark Fergus

Johnny cakes (damper)

Preparation time 15 minutes **Cooking time** 20 minutes **Makes** 6–8

INGREDIENTS

2 cups self-raising flour
1 teaspoon salt
1 tablespoon wattleseeds
1 teaspoon lemon myrtle
1 cup milk
1 tablespoon olive oil
Milk, to brush
Golden syrup to serve

TIP: Wattleseeds and lemon myrtle are available in most supermarkets, online or from spice stores.

TIP: Try not to over-knead the dough, as this will make your final product tough.

METHOD

1. Preheat oven to 180 °C. Grease a baking tray.
2. Sift the flour and salt into a large bowl. Add the wattleseeds and lemon myrtle and stir to combine.
3. Make a well in the centre of the dry ingredients, add the milk 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. Divide into 6–8 smaller portions and roughly shape into discs. Place on a greased baking tray and brush tops with milk.
6. Bake for 15–20 minutes, or when the 'tap test' (it sounds hollow when tapped) indicates that it is done.
   OR fry in a frypan using enough oil to cover the bottom.
7. Serve warm, drizzled with golden syrup.

QUESTIONS

1. List some other shapes and forms that damper can take.
2. Explain other ways damper could be cooked.
3. How would you know if you have been too vigorous and over-kneaded the dough?
4. Modify this recipe to incorporate other native bush foods.
5. Modify this recipe to give it a multicultural twist.

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RECIPE

Crispy-topped beef mince pies

This dish is reflective of something that could have been made using the rations available in the early colony. Some people even claim it has status as Australia's national dish. It has been modernised here using ready-made pastry and potato gems. You could mix it up with different fillings to give it a multicultural feel.

Preparation time 15 minutes **Cooking time** 30 minutes **Makes** 4

INGREDIENTS

20 g butter

½ large brown onion, finely chopped

1 garlic clove, crushed

1 tablespoon tomato paste

150 g lean beef mince

2 tablespoons beef stock

½ teaspoon dried mixed herbs

¼ cup diced tomatoes

1½ tablespoons gravy powder

¼ cup frozen peas

1 sheet frozen ready-rolled shortcrust pastry, partially thawed

12 potato gems (or pre-prepared gnocchi or mashed potato)

¼ cup grated cheese

METHOD

1 Preheat oven to 200 °C.

Pie cases

2 Grease 4 holes of a muffin tin.
3 Cut each pastry sheet in quarters.
4 Use pastry to line 4 muffin pan holes.
5 Place muffin pans in oven. Blind-bake pastry cases for 8–10 minutes or until lightly golden.

Filling

6 Prepare ingredients.
7 Heat oil in a saucepan over medium heat. Sauté onion and garlic until soft.
8 Add tomato paste. Cook for 1 minute.
9 Increase heat to high. Add mince. Cook, stirring for 8–10 minutes or until browned.
10 Add stock, herbs and tomatoes. Bring to the boil.
11 Blend gravy powder with a little water. Add to mixture and mix well. Reduce heat to medium-low.
12 Simmer, partially covered for 10 minutes or until thick. Remove pan from heat. Stir in peas. Set aside.

To assemble pies

13 Two-thirds fill each pastry case with mince mixture.
14 Top pies with gems, sprinkle with cheese.
15 Bake for 12–15 minutes or until tops are golden and crisp.
16 Serve with fresh garden salad and a dollop of quandong chutney.



Mark Fergus

QUESTIONS

1 Pies were a staple of the early colony. Describe three types of fillings that may have been used.
2 Describe three multicultural pie fillings that could be used for this recipe.
3 Find out how to make puff pastry from scratch.
4 Outline the benefits of using frozen vegetables in this recipe.
5 What is 'blind-baking' and why is it used?

RECIPE



Mark Fergus

Mexican pizza

This dish not only echoes current food trends but is a fusion of the cultures reflected in our history.

Preparation time 15 minutes **Cooking time** 20 minutes **Makes** 2

INGREDIENTS

- 150 g mince meat (could substitute with black beans or TVP)
- 2 tablespoons tomato paste/pizza sauce/pasta sauce
- ¼ onion, finely chopped
- 2 cloves garlic, crushed
- 1 tablespoon oil
- 2 teaspoon taco seasoning
- ¼ cup refried beans
- 2 tablespoons taco sauce
- Chilli, cayenne pepper or Tabasco (optional)
- 1 cup grated mozzarella cheese
- ½ avocado, mashed
- 2 tablespoon sour cream
- 1 tablespoon sweet chilli sauce to garnish
- 2 small pizza bases or pita breads

METHOD

1. Preheat oven to 180 °C. Line a baking tray.
2. In a frypan, sauté onion and garlic in oil until soft.
3. Add mince, breaking up any lumps with a wooden spoon. Cook until well browned.
4. Add taco seasoning and refried beans. Stir to combine. For more spice add chilli, cayenne pepper or Tabasco to taste.
5. Spread 2 small pizza bases or pita breads with a little taco sauce, top with the mince and sprinkle with grated cheese.
6. Bake for 10–15 minutes in a hot oven at 220 °C, or until the bases are golden and crisp.
7. Serve topped with avocado, sour cream and sweet chilli sauce.

QUESTIONS

1. Identify the two cultural connections that are fused into this dish.
2. At what point in Australia's food history were these cultures introduced?
3. Describe your favourite pizza topping. Explain your choice.
4. Make a list of other popular contemporary Australian pizzas.
5. Design a pizza topping that uses Australian native ingredients.
6. If you could make a sweet dessert pizza, what would you put on it? Why?

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RECIPE

Nasi goreng

'Nasi goreng' literally means 'fried rice' in Indonesian. This dish is served at any time of day and is a good way to use up leftover rice. We have added plenty of vegetables to this recipe to help you reach your daily requirement of five serves of vegetables.

Preparation time 10 minutes **Cooking time** 20 minutes **Serves** 2

INGREDIENTS

1½ cups cooked rice (½ cup uncooked)
2 tablespoons oil
1 egg, beaten with pepper (or put aside to fry)
2 spring onions (white part), sliced
1 garlic clove, crushed
¼ teaspoon ginger, crushed
150 g chicken thigh, trimmed and thinly sliced
1 slice bacon or ham, diced
Asian greens, chiffonade
1 tablespoon corn kernels
¼ carrot, diced
½ stick celery, sliced
¼ cup frozen peas
1 tablespoon kecap manis
1 tablespoon soy sauce
Salt and pepper to taste
The leftover spring onion (leaves), finely sliced, to garnish
Lime wedge to garnish

Optional

¼ red capsicum, chopped
¼ green capsicum, chopped
Fried egg

TIP: Kecap manis is a sweetened aromatic soy sauce that originates from Indonesia. It is dark, syrupy and sweet due to the addition of palm sugar.

METHOD

1. Cook rice in 1 litre of boiling water and 1 teaspoon salt for 12 minutes. Drain, rinse and cool. (Spreading out rice on a tray in the fridge will help it dry out.)
2. Prepare meat and vegetables.
3. Heat half the oil in frying pan or wok. Cook egg until set. Lift egg, allow to cool and then slice into long strips.
4. Add remaining oil and fry spring onion, ginger and garlic.
5. Add chicken and bacon and cook until golden brown.
6. Add remaining vegetables (including capsicum, if using) and sauté until soft.
7. Add rice, sauces, egg pieces, salt and pepper. Cook for 1 minute, stirring gently, to warm through.
8. Garnish with spring onion, lime wedge (and/or fried egg) and serve immediately.
   Note: Add sweet chilli sauce for a bit of bite.

QUESTIONS

1. Why do you think this dish is one of Australia's favourite takeaway meals?
2. Identify some other dishes originating in Indonesia that are available in Australia.
3. What ingredients need to be removed to make this a vegetarian option? What could be used instead?
4. Describe the type of Asian greens you used in this recipe.
5. Discuss your favourite takeaway choice.



Mark Fergus



Mark Fergus

RECIPE

TIP: To caramelise the onions, heat a little oil in a large frypan over medium heat. Add 1 sliced onion and cook until brown and soft. Add 1 tablespoon brown sugar and 1 tablespoon balsamic vinegar. Stir to combine. Cook for 2 minutes. Cool.

Vegie burgers

Burgers are very Australian, but our growing awareness of food sustainability means that many people are including more vegetarian or vegan options in their meals. Of course, to be Australian a burger has to include beetroot! Try adding some homemade quandong relish for another Aussie twist.

Preparation time 15 minutes **Cooking time** 10 minutes (+ 30 minutes to cook lentils)
Serves 2

INGREDIENTS

1 cup cooked red lentils
1 tablespoon olive oil
1 small red onion, caramelised
1 medium zucchini, grated and drained
½ cup wholemeal breadcrumbs (could use gluten-free)
¼ cup wholemeal plain flour
1 egg (for vegan version, leave out or replace with flax egg)
½ teaspoon ground cumin
½ teaspoon ground coriander
Salt and pepper to season

To serve

2 large burger buns (could use lettuce leaves or gluten-free bread)
½ cup mixed salad leaves
1 small tomato, sliced
½ avocado, mashed
4 slices beetroot
Chutney or relish
Cheese (optional, leave out to be vegan)

METHOD

1. Place cooked lentils, caramelised onion, zucchini, breadcrumbs, flour, egg and spices in a large bowl. Season.
2. Mix well and shape into 2 patties.
3. Heat oil in a non-stick frypan over medium heat. Cook patties for 5 minutes on each side or until golden. Drain on absorbent paper.
4. Serve patties in rolls with salad and chutney or quandong relish.

QUESTIONS

1. Evaluate the reasons Australians have a growing awareness of food sustainability.
2. Research 'food miles'. Define the term and explain how they are measured.
3. Besides sustainability, why do some Australians choose to follow a vegetarian or vegan diet?
4. Identify the benefits of a vegetarian or vegan diet.
5. Many Australians consider themselves to be 'flexitarian'. What does this term mean?
6. These vegie patties are pan-fried. What other methods of cookery may be suitable? Why?
7. Define 'caramelise'.

CHAPTER 2



Food equity

FOCUS AREA:

Food equity is the equal distribution of food around the world and to the population in each country. Access to safe and sufficient food is a global issue of concern. The production and distribution of food is affected by many factors, including geography, politics, transport and technology. This chapter investigates these issues and includes a look inside the world of those who find themselves at risk of food inequity.



CHAPTER CONTENT

In this chapter you will:

investigate
- food security
- how the food industry has become globalised

explore what leads to food inequity

explain
- who in the community is at risk of food inequity
- the effects of malnutrition

discuss
- what may influence the availability of food to you and others
- how aid agencies provide assistance to people in need

identify
- diseases that are caused by malnutrition
- aid agencies that provide support for people in need

design, plan and prepare food suitable for various groups

demonstrate
- knowledge of the correct equipment and techniques to use in food preparation
- how to prepare food safely and hygienically.

Pre-test quiz

RECIPES
- Orange and chickpea couscous
- Beef and vegetable bolognese
- Corn tortillas
- Pad see ew
- Homemade iceblocks
- Survival biscuits (also known as hardtack)
- Vegie fritters
- Muesli bars

FOOD FACTS

The world produces enough food to feed all 7 billion people who live in it, but those who go hungry do not have either land to grow food or money to purchase it.

805 million people in the world do not have enough food to lead a healthy, active life.

The proportion of the world population living in extreme poverty is falling; however, improvement in the overall wealth of a country will not benefit the poorest if the gap between rich and poor simply becomes wider.

More than 700 000 Australians receive food relief from food bank agencies every month.

The main cause of food insecurity in Australia is the high cost of living. Many of those who say they have been unable to purchase enough food state this is due to an unexpected expense or a large bill that needs to be paid.

One-third of all food produced is lost or wasted. This accounts for approximately 1.3 billion tonnes of food worldwide each year.

FOOD WORDS

developing nation country with low levels of production of goods and services and limited technology

export to send goods or produce out of the country

finite to have bounds or limits; many natural resources are available in fixed amounts and once used cannot be replenished

food inequity the unequal distribution and access to high-quality food

food security to have reliable access to a sufficient quantity of food that is affordable and nutritious

globalisation the way countries and goods interact and move across the world

malnutrition lack of proper nutrition, caused by not having enough to eat or not eating enough of the right things

refugee person who flees for safety to another country

staple food basic food that a population eats on a regular basis and in large quantities

Globalisation of food and food security

The globalisation of food production and supply is changing food systems around the world, resulting in greater availability and diversity of food; however, access to this food is not always equitable.

Food security occurs when people have reliable access to sufficient, affordable, nutritious food to support a healthy life. It may be dependent on a variety of factors.

Access to safe food and water as a basic human right

The United Nations has declared access to safe and sufficient water as crucial for individuals to satisfy every other basic human right. Access to safe food and freedom from hunger are deemed to be the responsibility of individual governments. The United Nations Convention on the Rights of the Child states that access to affordable, healthy food is a basic human right.

Equitable accessibility

Equitable accessibility means that every individual in a country, regardless of race, religion, age, disability, culture or language background, has full access to food and water.

FOOD IN FOCUS

FOOD SECURITY

PURPOSE

Investigate one city's clever strategy to limit the impact of globalisation on food security.

Singapore gets serious about food security

Singapore's main shopping strip Orchard Road is home to trendy shopping malls, high end retailers and abundant food courts, and one farm. This 600-square-metre farm is on the roof of one of the malls and uses hydroponics and vertical racks to grow herbs and vegetables that it sells to local restaurants and shops.

Another rooftop farm located on the edge of the city has a greenhouse. This type of high-tech urban farming is seen as the way of the future for this city, where there simply is not the land available to be cultivated. In fact, less than 1 per cent of Singapore's land area is devoted to agriculture.

A lack of substantial agriculture industry makes Singapore highly dependent on global forces impacting the supply of food. The vast majority (more than 90 per cent) of food is imported, making it very vulnerable to climate change, natural resource risks, and subsequent supply shortages or price increases.

Urban agriculture is seen as a key strategy to improve food security for countries across the world. It could enable densely populated urban areas to produce food locally and affordably. Other densely populated countries, such as Brazil, India, China and Indonesia, could benefit from similar urban agriculture strategies.

Source: Adapted from Chandran, R 2019, 'With farms atop malls, Singapore gets serious about food security', *The Sydney Morning Herald*, 9 January

ACTIVITIES

1. Conduct a quick survey of your class. How many households have some type of vegetable or herb garden, fruit trees, or similar? What can you conclude about the popularity of producing homegrown food among students in your class? Can you give reasons for the results?
2. Explain why Singapore is vulnerable to global food shortages and price fluctuations.
3. What problems might need to be overcome in establishing an urban rooftop garden in the middle of a bustling city?
4. Design a rooftop garden. To scale, draw up a 600-square-metre area and design garden beds for different herbs and vegetables. What would you like to grow?

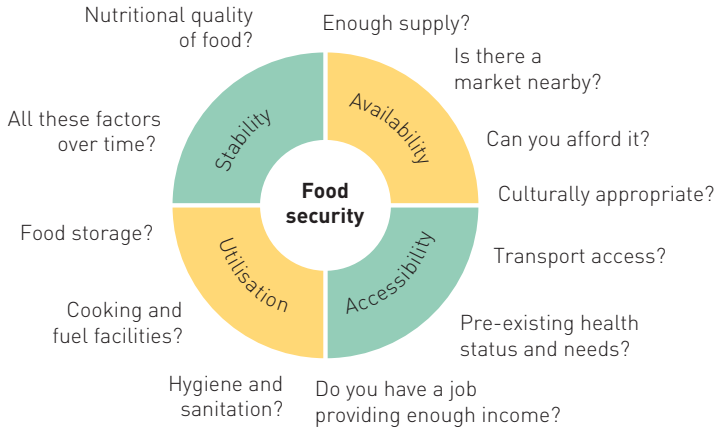


Figure 2.1 Food security and availability relies on so much more than just food being available and affordable.

Circumstances contributing to food inequity

Access to clean water

Clean water is a finite resource. There is a fixed amount available that cannot be increased but is under threat from overuse and pollution.

Human health is dependent on clean water being available in sufficient quantity in safe, sanitary conditions. Poor hygiene and unsafe water quickly spread diseases. Children suffer the most from these diseases. Some diseases are waterborne, caused by drinking water that has been contaminated by faeces. This often occurs where conditions are unsanitary, or after a natural disaster, such as a flood where sewerage treatment works are damaged. Water-related diseases are caused by insects that feed or breed in water; for example, malaria is carried by mosquitoes. Water-based diseases are caused by parasites that spend part of their life cycle living in water. An example is the guinea worm, which infects people drinking infested water.

Reliable water supplies are crucial for increasing food production. Irrigated land is twice as productive as crop land relying on rainfall alone. One-sixth of the world's crop land is irrigated but produces about one-third of the world's food. One serious global issue is the irresponsible use of fresh water and groundwater for irrigation in a manner that cannot be sustained. In countries that have 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.



Fairfax Syndication/Peter Rae

Figure 2.2 In early 2019 the town of Walgett endured more than 24 hours of a critical water shortage. During a heatwave, a power failure prevented the flow of water from the underground bore to the town's reservoir, resulting in critically low water pressure. Many businesses were forced to close.



Getty Images/Maskot

Figure 2.3 All members of the community must have equal access to appropriate nutrition to have food security.

HANDS-ON

SIMULATED FARMING

PURPOSE

The aim of this activity is to experience the challenges of crop farming in a variety of climatic conditions and observe the effect on seed germination.

Note: You may need to wait 4–6 weeks to see results.

MATERIALS

Nine small plastic pots

Seed raising mix or potting mix for each pot

Three types of seeds, such as corn, beans and wheat

ACTIVITY

1. Fill each pot with potting mix.
2. Plant three pots with one type of seed, repeating so you have three groups of three pots with each seed type. Label them!
3. Select one pot of each seed type and place on a sunny windowsill.
4. Place a second group of pots (one for each seed type) in the refrigerator.
5. Place the final group of seeds in their pots under a desk lamp.
6. Water each pot well.
7. Record your hypothesis.

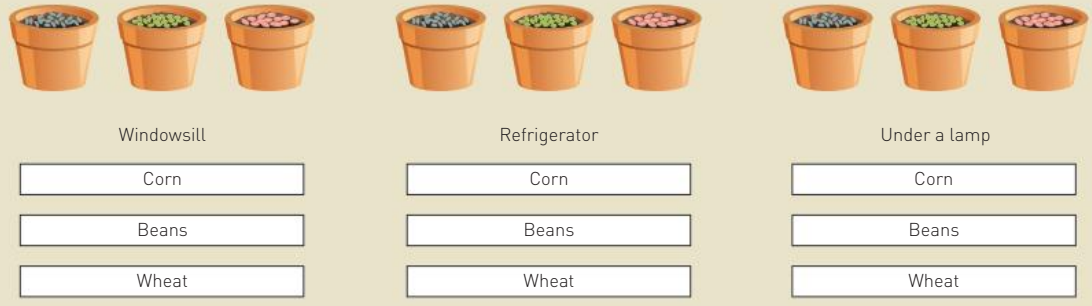


Figure 2.4 Set out and label your pots with the seed name and location.

QUESTIONS

1. How long did it take to produce a result in any of the pots? How did your results match up with your hypothesis?
2. From this experiment, what can you conclude about climate, seed type and availability of water?

Financial means to meet 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 gross national income (GNI) of a country's citizens is calculated by dividing GDP by the size of the population.

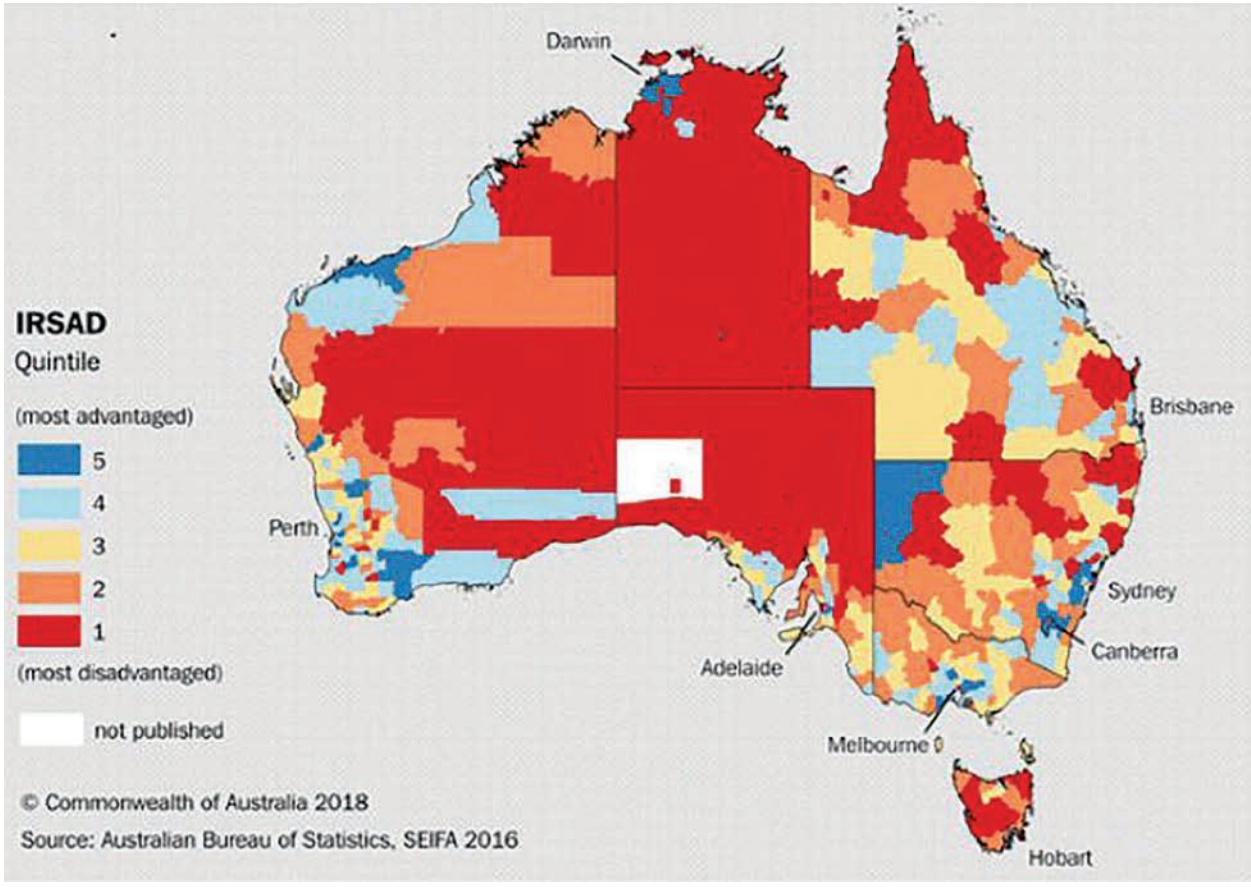
Currently, Australia has a GNI per person of US$53 190. By comparison, Afghanistan records a GNI per person of US$550, China's is US$9 470 and the GNI per person in the USA is US$62 850.

Obviously, the wealth of a country is not divided evenly among the population. Every country has a gap between the richest and poorest citizens.

Families' and individuals' access to financial resources determines their ability to obtain the food they need. The ability to earn an income is dependent on:

- health
- skills
- education
- resources such as land to farm, and money to buy seeds, tools and farm equipment or other physical resources needed to produce an income
- transport to get to the place of work or to go to markets to sell produce.

In the poorest countries, many of these factors rely on the availability of safe water.



Source: Australian Bureau of Statistics CC BY 4.0 licence

Figure 2.5 This map of the Index of Relative Socio-economic Advantage and Disadvantage (IRSAD) is from the 2018 Australian census. It is based on levels of income, employment, housing and education. Look at the key and then locate the capital cities. What trends can you identify?

Knowledge of nutrition principles to enable appropriate food selection

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 have to work from an early age to help support their family, so their education is limited. The result is a high rate of illiteracy among this group.

Nutrition education in Australia comes from many sources, such as the Australian Dietary Guidelines (see Chapter 4). Many people in Australia now gain some nutrition knowledge from social media. Instagram-worthy shots of freshly stocked and arranged produce in refrigerators and orderly meal-prepped containers are an example of a positive influence. However, there are equally popular social media sites promoting conflicting information about nutritious meal choices, which can make it difficult to obtain accurate information.

Your education in Food Technology 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.



Fairfax Syndication/Tim Young

Figure 2.6 Jamie's Ministry of Food, established by Jamie Oliver, operates mobile kitchens and outreach programs in Australia with the aim of educating people of all ages about simple, healthy meals that can be prepared at home.

HANDS-ON

MAKING A PACKET CAKE BY GUESSWORK!

PURPOSE

Explore how illiteracy can contribute to food inequity.

MATERIALS

You will be supplied with a packet cake base mix without instructions. You must also choose any quantity of any of the following ingredients to make your cake.

- Eggs
- Butter
- Water
- Oil
- Milk

ACTIVITY

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 combination.
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.
   Hint: The cake will be cooked when a skewer inserted into the centre comes out clean.

QUESTIONS

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. Explain in a paragraph how being unable to read would limit the opportunities for an individual to achieve food equity.



Alamy Stock Photo/Martien van Gaalen

Figure 2.7 How much reliance do we place on images to give us clues when the language used is not our own?

Distribution issues

Access to a reliable supply of nutritious food is possible for all Australians. Indigenous Australians successfully lived off the land for thousands of years prior to the arrival of European settlers. Nomadic family groups moved from place to place in a regular cycle over defined territory following seasonal food sources.

Distribution of food across many kilometres can be hampered by a lack of infrastructure (poor roads and/or no rail line), climatic conditions (e.g. the wet season making road access impossible) and political pressure (e.g. bans, restrictions or financial penalties affecting the movement of goods across borders). In some cases, transport of food to isolated places can increase the price of goods, which means they are too expensive to purchase, or the time taken to transport them means their quality deteriorates.



Newspix/Jack Tran

Figure 2.8 Empty shelves at Woolworths Yeppoon in Far North Queensland as residents stock up on supplies prior to cyclone season

UNIT REVIEW

LOOKING BACK

1 List three consequences of having insufficient clean water.
2 Define the terms 'waterborne disease', 'water-related disease' and 'water-based disease'.
3 Provide links between gaining an education, particularly literacy and numeracy, and improving the food security of a population.
4 Suggest situations where the following factors may limit an individual's access to sufficient food.
- Age
- Disability
- Language

FOR YOU TO DO

5 List the activities you do routinely that require water. Approximately how much water does each activity take? Multiply that by the number of people in your house. Write a paragraph reflecting on how your life would change without easy access to clean water.
6 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?
7 Brainstorm ways of using this water more efficiently – other than having shorter showers!
8 Research the water restriction levels as described by your local council. What activities are allowable under the most severe level?
9 Think about your local suburb or nearest town. List all the community assets that would be available to educate the residents about nutrition and healthy eating.

TAKING IT FURTHER

10 Access a comparison website that allows you to compare aspects of the standard of living in Australia with those in another country. Select two countries and compare them to Australia. Write a paragraph on each, noting your most surprising findings.

My Life Elsewhere

11 Does your school canteen have a policy regarding the types of foods sold in it? Ask your canteen director what food lines are the top-sellers. How much do they cost? Provide reasons to justify why these are the top-selling items. Can you make an argument to change the canteen menu? Discuss.

Groups at risk of food inequity locally and globally

Food inequity – the unequal distribution and access to high-quality food – is not the experience of poor countries alone. There are also people living in countries such as Australia who do not have equal access to food and nutrition.

Rural and remote communities

In 2018 the NSW Parliament conducted an inquiry into the price of fresh food in the state. It found that rural and remote towns, such as Maclean in northern NSW, with only one outlet for groceries and fresh food, had substantially less choice and significantly higher prices than the nearest large town centre of Grafton. Lack of competition from a nearby town with another supermarket means that shop owners can set a high price, knowing their customers have nowhere else to go. Cheaper prices were found in areas with more competition, close to or within a major city, and in larger supermarkets as bigger retailers could buy in bulk.

Some foods were substantially more expensive in isolated 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 consumers made their purchases, as some towns only had deliveries of fresh fruit and vegetables once a week.



Alamy Stock Photo/Richard Milnes

Figure 2.9 The presence of an Aldi supermarket has increased competitive pricing among the other supermarkets in the area.



Getty Images/iStock Unreleased/4x6

Figure 2.10 Farmers' markets enable local producers to interact directly with their customers, and customers to put a human face to food producers.

HANDS-ON

MAKING A MEAL FROM A FARMERS' MARKET

PURPOSE

Design, plan and prepare a meal for a family in a rural town.

ACTIVITIES

1. Locate your nearest farmers' or growers' market. They are often held on weekends and consist of stalls that are hosted by growers of the produce they are selling.

Australian Farmers' Markets Association

2. Select two key ingredients from a farmers' market or grown in your local area. Take photographs of these ingredients.
3. Design a main meal for a family of four, incorporating these two ingredients. Provide the recipe.
4. Reduce the ingredient quantities to prepare and produce a serving for two people.
5. Photograph the finished product.
6. Use your photographs of the ingredients and plated dish to produce a promotional poster to encourage consumers to support local growers.

The aged

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, such as residents of nursing homes. Many such institutions, as well as those that cater for young children, such as day-care centres, now have meal and diet policies that cater more suitably 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.

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 will become unable to perform simple tasks, such as using the kettle or toaster, or to create even the simplest meals, such as an omelette or a toasted sandwich. Many dementia sufferers rely on Meals on Wheels or residential respite care for their meals.



Shutterstock.com/Monkey Business Images

Figure 2.11 The elderly can have improved nutrition when they do not have to prepare meals for themselves.

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 would be the lack of income, and irregular or incomplete meals. Many crisis accommodation venues, such as hostels, do not have cooking facilities for residents, and sometimes 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. In many instances, this occurs because a war has forced people from their homes and across country borders. By the end of 2018 the number of forcibly displaced people had reached a record high of 70.8 million worldwide. This number includes refugees, asylum-seekers and internally displaced people. Newly displaced that year were 13.6 million people worldwide, including 1.6 million Ethiopians, 98 per cent of whom were displaced within their own country. The global refugee population was 25.9 million, with the majority of these people coming from Syria, Afghanistan, South Sudan, Myanmar and Somalia.

Displaced people are at risk of poor food equity because of their difficult circumstances. They may be in another country with no money, very few possessions and possibly living in a crowded camp.



Getty Images/AFP/MUNIR UZ ZAMAN

Figure 2.12 Rohinga refugees fled their villages in Myanmar for neighbouring Bangladesh to escape persecution. Myanmar will not recognise them as citizens and views them as illegal immigrants from Bangladesh. Bangladesh is struggling to cope with hundreds of thousands of refugees.

FOOD IN FOCUS

ADDRESSING FOOD INEQUITY



Outback Stores

Figure 2.13 Wirrimanu Outback Store is working to actively reduce its sales of sugary drinks and increase sales of fresh produce.

PURPOSE

To explain how people in rural and remote communities are at risk of food inequity, and describe how this can be addressed.

Outback Stores

Outback Stores, a Commonwealth government company, aims to close the gap and improve the health and supply of food to remote Aboriginal communities. The company provides financial assistance to keep local stores open in very small communities, promoting positive social outcomes for the community and returning any profit to benefit the locals.

Outback Stores implements a healthy food strategy, aiming to improve the health of the

>

local community by ensuring a reliable supply of healthy food choices, and specific items are priced accordingly. For example, sugary drinks are more expensive than water and are placed at the back of the store. Healthy food choices are promoted and highly visible. Specifically, the Outback Stores Healthy Food Strategy lists a reduction in the sales of sugary drinks by 2 per cent and an increase in fruit and vegetable purchasing by 2.5 per cent as specific targets for success.

Targeted strategies in stores include:

- fresh fruit and vegetables freight free
- lower mark-up for healthy foods
- $1 for 600 mL water
- diet drinks more expensive than water
- diet drinks at least 25 per cent cheaper than full sugar varieties
- no discounting of sugary drinks
- fresh fruit and veg at the front of the store
- water fridges at the front of the store
- sugary drinks located towards the back of the store
- at least 50 per cent display of diet drinks and water
- large long-life fruit drink not displayed in fridges
- regular promotion of healthier lines such as fresh fruit and vegetables, water and diet drinks
- no promotion of confectionery, sugary drinks or chips
- core range of quality fresh fruit and vegetables
- full range of diet drinks and water
- diet sports drinks instead of sugary sports drinks
- largest size of sugary drinks 1.25 litres
- smaller serve sizes of sugary drinks.

In conjunction with Outback Stores, the Good Tucker smartphone app has been developed to assist shoppers. The barcode of goods can be scanned to provide a rating of either thumb up, thumb down or thumb sideways to guide healthy choices as shoppers add to their basket.

Outback Stores supports Indigenous employment and is registered to offer nationally recognised qualifications in Retail Services.

Source: Adapted from outbackstores.com.au

ACTIVITIES

1 Reread the list of specific store strategies. Identify the differences between product placement and pricing at an Outback Store and your local supermarket.
2 Outline two advantages of employing local people in an Outback Store. How does this benefit more than the individual?
3 Outline the role of an Outback Store employee. Can you suggest how a local employee becomes more than a retail assistant? What training might be required for such a position?
4 How do people learn to manage money? What information is available to you on budgeting and spending wisely?
5 Download the free Good Tucker app and review the contents of your next shopping trolley.





UNIT REVIEW

LOOKING BACK

1 Create a mind map that illustrates why people living in rural and remote communities, the aged and the homeless are most at risk of food inequity.
2 Explain how a combination of factors, such as being aged and living in an isolated area, may compound an individual's disadvantage.
3 List three reasons why Aboriginal and Torres Strait Islander peoples may experience food inequity.

FOR YOU TO DO

4 Identify the reasons why groceries and fresh foods may be more expensive in rural or isolated areas.
5 Design an instruction leaflet to be inserted into a packet muffin box to assist those who have difficulty reading or cannot read English.
6 In groups, design a fact sheet for each group that may experience food inequity. Use your own research to develop further the information provided here.

TAKING IT FURTHER

7 Visit or contact by email a local nursing home or a 'soup kitchen' for the local homeless and ask them to show you their meal and nutrition policy or current menu. Everyone in the class should contact a different establishment. Discuss your results in a one-page report. What conclusions can you draw about the access that people in these institutions have to appropriate food?

Influences on food availability

Geography and climate

Geographical conditions and climate dictate what crops 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 varies widely from those available in poorer countries.

Globally, staple foods are basic foods that a population eats regularly and in large quantities. They tend to be cheap and easily obtained, making them the basis of the diet. Many countries grow staple foods that are best suited to their climatic conditions.

In Australia, approximately 85 000 farm businesses produce 93 per cent of the country's domestic food supply. As an industry, agriculture continues to grow in employment opportunities and in dollar value contribution to the nation's economy.

Natural disasters such as flood or drought are impossible to plan for, but developed nations such as Australia generally have resources available to cope in such a contingency. Drought can also be a contributing factor to higher prices for fresh foods as they become increasingly scarce or need to be imported. Developing countries try to plan for the unexpected by maintaining grain stores and saving money to purchase foods or crops destroyed by disaster.

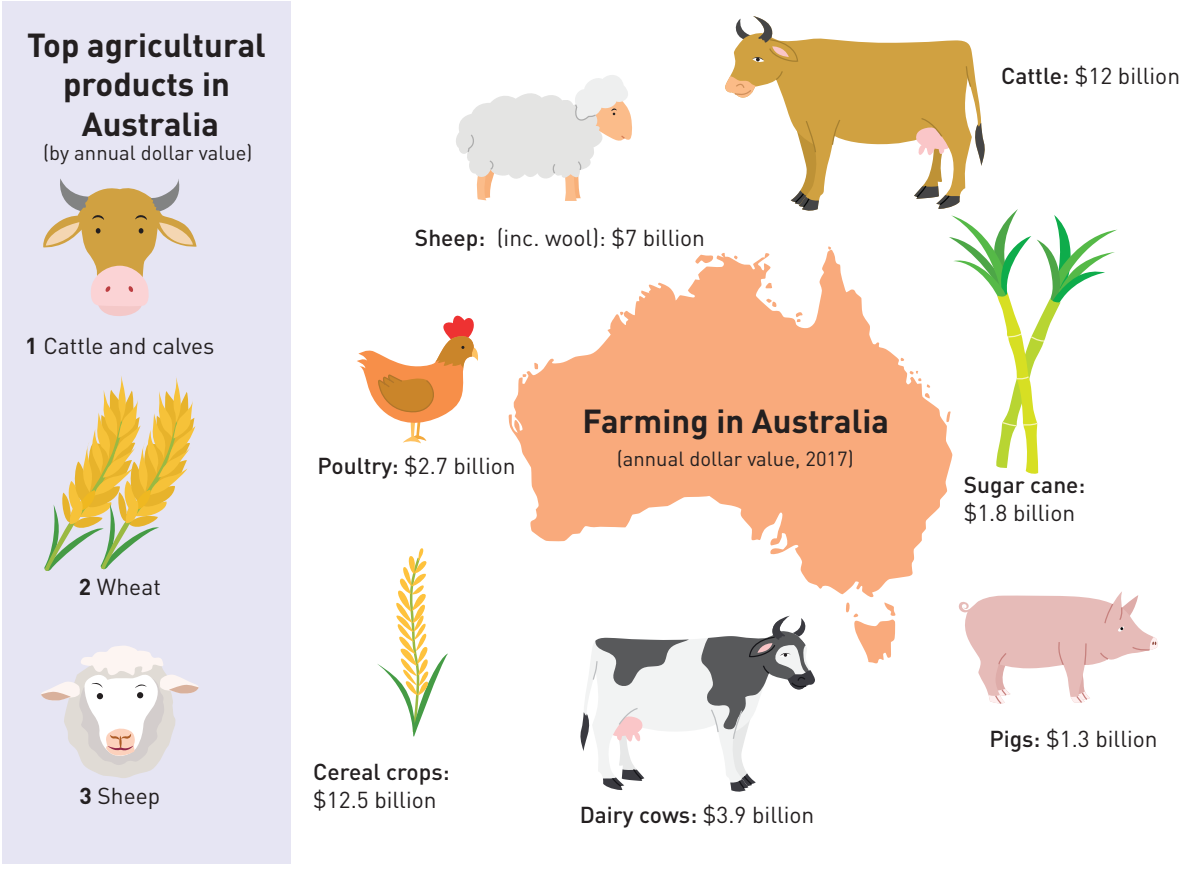


Figure 2.14 Australia has a long history of prosperity 'riding on the sheep's back'. Our agriculture industry continues to be a valuable contributor to our national economy.



Getty Images/jandrielombard



Alamy Stock Photo/Bill Bachman

Figure 2.15 In times of drought, farming can be financially very stressful. The costs of failed crops and hand feeding animals can be enormous. What is the impact of drought on businesses in country towns?

HANDS-ON

'RICH MAN, POOR MAN' FEAST

PURPOSE

This activity illustrates the difference between the 'haves' and the 'have nots' and what it feels like to be a member of one of these groups.

MATERIALS

Coloured paper in two colours

Cooked rice to feed three-quarters of the class

A favourite food, such as chocolate or pizza, enough for one-quarter of the class

ACTIVITY

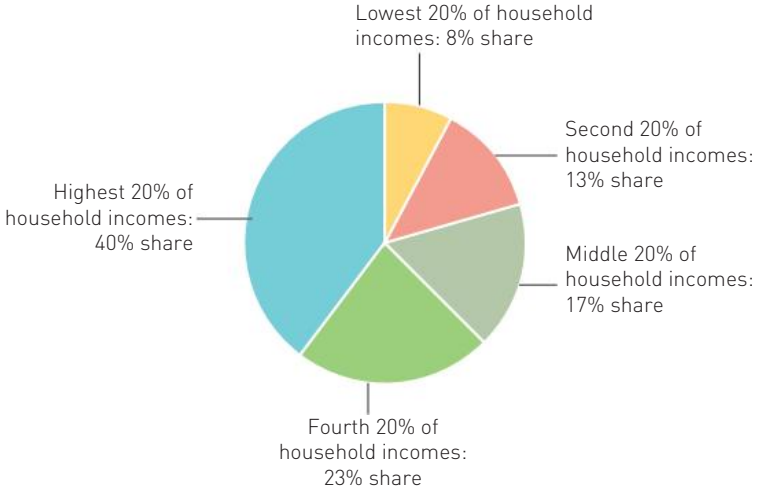
1 At the beginning of the lesson, collect a coloured piece of paper from your teacher (75 per cent of the pieces of paper will be one colour, 25 per cent will be another colour).

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 and drink.

QUESTIONS

During and after the meal, discuss what you thought and felt about the experience of being in your colour group. How fair was it?



Davidson, P., Saunders, P., Bradbury, B., Wong, M. (2018), Inequality in Australia, 2018. ACOSS/UNSW Poverty and Inequality Partnership Report No. 1, Sydney: ACOSS

Figure 2.16 Income share in Australia: someone in the highest 20 per cent of the income scale lives in a household that earns five times as much as a person in the lowest 20 per cent. Circumstances that can lead to being in the lowest 20 per cent include being unemployed, being a single-income household, being over 65 years of age or being non-English-speaking.

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 occurs. Another reason why animal foods may not be staples in some countries is because of widely held religious beliefs. For example, eating beef is forbidden for Hindus, while eating pork or blood is considered unacceptable to Muslims and Orthodox Jews. For further information, refer to Chapter 7.



Getty Images/Hindustan Times

Figure 2.17 In Hinduism, cows are considered sacred and are deeply respected. Beef is not eaten by Hindus.

Countries affected by conflict

Conflict both locally and globally may also affect food availability. One example of this is when people become refugees, having to leave their homes to escape military conflict and flee to safety – they are no longer certain of their own food security.

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 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 war 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.



Getty Images/LightRocket/SOPA Images

Figure 2.18 Since 2013, South Sudan has been engaged in an ongoing civil war, resulting in the displacement of more than 4 million people. The United Nations has described South Sudan as one of the most dangerous places for aid workers, with more than 80 humanitarian workers killed since the conflict began.

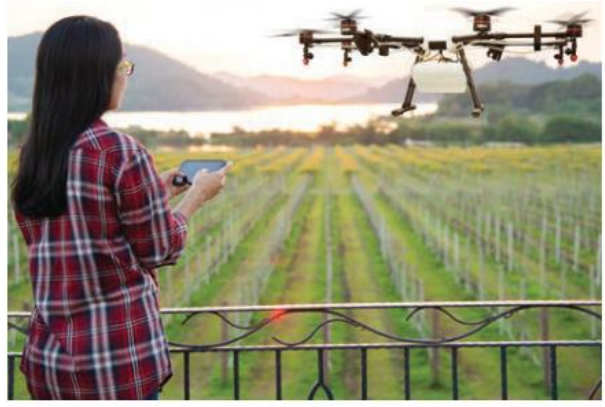
Technological developments

Physical barriers to food distribution can have an impact on food sources. Good roads can allow farmers in rural areas to more easily transport their produce to local and bigger regional markets. Additionally, better quality infrastructure can significantly reduce costs associated with longer travel times, wear and tear on vehicles, and fuel consumption.

Australian agriculture relies on an effective and efficient transport system to move agricultural produce at low cost. At the heart of this system is our network of roads, railways and ports. This world-class transport and distribution infrastructure helps Australian farmers supply both domestic and international markets with fresh, high-quality produce all year round. Improvements in transportation, including the ability to track the path of goods from paddock to plate, are influencing our food availability.

But technology can also be used at the farming stage to increase food security. Mobile phone applications are being widely utilised to share agricultural information. For example, in Mongolia, herders are able to stay up to date about disease outbreaks to maintain the health of their herd; and in Egypt, Sudan and Ethiopia, real-time weather data is sent to vegetable farmers via SMS.

Similarly, Australian farmers are becoming 'smart farmers' by using digital and cloud-based technologies to help monitor and assess the production and processing of food and fibre. This use of technology will help to ensure food security for future Australians.



Shutterstock.com/Suwin

Figure 2.19 Drones are just one of the powerful new technologies available to 'smart farmers'.

UNIT REVIEW

LOOKING BACK

1 Define the term 'staple food'.
2 Explain the impact of climatic conditions on a successful agriculture industry.
3 Provide two reasons why livestock are not generally owned by people in developing nations.
4 How does the availability of good infrastructure such as roads and rail affect food security?

FOR YOU TO DO

5 On a map of NSW, locate the Hunter Valley, Batlow, Orange, Young and Leeton. Find out what the main agricultural products are for these areas. Research the climate conditions that makes these products successful.
6 In groups, use a calendar and highlight the times of the year when foods are not permitted to be eaten by certain religious groups.
7 Choose a partner and have a silent debate. On a piece of paper, take turns arguing that it is always better to buy local produce. Each partner must choose to be either affirmative or negative, write one point on the paper and pass it to their partner to be refuted or a new point added.
8 Design an innovative bumper sticker to encourage consumers to buy local produce.

TAKING IT FURTHER

9 Use the newspaper *The Land*, or go online to the website of ABC television program *Landline*, to determine the current issues affecting Australian grain and seed farmers. How are the issues reported affecting the availability of food from this crop? Write a report on your findings.

Landline
The Land

10 Investigate the food laws of Islam and Judaism. What do their laws say about eating meat? Why?
11 Go to the website for the NSW Department of Primary Industries. Research challenges facing farmers and graziers in NSW due to climate change.

NSW Department of Primary Industries

12 Using a map of NSW, calculate the distance between Wilcannia and the Sydney Markets in Flemington. If a truck is travelling at 100 kilometres per hour, how long would it take to drive this distance?
13 Define organic farming. From your research, explain the reasons organically grown foods tend to be more expensive.

Dietary diseases associated with malnutrition

Malnutrition results from a combination of factors, including poor diet or a lack of food, frequent infections or disease, poor care and feeding practices, inadequate health services, and poor water and sanitation. Malnutrition occurs when the intake of nutrients or energy is too high, too low or poorly balanced. Malnutrition affects people in every country.

There are two categories of malnutrition. Undernutrition results in insufficient protein, energy and micronutrients and can lead to delayed growth or wasting. Overnutrition occurs when a diet provides too much food but is not necessarily balanced. This leads to overweight, obesity and diet-related diseases, including heart disease, cancer and diabetes.

The World Health Organization states that the most serious threat to public health across the world is malnutrition. This disease causes approximately 45 per cent of childhood deaths globally. Long-term effects of childhood malnutrition include ongoing health problems and poor education outcomes leading to limited work prospects.

Malnutrition in children is hunger at its most devastating. It can affect 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, such as a deficiency in vitamins and minerals or protein, occur when individuals do not receive correct amounts of these. It is the world's most common nutritional problem.

Beri-beri

Beri-beri is caused by a deficiency of thiamine, otherwise known as vitamin B1. The symptoms of beri-beri are fatigue, loss of appetite, weight loss, intestinal problems and impairment of nerve function, which can be very painful.

Rickets

Rickets is caused by a severe vitamin D deficiency. Vitamin D can be absorbed through the skin by exposure to sunlight. It is not often seen in children in Australia; however, it can occur with a lack of exposure to sunshine, particularly in those that might be housebound or institutionalised for long periods. Bowed legs are a characteristic of rickets. There is a link between vitamin D deficiency and osteoporosis (a loss of bone density). The vitamin D deficiency reduces the body's ability to absorb calcium, increasing the possibility of developing osteoporosis.



Alamy Stock Photo/Robin Laurance

Figure 2.20 Classic presentation of a child with bowed legs caused by rickets. Diets that are extremely limited in food variety can cause malnutrition even in countries with a good food supply.

Xerophthalmia

Xerophthalmia is abnormal dryness of the eyes caused by vitamin A deficiency. Vitamin A helps to keep the cornea healthy. A lack of vitamin A that develops into xerophthalmia may further develop into blindness if left untreated. It is common in children in less developed countries.



Getty Images/AFP/Stringer

Figure 2.21 Aid agencies in developing countries give children vitamin A supplements to prevent xerophthalmia, a type of hardening or drying of the eye that causes blindness.

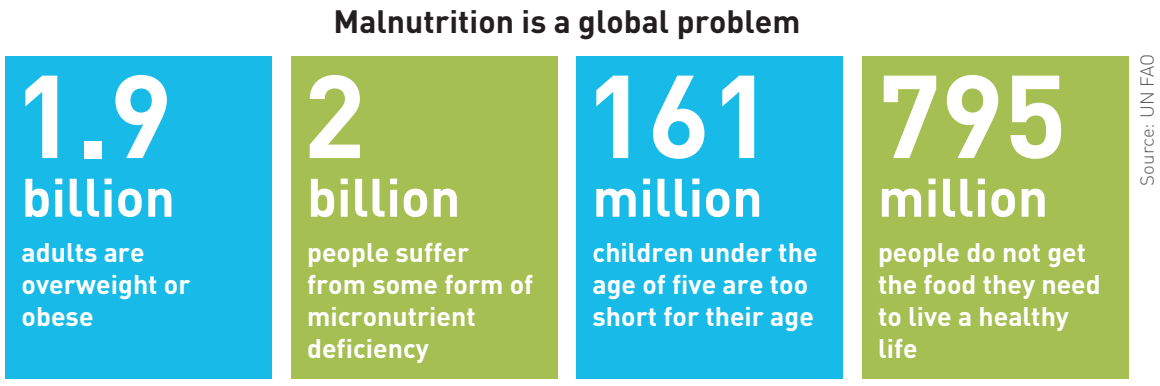


Figure 2.22 Malnourished people are more susceptible to disease and infection due to impaired immune function.

Consequences of malnutrition

Physical

A malnourished body has difficulty performing normal bodily functions such as growing and resisting disease. Physical work is difficult, due to hunger and lack of energy. Children who are chronically malnourished may not grow as tall as they should be (this is called stunted growth), will be underweight, and more likely to fall ill from other infections causing diarrhoea and pneumonia. Chronic hunger also impacts an individual's mental health.

Social

Malnutrition causes the most damage in the first 1000 days of life. A mother suffering from malnutrition is more likely to deliver an underweight baby and may have difficulty in producing enough breast milk. The ongoing effects impact schooling and the ability to learn. Children who are malnourished also demonstrate poor motor skills. The results of a reduced ability to learn can produce less-educated adults, which in turn produces a long-term problem of hunger and malnutrition that can last for generations. Malnourished adults are less able to work, provide for their families, and contribute to the local community and economy.



Ashley Whitworth/Alamy Stock Photo

Figure 2.23 Some schools offer free breakfast or lunch programs to students. Often they are run in partnership between state education departments and charitable organisations such as Red Cross and Foodbank. School food programs are linked to improved health and learning of the students, including higher attendance rates. How do you account for this?

Economic

Malnutrition slows the growth of the economy of a country. In areas where hunger is common, adults are unable to work and earn an income, and therefore cannot contribute to the productivity of the country. Malnutrition costs a community in terms of the health system (providing medical care) and non-government support (charitable agencies that provide relief in addition to that provided by the government). It is estimated that malnutrition can cost between 2 and 15 per cent of a country's GDP. In poor countries, this cost burden is enormous.



UNIT REVIEW

LOOKING BACK

1 Outline the causes of rickets, beri-beri and xerophthalmia. Suggest reasons why these diseases are generally rare in Australia.
2 Describe the costs to the community of poor nutrition.

FOR YOU TO DO

3 Draw a cyclic diagram to explain how hunger in childhood can lead to disadvantage later in life.
4 Aboriginal and Torres Strait Islander peoples are four times more likely to develop diabetes than other Australians. What are the risk factors for contracting diabetes later in life?
5 Design a menu for a workplace canteen that promotes healthy lunches and snacks.

TAKING IT FURTHER

6 Research Rotary International and the work they do in health. Write a feature article for an online magazine.



Local and global aid agencies

Aid agencies support developing countries by providing long-term developmental assistance in areas such as education, agriculture, road building and securing water supplies. In Australia, this is called foreign aid. Some agencies also specialise in emergency and disaster relief, providing food, money, shelter and medical care in an emergency. This is called humanitarian aid.

The World Bank is made up of 189 member countries, which appoint a Board of Governors to make decisions on their behalf. The World Bank has the goals of ending extreme poverty and boosting shared prosperity. It provides financial and technical assistance to less developed countries for projects such as roads, transport networks, communication networks, agriculture and industrial development, and health or education programs.

The Australian government allocates a foreign aid budget every year, whereby money is directed to less developed countries. Government-sponsored aid generally benefits countries that are important to Australia. The Australian government also supports some non-government organisations (NGOs) to provide aid. The Australian NGO Cooperation Program (ANCP) provides funding to successful applicants each year.

Foreign aid agencies that are not government controlled, such as the 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 'band-aids'.

Locally, there are a number of avenues for support for Australians needing help in meeting their food needs. The Commonwealth government through the Department of Social Services provides funding for organisations to provide emergency food relief to individuals and families in crisis. Two of these organisations are SecondBite and Foodbank Australia.



Getty Images/Brett Hemmings

Figure 2.24 NGOs such as SecondBite and Foodbank Australia coordinate food assistance for the needy. They redistribute food donated by retailers to community food programs across the country.

RONNI KAHN: OZHARVEST



Getty Images/Brook Mitchell

Ronni Kahn founded OzHarvest in 2004, driven by a passion to make a difference and stop good food going to waste. She started with one van in Sydney. After working to change the law to make it safe for companies to donate surplus food, she has grown OzHarvest to be Australia's leading food rescue organisation, opened the first rescued food supermarket, and is now taking the unique food rescue model global.

Ronni is a powerhouse in the fight against global food waste. OzHarvest partners annually with the United Nations Environment Programme to raise awareness of the issue and is working with Government and key stakeholders to halve food waste nationally by 2030. The ripple effect of her commitment is fuelling action across the globe.

Source: Adapted from https://www.ozharvest.org/our-family/staff/

ACTIVITIES

1 **Discuss** the reason Ronni Kahn established Oz Harvest.
2 **Explain** how this organisation is reducing food waste in Australia.
3 **Outline** how the ripple effect from this company's efforts is making a global impact.
4 Find out more about this organisation. Create a 'fun fact' sheet highlighting its role in our society.



Fairfax Syndication/Steven Siewert

Figure 2.25 OzHarvest vans pick up surplus food from commercial outlets and deliver it to charities across Australia.



PRACTITIONER FOCUS

The role of aid agencies in providing individual and community assistance

Emergency relief

There are many voluntary agencies in Australia that provide both monetary and practical aid to individuals and families in crisis. These include both church-based and non-religious organisations such as the Smith Family, Salvation Army, St Vincent de Paul (Vinnies), the Red Cross and the Samaritans. Assistance may be in the form of a food hamper, a soup kitchen for the homeless, or vouchers to spend at the local supermarket.



Getty Images/Ian Hitchcock/Stringer

Figure 2.26 Salvation Army Emergency Services provides help and encouragement to victims of disasters such as bushfires and floods.

Psychological and social support

The *Foodbank Hunger Report 2018* combines data from a survey of food relief charities and a survey of the recipients of those charities. The report shows that food insecurity has wide-reaching effects. The daily decisions and choices to be made when under financial pressure put a strain on an individual's mental health. Skipping meals to save money to pay bills has an impact on the quality of a person's life. Lack of food creates lethargy, declining mental health and a loss of confidence. Being placed in a situation where food is unaffordable is extremely stressful. When families run out of food, they can experience social isolation if they stop inviting friends or family over to their home. This leads to feelings of embarrassment, shame and depression.

In some cases, poor food choices are made based on the limited transport options. Shoppers who need to catch public transport are limited to buying what they can carry. Buying in bulk and buying plentiful fresh produce is often cheaper, but it is not practical when catching a bus or train. Many charitable organisations either provide low-cost goods that they have already acquired at a reduced cost or are able to organise subsidised home delivery. The *Foodbank Hunger Report 2018* found that recipients of food relief overwhelmingly responded (83 per cent) that receiving food relief made a positive difference to their lives.

Financial assistance

In Australia, Centrelink, on behalf of the Australian Government Department of Human Services, provides a range of benefits for individuals and families who are struggling financially. Support is available based on marital status, employment status, whether the person is a carer, in crisis, or in special circumstances, such as a farmer in a drought-declared area. 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. Financial counselling and education can also be provided to assist a long-term change.

Education

In Australia, NGOs offer programs targeted at specific community education needs around nutrition. For example, refugees who have newly settled in Australia may need assistance in accessing information about nutrition in their own language; people on a low income may need help budgeting; and others may build confidence in meal preparation after simple guided shopping and cooking classes.

Barriers to good nutrition and health for many groups include distance to healthy food outlets, transport limitations, the high cost of food and an inability to cook healthy meals.

REVEREND BILL CREWS:
EXODUS FOUNDATION

AAP Image/Paul Miller



Reverend Bill Crews is a former electrical engineer turned Uniting Church minister. In the late 1960s he 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.

In 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 provides breakfast, lunch and dinner to the needy every day. It is open from 7 a.m. daily and provides access to other services such as counselling, Orange Sky Laundry, medical specialists, dentists, leisure activities such as movies, and men's and women's groups.

The annual Exodus Christmas Day lunch in Ashfield is the centrepiece of the Exodus food program calendar and ensures those with very little will not miss out on the joy of a Christmas Day lunch.

More than 2500 guests took part in Exodus's 2018 Christmas Day lunch and more than 300 volunteers were involved. Guests made their way through more than 50 turkeys, 65 hams and 2700 mini Christmas puddings.

2018 was also the first year volunteers could offer to host their own 'Bill Crews Christmas lunch' in their own neighbourhood.

In 2009 the Exodus Foundation began operating a night food van to provide hot meals to the 150–200 homeless who live in Sydney's CBD. This van operates 364 days a year.

Source: Adapted from https://www.exodusfoundation.org.au/



ACTIVITIES

1. Why might 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 service has expanded to serve three meals and now provides other professional and social supports?
4. Predict the effect this service has on the lives of the people it serves.
5. Find out how you could contribute to this charity or a similar one.

FOOD IN FOCUS

COMMUNITY KITCHENS

PURPOSE

Discuss how community kitchens can support local communities.

A community kitchen is a group of people who meet on a regular basis to plan, cook and share healthy, affordable meals. Community kitchens can be run anywhere there is a kitchen, e.g. church hall, men's shed, school or neighbourhood centre.

The MiLife Victoria Community Kitchen is hosted by the charity the Brotherhood of St Laurence and is for people with a disability living in Frankston, Victoria. The group meets initially at the local library to research and plan meals for the term. Each member is encouraged to select a dish they would like to make.

On the Monday of the following week, the chosen recipe is costed by estimating how much the ingredients will be, then they go to the supermarket to purchase the ingredients. Each participant contributes $6 to the cost of the meal. This way, participants are learning about budgeting and improving their literacy skills.

Once the shopping is done the group returns to the kitchen and distributes tasks so that everyone can participate. Usually a main meal and dessert are made. The emphasis for this group is social, but also on building knowledge of cooking skills and food safety, literacy and budgeting.

A different community kitchen, the Nourish Kitchen Club in Dungog, NSW, sees young mums get together every Monday at the Uniting Church Hall to cook and then eat the food with their children and plan the meal for the following week. The emphasis for this group is healthy eating and budgeting.

Source: Adapted from Communitykitchens.org.au and dscc.net.au

ACTIVITIES

1. Outline the specific need addressed by each community kitchen to their target group.
2. Joining a new group can be daunting. Suggest some strategies to grow a community kitchen group.
3. Imagine you want to establish a community kitchen in your area for newly arrived residents who do not have good English language skills. Justify the importance of such an organisation to this community group.
4. Dungog is a small regional town north of Newcastle. Plan a five-week series of meals suitable for the group of new mums and toddlers that might attend the Nourish Kitchen Club.



Peninsula Health

Figure 2.27 Community kitchens are a great way for groups of people to connect socially and make a meal together while increasing their food preparation and cooking skills and their nutrition knowledge.

HANDS-ON

I'M THE TEACHER!

PURPOSE

To design, plan and prepare a simple, healthy dish for a family living in a remote Aboriginal community.

ACTIVITY

1 Select one vegetable available in the frozen food section of your local supermarket.
2 Using this main ingredient, design a main meal or an accompaniment for a family dinner.
3 Prepare the dish, taking photographs of each key step, including presentation.
4 Create an animated lesson to teach your family how to cook this dish, using your photographs and the animation software of your choice.

QUESTIONS

1 Discuss the reasons for using frozen foods.
2 Evaluate the success of your lesson. How might you change it if you did it again?

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 Explain how funds can be used to:
- improve local health care
- help individuals in business in a developing country.

4 'Charitable agencies provide practical help to those in need.' Do you agree with this statement? Justify your answer using examples you have researched.
5 Research the charity Meals on Wheels. Why is their slogan 'More than just a meal'? How does this service prevent the negative social consequences of malnutrition?

FOR YOU TO DO

6 List the advantages to a recipient country that receives a World Bank loan.
7 Devise a fundraising venture to support the aid agency of your choice.
8 Design a poster that promotes breastfeeding for display in a local area health centre.

TAKING IT FURTHER

9 Who is the Federal Minister for Foreign Affairs and Trade? Research the budget allocation for foreign aid during the past Australian financial year. What percentage of GDP does it amount to?
10 Ask a local charitable organisation or an overseas aid agency representative to talk to the class about their work.
11 Visit a local charitable organisation. Interview the person in charge and write a report that discusses:
- the services the charity provides to your community
- how the charity is funded
- how volunteers are recruited.

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Chapter review

LOOKING BACK

1 List four factors that influence the food security of farmers.
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 living in a rural or remote area place an individual at risk of food inequity?
6 What is the definition of malnutrition? In your answer, provide examples of illnesses that are typical of malnutrition.
7 Why are certain staple foods grown in particular areas of the world?
8 How does religious belief influence food availability?

FOR YOU TO DO

9 Construct a mind map to illustrate the reasons for food inequity.
10 Write a list of pros and cons for taking on a part-time job after school at age 14. Then write a list of pros and cons for a young person taking on full-time work in an underdeveloped nation at the same age. What differences are there in your lists?
11 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.
12 What facilities are available in your local area for aged care? Investigate their nutrition policy.
13 Design a presentation for the class on a disease of malnutrition. Outline the causes, symptoms, treatment and any long-term effects.

TAKING IT FURTHER

14 Locate an isolated outback town on a map of NSW. Research the services and facilities available for the town's population. Identify and list any food inequity factors that you think may be present in this town.
15 Research the work of a speech therapist in assisting the elderly who have swallowing difficulties. What causes these problems and how can they be treated?
16 Investigate the government support for communities to replace services destroyed by natural disasters, such as fire or flood.
17 Research a volunteer group operating in your state. What opportunities exist to help the less fortunate in your local area?

Recipe	Techniques	Equipment	Dietary considerations
Orange and chickpea couscous 	Segmenting	Paring knife Chopping board Chef knife Kettle Jug	V DF
Beef and vegetable bolognese 	Mincing (garlic) Cooking pasta	Saucepan Chef knife Grater Can opener Chopping board Colander Serving bowl	VO
Corn tortillas 	Batters Shallow frying	Sifter Wooden spoon Whisk Frypan	V
Pad see ew 	Slicing Stir-fry	Saucepan Chef knife Chopping board Wok Wooden spoon Colander Serving bowl	VO GF VgO DF
Homemade iceblocks 	Dicing Freezing	Chef knife Masher Iceblock moulds Jug Chopping board	V GF VgO
Survival biscuits 	Mixing Baking	Biscuit tray Wooden spoon Mixing bowl Rolling pin Scone cutter	
Vegie fritters 	Shallow frying	Grater Frypan Mixing bowl Spatula	V
Muesli bars 	Grease and line Melt and mix	Cake tin Chef knife Saucepan	V

KEY

V = vegetarian VO = vegetarian option GF = gluten free VgO = vegan option DF = dairy free Note: All recipes are nut free.

Note: In the couscous recipe we use spring onions. To clarify, the recipe uses the thin, white onion with the long, green leaves. You may know these as shallots.

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RECIPE



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Orange and chickpea couscous

Couscous is made up of tiny pasta balls of semolina flour. It is a staple of North African cooking. Traditionally, women dampened the flour and rolled it, so 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 boiling water
- 1 cup canned chickpeas, drained and rinsed
- ¼ cup currants
- 2 oranges, peeled and segmented
- ½ cup spring onions, chopped, plus some spring onion curls to garnish

TIP: Ask your teacher to demonstrate the method of peeling and segmenting an orange for best presentation.

METHOD

1. Prepare the oranges and spring onions.
2. Place the couscous in a large heatproof bowl. Dissolve the stock cube in the jug of boiling water and pour over couscous. Cover and leave for 10 minutes, then fluff up grains with a fork.
3. Gently stir the remaining ingredients into the couscous.
4. 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. List some meal ideas that use this recipe as a side dish.
3. Suggest other herbs, spices and vegetables that could be added to this dish.
4. Explain the technique for segmenting citrus fruit.

RECIPE

Beef and vegetable bolognese

Beef mince is one of the cheapest varieties of meat available. This budget-friendly recipe is easily adapted for other mincemeat varieties and vegetables and can be used in a variety of ways.

Preparation time 10 minutes **Cooking time** 20 minutes **Serves** 2

INGREDIENTS

120 g spaghetti
1 teaspoon oil
250 g beef mince
½ large brown onion
1 teaspoon minced garlic
½ large carrot
½ large zucchini
100 g broccoli
400 g can diced tomatoes
2 teaspoons dried Italian herbs or 2 tablespoons mixed fresh herbs (e.g. basil, parsley, oregano)
1 tablespoon grated parmesan cheese
Salt and pepper
1 extra tablespoon fresh herbs for garnishing (optional)

METHOD

1. Fill a medium saucepan ¾ full of water, cover with the lid and place on stove to boil. When boiling, salt the water and then add the pasta and cook for 10–12 minutes. The pasta should be al dente (firm to the bite).
2. Dice the onion, grate the carrot and zucchini, chop the broccoli into small florets, and slice the herbs if using.
3. In another medium saucepan, heat the oil on moderate heat on the stovetop. Add the onion and garlic, and cook until softened.
4. Add the mince and cook until browned.
5. Add the carrot, zucchini, broccoli and tin of tomatoes (including the juice). Salt and pepper to taste. Stir, reduce the heat to medium-low and put the lid on. Cook for 10 minutes, stirring occasionally.
6. Drain the pasta in a colander.
7. To serve: EITHER add pasta to sauce and combine until well coated before portioning OR place a serving size of pasta in a bowl and top with a serve of sauce.
8. Season with salt and pepper, sprinkle with parmesan and fresh herbs, as desired.


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QUESTIONS

1. This recipe may be altered for vegetarians by substituting a 400 g tin of lentils for the mince. Research the cost of mince and lentils per 100 g. What is the price difference?
2. Make two alternative suggestions for an accompaniment instead of pasta.
3. Imagine you are planning to make this dish and the fresh vegetables are of poor quality or very expensive in the supermarket. Suggest some frozen or tinned vegetable varieties that could be satisfactorily substituted.

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RECIPE



Corn tortillas

Corn tortillas are an unleavened bread product and a Mexican staple food.

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 the flour, bicarbonate of soda, salt and baking powder into a medium bowl. Stir in the polenta.
2. Stir in the beaten egg and milk. The batter should be runny.
3. Pour 2 tablespoons of batter into a greased, heated frypan. 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. Describe what happens when vinegar is added to the milk. What is this called?
3. Suggest three savoury fillings for these tortillas.
4. List five other unleavened breads from around the world. Outline the types of dishes they are used in.

RECIPE

Pad see ew

Eating out is great for a celebration, but it can be unaffordable for a family on a budget. Pork and chicken fillet can be expensive – mince is cheaper and is easily substituted in this recipe. This is a great Thai takeaway dish that is easy to make at home!

Preparation time 10 minutes **Cooking time** 15 minutes **Serves** 2

INGREDIENTS

2 tablespoons oil
2 teaspoons minced garlic
150 g pork or chicken fillet
2 tablespoons light soy sauce
1½ tablespoons dark soy sauce
1 tablespoon caster sugar
300 g Chinese broccoli (gai lan)
2 eggs
300 g flat rice noodles
White pepper (if desired)
Fish sauce (if desired)

TIP: Add extra vegetables for more colour, flavour and texture. Try some capsicum, mushrooms or carrots.

METHOD

1. Fill a medium saucepan ¾ with water and put on high heat to boil. When boiling, add the rice noodles and cook for 6–8 minutes.
2. Wash and roughly chop the Chinese broccoli – keep the stems and leaves separated.
3. Slice the chicken or pork into thin slices.
4. Heat the oil in the wok over a medium-high heat. Stir-fry the garlic for 1 minute.
5. Add the sliced meat. Stir-fry for 3 minutes.
6. Add the sauces, sugar and broccoli stems. Stir for 1 minute.
7. Create a hole in the middle of the mix and crack in the eggs – stir to break them up as they cook.
8. Drain the noodles in a colander and add them to the wok.
9. Gently stir the noodles into the mix and add the broccoli leaves for 1 minute or until the leaves are wilted and bright green.
10. Serve hot with a little white pepper and fish sauce if desired.

QUESTIONS

1. Ask your teacher for the purchase dockets for this recipe (or price it using an online supermarket site) and provide a costing. Find an online Thai takeaway restaurant and compare the cost.
2. Suggest a vegetarian substitute for the meat.
3. Explain why stir-frying is a fast, healthier way to fry foods.



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RECIPE



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Homemade iceblocks

Based on cost per 100 g, ice-creams on a stick can be one of the most expensive treats to buy a family. Making them yourself is easy, and far less expensive, but you need to be patient (to let them freeze). These are made in small disposable cups with paddle-pop sticks, but if you have iceblock moulds that are smaller, you may make more iceblocks.

Preparation time 10 minutes (+ freezing time – overnight) **Cooking time** nil **Serves** 4

INGREDIENTS

200 g fruit of your choice (e.g. grapes, blueberries, mango, raspberries, strawberries, banana or a combination of these)

200 g low-fat yoghurt (flavoured or vanilla) OR

2 cups apple and blackcurrant juice

METHOD

1. Slice, dice or mash the fruit of your choice.
2. Mix fruit with yoghurt and fill cups OR place fruit in the cups and fill with juice.
3. Place cups in a baking dish and cover tightly with plastic wrap.
4. Insert paddle-pop sticks in each cup by piercing the plastic wrap. The plastic wrap will keep the stick upright as the iceblocks freeze.
5. Place in freezer until set. To serve, remove from freezer, stand for a minute or two and unmould.

QUESTIONS

1. These iceblocks would make a great children's party treat. Discuss the ingredients you would use to create your own 'signature' iceblock.
2. Adapt this recipe to form a family-sized dessert. Create a recipe card using illustrated step-by-step instructions suitable for a primary school-aged student to follow.
3. Make a list of other types of fruits that would be good to use in this recipe.
4. Describe some other types of 'vessels' that may make good iceblock moulds.
5. Identify your favourite ice-cream treat and justify your choice.

RECIPE

Survival biscuits (also known as hardtack)

This recipe replicates biscuits given to soldiers as part of their rations when on active duty. They have also been adapted for use as food aid in famine-ravaged countries.

Preparation time 25 minutes **Cooking time** 40 minutes **Makes** approximately 14–16

INGREDIENTS

2 teaspoons salt
½ cup coconut oil
2 tablespoons bacon chips, crushed
½ cup powdered protein
2½ cups buttermilk
2 cups rolled oats
3½ cups wholemeal self-raising flour
½ cup ground flax seed (optional)

METHOD

1. Preheat oven to 160 °C. Line a biscuit tray with baking paper.
2. In a large bowl, mix the dry ingredients with a wooden spoon.
3. Slowly add the coconut oil and mix with clean hands until the mixture is crumbly.
4. Add the buttermilk and knead until a solid ball of dough is formed.
5. Using a rolling pin, roll the dough out on a clean, lightly floured bench top. Roll until approximately 1 cm thick.
6. Cut into squares or shapes approximately 5 cm in diameter. Prick each biscuit with a fork.
7. Bake in the oven for 20 minutes. Flip the biscuits over and bake for another 20 minutes.
8. Remove and cool on a rack until completely free of moisture, then store in an airtight bag or container.

QUESTIONS

1. How do they taste? Can you suggest any improvements to the recipe?
2. Research what else is included in a ration pack. How might the survival biscuit be combined with other items included?



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RECIPE



Mark Fergus

Vegie fritters

Does your school have a kitchen garden? This recipe could be made almost entirely of school-grown produce!

Preparation time 20 minutes **Cooking time** 20 minutes **Serves** 4 (makes approximately 12 fritters)

INGREDIENTS

- 2 medium zucchini
- 2 medium carrots
- 150 g feta cheese
- 1 tablespoon honey
- 3 eggs
- ½ cup wholemeal flour
- Salt and pepper
- 2 tablespoons oil



TIP: Try vegetables such as corn, peas, pumpkin, potato and mushrooms. Also try haloumi, ricotta or tasty cheese.

METHOD

1. Grate the zucchini and squeeze out the moisture.
2. Grate the carrots.
3. Crumble the feta.
4. In a large bowl, sift the flour. Add the zucchini, carrots, feta, honey and eggs. Stir well to combine. Add salt and pepper if desired.
5. Heat the oil in a frypan.
6. Add a spoonful of mixture to the pan; turn the fritter over when bubbles appear. Place the cooked fritter on a clean plate and repeat with the remaining mixture.
7. Serve the warm fritters with an accompaniment of your choice.

QUESTIONS

1. Using an online supermarket website, or the purchase dockets from your teacher, cost the recipe for the class.
2. Divide the total cost by the number of people in the class to get a cost for the serving per person.
3. Now subtract the cost of all the fresh vegetables and herbs. How much money would be saved by having a kitchen garden? Can you use this calculation as an argument to establish one in your school?

RECIPE

Muesli bars

Store-bought lunch-box fillers are cheaper than the alternative available at the school canteen, but are still expensive. Try this quick recipe for a cheap and yummy alternative.

Preparation time 5 minutes **Cooking time** 25 minutes **Serves** 10

INGREDIENTS

- 125 g butter
- 100 g golden syrup
- 100 g rolled oats
- 90 g sultanas
- 75 g craisins
- 90 g dried apricots
- 40 g currants
- 80 g self-raising flour
- 95 g brown sugar

METHOD

1. Preheat the oven to 180 °C.
2. Grease and line a 25 cm square cake tin.
3. Chop apricots until they are approximately the size of the sultanas.
4. Place butter and golden syrup into a medium saucepan and stir over low heat until butter has melted.
5. Take the saucepan off the heat, add all other ingredients into the saucepan and stir with a wooden spoon until well combined.
6. Press mixture into prepared cake tin.
7. Bake for 25 minutes or until golden brown.
8. Cool in tin and slice into bars when cold.

QUESTIONS

1. How could this recipe be modified for students with special dietary needs (e.g. gluten-free or dairy-free)?
2. Design your own healthy snack bar. Justify your choices.
3. Find another lunch-box filler recipe that appeals to you. Work in pairs and as a class and present a buffet of lunch-box ideas for tasting. What was the most popular?



Mark Fergus

CHAPTER 3



Food product development

FOCUS AREA:

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 CONTENT

In this chapter you will:

describe the types of food product developments

explain
- why food products are developed
- what makes up the 'marketing mix'

discuss
- new food products and how they affect society
- how and why the environment is an important consideration when thinking about food packaging
- how technology can be used to produce food in the home and commercially

outline
- the steps involved in the development of food products
- how market research informs the development of food products
- what must appear on food labels

design, produce and evaluate a food product

demonstrate
- your ability to select equipment and techniques to prepare food
- you can work safely and hygienically

evaluate marketing strategies and their effectiveness

investigate
- packaging for food products
- how food additives are used to process food
- new technologies in food production and processing.

Pre-test quiz

RECIPES
- Seasonal slushie
- Nut-free raw protein balls
- Kombucha mocktail
- Basket meal
- Maple bacon French toast
- Blueberry vegan slice
- Steamed pork dumplings
- Frozen dessert

FOOD WORDS

constraint restriction

consumer a person who uses a product or service

criteria standards to judge against

marketing the action or business of promoting and selling products or services

modified changed or altered

morbidity illness

mortality death

sensory relating to the senses or sensation

tamper meddle with for the purpose of altering

FOOD FACTS

In comparison with global statistics, Australians are more cautious and sceptical when purchasing new food products. Only around 37 per cent of us have purchased a new food product when we last shopped for groceries. That's 20 per cent fewer than the worldwide average. The Australian grocery market is a tough nut to crack!

Statistics show that consumers are attracted to products that feature the words 'organic', 'natural' or 'sustainable', but taste and price are still the biggest drivers influencing customers to keep buying the product.

Sometimes trying to 'improve' a well-known brand can backfire. Coca-Cola introduced Coca-Cola Life in Australia in 2015. The new beverage was sweetened with Stevia, marketed as healthier than regular Coke and with the same great flavour. Two years later, the product disappeared from Australian shelves following disappointing sales.

Coconut water as an ingredient in manufactured food has been the fastest growing recent trend in Australia.

Approximately 10 per cent of Australians have used a meal delivery service such as Deliveroo, UberEats or Menulog/Eatnow.

Musk sticks and Vegemite are on display at the Disgusting Food Museum in Malmö, Sweden. The museum contains lots of examples of unfamiliar foods from around the world, many considered to be delicacies in their own country.

The 'selfie' trend on social media extends to packaging. Expect to see a move in the coming years towards packages that are self-opening, self-closing, self-sealing, self-dosing, self-regulating and self-heating!

Sydney's Royal Easter Show is famous for its 'carnival' food fare, beginning with the dagwood dog (or pluto pup) – a battered frankfurter on a stick dipped in tomato sauce, which made its Show debut in the 1940s.

The range of food product developments

Creating new food and beverage products is a process of many steps. A knowledge of ingredients, food production techniques, packaging options, food laws and consumer preferences is required. Food product development is a series of stages that every food business goes through as it tries to bring new and innovative foods to the market.

If you have ever seen a brand-new flavour or food option from one of your favourite brands and decided to give it a try, you have been a part of the end stages in food product development.

Product developments can take many forms and can be grouped according to their type.

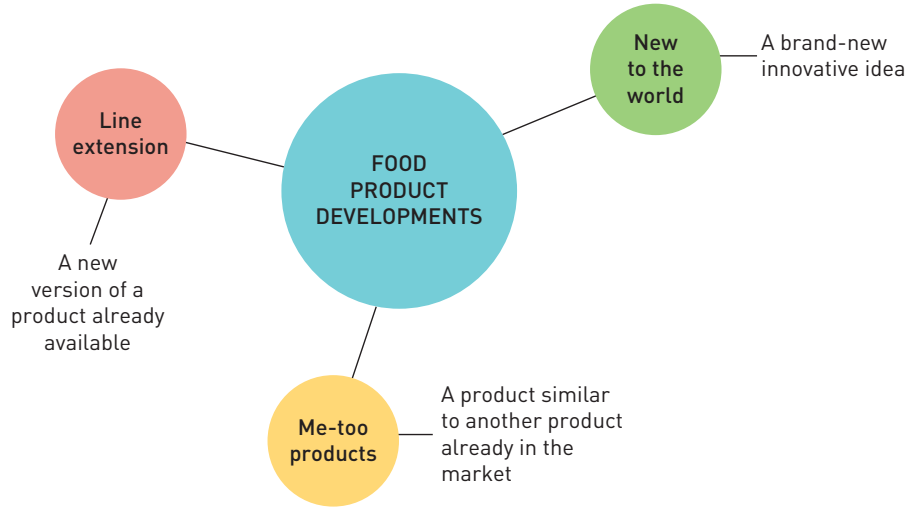


Figure 3.1 There are three main categories of food product development.

New to the world

New to the world or innovative products are the result of completely new ideas. These may be a new concept in packaging, such as the packaging for Turkish Delight Tim Tams that changes colour when refrigerated, or a product directed to a new target market, such as cholesterol-lowering Weet-Bix or foods for consumers with a gluten intolerance.

This is a volatile form of product in the market – it is very expensive to develop and launch a completely new product and to 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.



Mark Fergus

Figure 3.2 Colour-changing packaging is an innovative way to encourage consumers to chill these Tim Tams featuring new flavours for an enhanced taste experience.

Line extension

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 extensions might include the development of a new flavour, or a recipe revision that changes the recipe to alter its nutritive value, or 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.

Some examples include gluten-free versions of popular breakfast cereals, Masterfoods' Aussie Farmers cooking sauce range, Fanta Jellyfizz and Powerade with coconut water. In 2015, McDonald's reinvigorated its sales by introducing a new concept called 'Create Your Taste' whereby customers can 'build' their own burger meal at a digital kiosk and it is cooked to order.



Mark Fergus

Figure 3.3 Line extensions can backfire so it is important that the line extension does not replace the existing product. Arnott's responded to a massive consumer backlash in 2016 when it restored the recipe of its popular Shapes biscuit line back to the original.

Me-too

Me-too 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 the packaging style; 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!



Left to right: Shutterstock.com/urbanbuzz; Aldi

Figure 3.4 An original product and its 'me-too' competitor

Reasons for developing food products

Consumers tend to become bored with products and are easily distracted by new products. For a company that continues to market 'the same old thing', this distraction could mean a loss of profits because consumers leave to 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 required changes may be relatively minor, such as a labelling requirement that declares the product may contain traces of nuts. However, in some circumstances food companies may be required to alter the content of a product; for example, to remove certain additives from certain foods.

Health and environmental issues

It could be said that consumers today are better informed about their health and nutrition than ever 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.

Likewise, consumers are demonstrating an increasing concern for the environment. The removal of single-use shopping bags from large supermarkets is indicative of this change. Food manufacturers are grappling with ways to make food convenient without excessive packaging.

Company profitability

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. It is often just as big a risk to do nothing. Consumers can be easily distracted by new, exciting products and persuasive marketing, so companies need to be savvy about spending money that will increase their market share and build their customer base.

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 the popularity of espresso pod coffee makers for the home have created a market for manufacturers of specialty recipe bases and boutique-style coffee pods. The popular Thermomix kitchen appliance has dealt a blow to food product developers in some ways, as it has encouraged more individuals to 'cook from scratch'.

Increasing demands for convenience foods and packaging

Consumer satisfaction is very important to food companies because it encourages shoppers to stay loyal to their brands. Consumers are loyal to brands they are happy with, and some consumers will communicate their satisfaction or dissatisfaction using consumer product hotlines. Some line extension ideas have come directly from consumers' demands for convenience. For example, many types of foods are now packaged in different ways for better handling or convenient use, such as 3-litre milk cartons so consumers can avoid purchasing three 1-litre cartons, and 12 × 100 g tubs of yoghurt, so consumers do not have to buy a single 1.2 kg tub of yoghurt. Variety in availability helps to maintain the loyalty of both large families and single-person households. Likewise, producers are tapping into the busy family stereotype by building a range of partially prepared products such as pre-washed salad greens, chilled cookie dough and marinated meat ready for barbecuing. Packaging is tricky for manufacturers, because they need to balance convenience and ease of opening with consumer concerns around excessive packaging.

Food packaging must now not only protect a product but also extend its shelf life, reduce food wastage, and deliver the product in a safe, clean and saleable form. The increasing awareness of consumers in regards to their own environmental footprint has seen food manufacturers look for ways to make their products more environmentally friendly. No longer acceptable is unsustainable designs such as single-use plastic beverage cups, lids, straws and bottles. Innovative packaging that uses bowls made of mushrooms, cups fashioned from seaweed, and detergent-style pods for water are being developed.

NICK PALUMBO: GELATO MESSINA



Alamy Stock Photo/Lincoln Fowler

Nick Palumbo started Gelato Messina in 2002 with one store in Sydney's Darlinghurst with a vision to serve 20 basic flavours of quality gelato made in the authentic Sicilian way.

Fast forward to today, where Nick is now expanding across Australia and overseas. It is still essentially a family company, with Nick working with his brother Danny and Donato Toce, a chef enticed from the restaurant he was working at across the road from the original store. The focus is on quality and continually changing the flavours available.

Inventive flavour ideas come from everywhere and they are not afraid to add a Messina spin to a tried and true concept. Flavours include apple pie, pear and rhubarb, tiramisu, and chocolate fondant.

The growth of Gelato Messina can be related in part to embracing social media. Marketing specialist Declan Lee was recruited. As a former DJ he had a strong social media following. Gelato Messina does not actively use paid advertising, choosing to build on a word-of-mouth following using social media. Palumbo did not have social media accounts for a long time and had no idea of the presence they had, particularly on Instagram. They even used Facebook to great effect when announcing a price rise. Customers appreciated the transparency and were mostly positive. Their customer base was not diminished by the rise in cost.

In line with the transparency of product, Gelato Messina produce their own milk, strawberries, hazelnuts and other products, such as fudge and caramel, that go into their gelato. They keep up with technology with a smartphone app, cashless stores and the availability of the gelato tubs through home delivery service Deliveroo.

Expanding to serving desserts, cakes and shakes as well as an appearance on *MasterChef* and a collaboration with Arnott's Tim Tams, Gelato Messina is an Australian success story.

Source: Adapted from https://www.sitchu.com.au/sydney/people/meet-mastermind-behind-messina-nick-palumbo/ and https://www.smartcompany.com.au/entrepreneurs/influencers-profiles/ice-cream-mecca-how-nick-palumbo-created-gelato-messina/



ACTIVITIES

1 Investigate the Instagram page of Gelato Messina. How does this business use social media as a marketing tool?
2 Consider the decision not to use mainstream paid advertising on TV and in print media. How might this approach be risky for a start-up business?
3 How has social media contributed to the success of this product?
4 The average price for a ready-to-eat gelato at Gelato Messina is between $4.50 and $8. Cashless transactions below $10 incur a fee for the business from banks, making this decision more expensive for Gelato Messina. Consider the reasons they choose to remain cashless.
5 Explore the Gelato Messina website and provide some examples of strategies they have used to respond to customer demands.

Gelato Messina

PRACTITIONER FOCUS

Societal changes

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 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.

The 'average' household in Australia typically starts small, gets bigger with the arrival of new members, and shrinks again over time. Food companies respond to these demographics by creating family-sized packs that cater for four rather than six people. There is an abundance of convenience meals aimed at the busy family whose schedules rarely coincide for them to eat together.



Mark Fergus

Figure 3.5 Producing the same product in various sizes, and bundling single serves together for a multi-pack purchase, meets the needs of both single-person households and families.

UNIT REVIEW

LOOKING BACK

1 Identify and describe the three main types of food product innovations.
2 Of the three types, which is the most expensive and why?
3 How do food companies measure the success of a new product?
4 Identify two health or environmental issues food companies have responded to by releasing new products.

FOR YOU TO DO

5 Sometimes packaging, rather than a product, needs a revamp to boost sales. Design a new package for an existing successful product; for example, paper-wrapped butter, tea bags or bread.
6 Packaging that is easy to open is helpful for the frail or elderly. Design an 'easy-open' package for a common food item.

TAKING IT FURTHER

7 Examine the websites of some well-known food companies. Are their new products me-too products, line extensions or completely new products?
8 New food products are often introduced to Australia after being launched in the United States. Prepare a 30-second TV news-style oral report with a visual display to be shown in the background for one interesting or unusual product recently released in the United States.

Supermarket Guru

9 Consider this statement: '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? Justify your answer.
10 Consider this statement: 'Food companies tell us what we want to buy and what we need.' Respond to this statement giving arguments for both sides.

New food products and their effect on society

Food product innovations do not go unnoticed, nor are their effects limited to our tastebuds. Innovations impact on all areas of our lives.

Environment

Food innovations affect the environment. Waste packaging generated by new processed foods causes an obvious impact, but sustainability is also a major concern.

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.

Ethical consumerism, sometimes known as 'nose to tail', focuses on the purpose of farming and the need to untilise all of the animal that has been bred for meat, to ensure wastage is minimised. Likewise, consumers are being educated about the waste produced in fruit and vegetables due to supermarket size and shape specifications. Some supermarkets are selling 'odd' fruit and vegetables for reduced prices.

Nutrition

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 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 and bowel cancer, stroke, diabetes and 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.



Mark Fergus

Figure 3.6 The 2018 ABC TV program *War on Waste* highlighted the wastage of fruit and vegetables that do not meet the size and shape specifications of supermarkets. Consumers willing to purchase 'imperfect' fresh produce have the option to purchase these (pre-packed) at reduced prices.

Technology

Technology is reacting to new food products in many ways. Owners of pod-based coffee makers will know there is a right pod style and a wrong pod style for their machine. The pod machine chosen locks the consumer into purchasing the specific brand of coffee for the life of the machine. As the machines became more popular, the price was reduced, and more people purchased them.

Social media is the big influence in new food products. Companies are using platforms such as Instagram and Snapchat and are utilising social media 'influencers' to promote products on their pages. Instagram-worthy images of amazing meals with key ingredients or products 'tagged' in the caption can be highly influential as a marketing tool.

UNIT REVIEW

LOOKING BACK

1 Describe the impact on lifestyle of the availability of pod-style coffee makers and the Thermomix, and the removal of plastic bags from checkouts in supermarkets.
2 Explain the popularity of products such as gluten-free bread, sugar-free soft drinks and vegan products.

FOR YOU TO DO

3 Using a smartphone, take a single photograph of an imperfect fruit or vegetable e.g. a misshapen carrot or slightly marked banana. Imagine you are an Instagram star with lots of followers. How could you enhance this image with a caption to encourage consumers to buy imperfect produce that still tastes great? Present your Instagram-worthy image to the class.

TAKING IT FURTHER

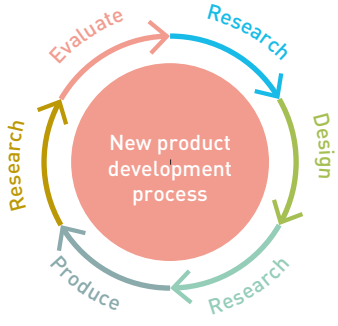
4 Visit the Australian Bureau of Statistics weblink to find the latest statistics on single-person households. Use this statistic to explain why convenient single-serve foods are an expanding market.
5 Visit the Love Food Hate Waste website. Describe strategies consumers can use to be more environmentally friendly when planning their grocery purchasing.

Australian Bureau of Statistics

Love Food Hate Waste

Steps in food product development

Most big companies today employ teams of people in their research and development department. Their job is to keep up to date with sales figures of product lines and to stay aware of competitors in order to pinpoint areas for product development (e.g. a revamp for a product with declining sales, or development of a new product to compete with another in an area related to the company's area of expertise).



- Conduct research
- Develop a design brief
- Create ideas
- Research
- Select the most appropriate ideas
- Produce a trial product
- Launch the product
- Research
- Evaluate

Figure 3.7 Designing a new product is a continuous process.

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 shown in Figure 3.7.

Design

A design 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 constraints 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 (e.g. snack food for children, low-fat products for health-conscious people, packaged prepared vegetables for working parents).

Researching to identify 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 of this research 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 further investigation – looking for available ingredients, investigating processing methods, watching competitors and consulting again with consumers to identify the strengths and weaknesses of existing related products.

Assessing options and selecting the most appropriate ones

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 10 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?

Produce

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 appearance, aroma, flavour and 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 fine-tuning 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 producing the product will determine whether it is within the financial budget, and will also act as a starting point for calculating the 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 the number of product units manufactured.

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.

HANDS-ON

BREAKFAST BOX CHALLENGE 1

PURPOSE

In line with current food trends, you are to design, produce and evaluate an individual, healthy breakfast packed and eaten from a lunchbox-sized container.

METHOD

1. As a class, determine the success criteria for this challenge.
2. Research different breakfast ideas. They may be hot or cold, with more than one component.
3. Brainstorm some ideas for changes. Consider how this product might be individually portioned and able to be eaten 'on the run'.
4. Write your design brief and recipe for this idea. Include other components as required (e.g. piece of fruit, portion of butter, etc.).
5. You will need to submit your recipe to your teacher for ordering.

WS Design brief

ACTIVITY

1. Following your recipe, make your individual breakfast box.
2. Present your breakfast box alongside others made by your classmates.
3. Write on the board the success criteria the class agreed on at the beginning of the challenge.
4. View and taste each sample.
5. Vote for the recipe idea that best meets the success criteria for the challenge. How did you go? Write a paragraph reflecting on your success – what could be improved?

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 and follows a similar design process.

Evaluate

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.



UNIT REVIEW

LOOKING BACK

1 Describe the characteristics of a design brief.
2 Discuss the role of research in the early stage of designing a new product.
3 Write an equation to calculate the cost of producing a product.
4 Research the term 'pilot plant'.
5 Why is package design so important?
6 Why is constant evaluation throughout the product development process crucial?

FOR YOU TO DO

7 Draft a design brief that could have been the driving force behind one of the new food products you have tried.
8 Select a new food product and devise a 10-question survey to gauge whether the product is well-liked among your classmates.
9 Do you think products are developed with healthy eating principles in mind? Support your answer with relevant examples.
10 Why are products tested for storage under so many varied conditions?
11 Devise an experiment to test for the deterioration of a product under exposure to sunlight.

TAKING IT FURTHER

12 Brainstorm a list of ideas for new food products you would like to see. Why do you think they haven't been developed yet?
13 **a** Devise a recipe for a green juice slushie or crushed ice drink.
b Imagine you are aiming to sell this drink as a takeaway from a corner shop. Using a plain paper cup (milkshake size), design a logo to appear on the cup to promote your drink.
14 Obtain a recent copy of the journal *Food Australia* or visit the website. Write a report on the innovations (food, packaging, distribution, etc.) publicised in this journal.



Food Australia (subscription required)

Market research

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 that 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 continually. This is called product longevity. A product with a long life in the market (i.e. 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 also collected from consumers using:

- telephone surveys
- researchers who survey shoppers in busy centres containing supermarkets
- consumer feedback lines advertised on product packaging
- formal surveys and tests such as sensory tests.

Sensory analysis is carried out to determine the answers to three main questions:

1 Does the target market like it?
2 Does it differ from what is currently available?
3 How does it differ from what is currently 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 or weak
- texture or mouthfeel; for example, smooth, lumpy, juicy, moist, gritty or sticky
- aroma; for example, strong, weak, spicy, yeasty, sweet or pungent
- appearance; for example, light, dark, golden, glossy, bright or dull
- noise; for example, crunchy, crackly, fizzy or 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 know how consumers feel about a product and may ask them to select words they would use to describe it, such as '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 sample is the well-known product.

If the results from the sensory evaluation are favourable, the product is launched onto the market.

Professional research companies carry out many formal research projects.



Shutterstock.com/v74

Figure 3.8 In a blind taste test, the products for testing are not identified and taste testers do not speak to each other. Can you guess why?



Campaign Manager, Freshmax Australia

Figure 3.9 Modi took customer taste testing a step further when the company encouraged customers to test a range of apples blindfolded and pick their favourite one based on criteria of crunchiness and juiciness. Eighty-five per cent of people who took the test chose Modi apples.

The use of consumer feedback obtained through social media can be valuable. Sites such as Facebook and Twitter enable 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. Customers used social media to great effect to complain about Arnott's new recipe for its popular Shapes savoury cracker.

HANDS-ON

TASTE TESTING NEW PRODUCTS

PURPOSE

To conduct your own market research. 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

Six to eight new food products currently being marketed (preferably ones you have not tried) in sufficient quantities for each student to taste.

METHOD

As a class, divide each product into equal portions for each student. Devise a table to record your results using the following headings:

- name of product
- price
- appearance (devise a scoring system to evaluate this and texture and flavour)
- texture
- flavour.

QUESTIONS

Create a bar chart 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 liked 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?

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 that needs a revamp, as voted by your class.

ACTIVITY

1 As a class, brainstorm ideas for a base food for the line extension. List on the board, then vote.
2 In pairs, come up with ideas for a line extension. Submit an ingredients list and numbered preparation method.
3 Prepare and make your line extension. Take photographs of the finished product to be used in a promotional presentation to your class.

QUESTIONS

1 What was the most difficult aspect of your product development?
2 Identify the target market for your product.
3 Make a 15-second YouTube-style promo video for your product.

UNIT REVIEW

LOOKING BACK

1 Define the term 'product longevity'.
2 List four ways that companies receive feedback on their products. Why is 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 Investigate popular Australia food bloggers who review new supermarket products. Evaluate their influence on customer behaviour. How much influence do they have?

Aussie Food Bloggers

Elements of the marketing mix

Products that are new to consumers must be promoted in order for the public to be aware of their existence.

The marketing mix is a combination of product planning, price, placement and distribution, and promotion. These factors are crucial to a successful product launch.

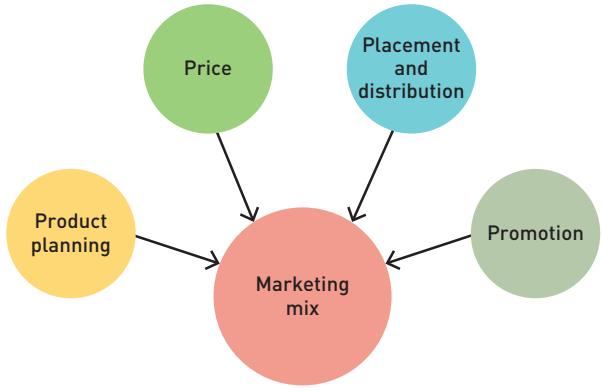


Figure 3.10 All the elements of the marketing mix must be considered and applied for the product to have a chance at success.

Product planning

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, and the image associated with the company and its brand name (sometimes referred to as 'reputation'). As the saying goes, 'if you fail to plan, you plan to fail'.

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.

Placement and distribution

This involves deciding on the avenues for distributing the product. Some food products, described as 'boutique', may sell only at small specialty shops or delicatessens, while others will be sold widely through supermarkets in all cities and country towns in Australia. Others may be developed solely for export. Distribution of the product must be efficient so that it arrives at the point of sale in good condition.

9780170442855

Urban Hum





KELLY LEES AND ANNA SCOBIE: URBAN HUM

The Newcastle-based beekeeping business Urban Hum is owned and run by Mayfield residents Kelly Lees and Anna Scobie. It started with an interest in gardening and pollination and a workshop in beekeeping in 2011.

Their bee ownership has grown from a few hives to today, where they own 110 backyard hives across 26 suburbs in the Newcastle and the Lake Macquarie area. People across these city, coastal and lakeside suburbs host hives for them. The hosts pay a small fee and when the honey is harvested, receive a portion.

The idea to outsource the hive-hosting came when Kelly and Anna heard about rooftop beehives in Paris and Melbourne.

The bees tend to thrive in the established suburbs with large residential blocks. Some suburbs are seasonal and each suburb produces honey that is uniquely flavoured.

Urban Hum sells their honey at local markets and each batch is labelled with the suburb of origin.

Source: Adapted from McMillan, M 2018, 'Newcastle bee-keeping firm Urban Hum working at capacity to tend as many as eight million bees', *The Herald Sun*, 23 July

Urban Hum

ACTIVITIES

1 Suggest how Urban Hum has addressed the marketing elements of placement and distribution, and promotion. Do you see this product expanding to be sold in large supermakets? Justify your answer.
2 Investigate the link between bees and pollination of flowering plants.
3 Newcastle consumers who are concerned about 'food miles' (the distance food travels from farm to plate) will be attracted to the Urban Hum product. Do you think this product would be successful in your local farmers' market? Why/why not?
4 Research the process of harvesting honey from beehives. What steps are involved?

PRACTITIONER FOCUS

Promotion

Promotion involves deciding 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 social media – Facebook, Instagram, Snapchat, Twitter and YouTube. McDonald's used this form of promotion to great effect for their Create Your Taste burgers, creating web clips only available on their YouTube page.

Coca-Cola branding not only includes the product but also the logo. The company is well known for changing its advertising campaigns regularly, but its logo and trademark ribbon have always remained the same.



Youfoodz

Youfoodz case study

Figure 3.11 Youfoodz used 81 Instagram 'influencers' (chosen for their focus on health and fitness) to promote its Youfoodz winter menu to its audience. The strategy reached over 1.4 million followers and resulted in increased sales for a smaller cost than a conventional print and TV media campaign.

Marketing techniques

Social media

An effective marketing strategy will help to define the overall direction and goals for the marketing of a new food product. A range of marketing techniques will ensure a product has a good start in a competitive marketplace.

Social media has grown to be one of the most effective channels for promoting new food products online. Social media can be used to engage new customers, listen to existing customers and monitor competitors, measure success and grow your brand. It allows businesses to be in direct contact with target customers, is inexpensive and gives brands instant reach to billions of active users. Social media allows companies to communicate on a personal basis with individual customers or specific groups. Most social media platforms have built-in data analytics tools, which enable companies to track the progress, success and engagement of their campaigns.

Of course, marketing through social media also has its risks. It may take a lot of time (and sometimes money) to create an effective campaign for little or no tangible return. The rapid spread of misinformation or poor reviews about a new food product may have a negative impact on a business. If a company does not abide by legislation regulating consumer protection, privacy, spam and copyright, then it may have legal problems.



iStock Editorial/Getty Images Plus/stnazkul

Figure 3.12 Different social media platforms can be used for different types of food product promotion.

Effective media advertising tools include jingles and slogans, and endorsements by appointed 'brand ambassadors' or social media 'influencers'.

Promotional strategies

Successful promotion involves finding out what influences consumers, and what encourages them to buy your product rather than competitors' products. 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. Therefore, an ad for drinking chocolate is more likely to run during winter and feature people rugged up against the cold in front of an open fire, sipping a steaming cup of hot chocolate. This capitalises on what the research indicates about consumer behaviour. Very successful promotion campaigns identify consumer trends and needs directly.

Competitions encourage consumers to buy particular products; for example, in order to use the barcode 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, and social media as well as moving displays on buses and taxis, and more subtle promotion through sponsorship; for example, the Melbourne Cup, the Big Bash T20 cricket, or product use in television shows such as *MasterChef*. *MasterChef* openly states that its sponsor is Coles Supermarkets. Incidental promotion of products as contestants used them successfully in their dishes was a more subtle form of promotion for individual brands.

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.

Other useful promotional activities occur at the point of sale, such as 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, or more obvious, such as using flags and signs that extend from the shelves, competitions or instore taste testing, and large end-of-aisle displays.

Pricing strategies

Setting the price is a key element of the marketing mix and can be the most versatile.

Penetration pricing

This strategy is used to set the price of a new product artificially low for a period of time to allow it to get a foothold in the market. Once a customer base has been established, the price will gradually creep up over a period of time.

Psychological pricing

Charging $1.98 instead of $2 for a food item is an example of psychological pricing. Retailers do it because in our heads saying 'one dollar ninety-eight' sounds a lot less than 'two dollars'. Even though it's only two cents cheaper (or not cheaper at all if paying with cash), the price is targeting a customer's desire for value for money.

Price skimming and premium pricing

These terms refer to items priced in the higher range. Price skimming occurs when the market leader charges more because it is the market leader. This can be risky because it invites competition. Premium pricing is slightly different. It taps into the customer's perception that a higher price means a better-quality or luxury item, even if this may not be the case.

HANDS-ON

BREAKFAST BOX CHALLENGE 2

PURPOSE

To successfully market your breakfast box idea.

ACTIVITY

1. Brainstorm a variety of ways to promote your breakfast box. Use a mind map to consider your target market, ways you can connect with them (e.g. radio, posters, Facebook) and other factors that may attract them to your idea.
2. Develop a plan for a social media campaign to market your breakfast box idea.
3. With the help of your teacher, calculate the price of your finished breakfast box per serve. Determine a selling price. Evaluate the pricing strategy you have used.

FOOD IN FOCUS

MARKETING TECHNIQUES

PURPOSE

To examine the subtle marketing techniques for a target market.

Five ways to connect with mindful consumers

Some consumers are not easily influenced by marketing gimmicks and exaggerated health claims. Many consumers are becoming more conscious of the impact they can have on the planet as a result of their consumption habits. The popularity of reusable travel coffee cups is a good example, but it is more than a trend.

Food marketers are increasingly connecting with mindful customers by considering:

1. Marketing messages – consumers will look for value for money, but the words 'massive', 'big', 'large' or 'stuffed' can be seen to be encouraging overconsumption and excess.
2. Education – mindful customers will be interested in the details of your product, such as the sourcing of ingredients that would bring peace of mind.
3. Leading the way – being proactive in the encouragement of healthy eating habits or reusing or repurposing the product packaging.
4. Portion sizes – a mindful customer is conscious of food waste. The portion size should be carefully promoted as enough for them to feel satisfied without having to throw food away.
5. Price – mindful customers will be prepared to pay more for a product that meets their values.

Source: Adapted from http://www.ausfoodnews.com.au

ACTIVITIES

1. Are mindful customers concerned only about the environment? Explain your answer.
2. Provide an example of a food product that would not be attractive to a 'mindful' customer. What aspects of the marketing campaign for that product should be changed?
3. Provide an example of a marketing campaign for a food product that has a mindful customer as its target market. What aspects of the marketing strategy are evident?



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 price affect the placement and distribution 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 examples of three social media campaigns for food products that you consider to be effective. Identify the elements that make each so sucessful.
7. Using these elements, identify the target market for the nut-free raw protein balls recipe on page 111 and create a simply styled image suitable for your company's Instagram page.

TAKING IT FURTHER

8. Investigate a food product that is a specialty of your local area. Gather information on it via the internet, 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 p.m. and 5 p.m., and then 30 minutes between 7 p.m. and 9 p.m. on any weekday. List the advertisements you see in each time slot. Is the range of products vastly different? Why?
12. Why are children's programs on commercial television stations that screen mid-morning on weekdays often free of commercials, while on weekends, commercials are quite specifically aimed at children?

Food packaging

The packaging of food is an essential part of food processing. It enables easier distribution, protects the food item, informs the consumer, and provides a vehicle to convey further information through the labelling requirement.

Contain

Packages allow food to be transported easily and safely, and some packages can be reused. Food manufacturers have the option of creating single servings of their product, such as yoghurt or cracker biscuits, as well as larger standard lines of the same product.

Preserve

Some types of packages delay the spoilage of food. Airtight seals on jars and cans allow the food to last for many months before the container is opened.

Replacing oxygen with other gases in some packages can extend the shelf life of foods such as chilled noodles. Removing all oxygen completely using vacuum-sealed bags also extends the shelf life of these products. Examples of vacuum-sealed packaging include bacon and cheese products.

Inform and persuade

Packaging is advertising in itself – the products sit on the supermarket shelves and must be attractive to the target market. Packaging conveys information through images, words and symbols. The images allow customers to imagine what the product looks like, either by using transparent wrap or an enticing photograph or image of a serving suggestion. The nutrition panel informs the consumer, while the barcode assists the supermarket with pricing and stock control.



Mark Fergus

Figure 3.13 Describe the elements of this packaging that satisfy the criteria of containing, preserving and informing.

HANDS-ON

BREAKFAST BOX CHALLENGE 3

PURPOSE

To successfully package your breakfast box idea.

ACTIVITY

1. List options for packaging your breakfast box. Table 3.1 on the next page will help you create your list.
2. Review your list and remove the options that will be unlikely to be successful (e.g. too expensive, impractical, unavailable). Ideally, reduce the possible packaging options to two.
3. For the remaining options, list their advantages and disadvantages.
4. Draw an image of your packaged breakfast box. Label your drawing with the features that make it the most suitable option.
5. List four foods that are packaged in other ways. For each, determine why that packaging was selected.

Table 3.1 Packaging characteristics and disadvantages, including environmental considerations

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 when 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 reused • 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 it 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 reused. It 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, such as those used for cakes, biscuits and cling wraps, which are thin plastic films that are made into a reel or sheet, or into netting • rigid, such as those used for ice-cream containers, margarine, yoghurt and sauce bottles, 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 a non-renewable resource (coal, oil and gas) and in many cases is not recyclable. Netting and other flexible plastic packaging components have devastating effects on sea life when dumped in the ocean.

Food-labelling requirements

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

However, not all food has to be labelled. Some of the most nutritious foods may be unlabelled. These include:

- unpackaged foods; for example, meat from a butcher, loose fruit and vegetables, or 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.

Information about the presence of allergens such as nuts, seafood and eggs in foods supplied under these circumstances must be supplied on request.

Ingredient list

According to the Food Standards Code, the ingredients must appear on the label in descending order by weight with the percentage of the key ingredient/s included. For example, on the label of a product described as raspberry jam the percentage content of raspberries must be included.

Food additives are also included in the ingredients list but are not normally eaten as a food by themselves. Food additives are discussed on pages 104–5.

Date marking

There is some confusion around date marking in food labelling. Date marks are a guide to how long a food can be kept before it begins to deteriorate or becomes unsafe to eat.

'Use by' indicates the certain date a food should be consumed by for health and safety reasons. It is not legal to sell food that is past its use-by date, and it should not be eaten.

'Best before' is an indicator of quality. The food will still be safe to eat beyond the best-before date, but it may not be of high quality. It is permissible to sell food beyond its best-before date if it is still fit to eat.

Bread is the only exception. It can be labelled with a 'baked on' date when its shelf life is less than seven days.

Some foods, such as canned products, have a shelf life of more than two years and are not required to have a best-before date. If a product requires specific storage to maintain its quality, these instructions must be stated on the package. A typical statement may be 'refrigerate after opening'.

Nutrition information panel

Nutrition information provides information in a table form about the energy content, as well as the protein, fat, saturated fat, carbohydrate, sugars and sodium in the food. If a food label claims the product is a good source of vitamin C, then the amount of vitamin C must be included in the nutrition information panel.

Nutrition information is not required on foods that are:

- herbs, spices, tea or coffee (they have no notable nutritional value)
- unpackaged foods, such as loose fruit or a sausage roll purchased from a bakery
- foods made and packaged at the point of sale, such as a hot dog purchased from a local show
- in small packages (less than 10 cm^2), such as chewing gum packages.

A new system of labelling the country of origin of a food product was introduced in mid-2016. This requires retailers to display, either through signage or package labelling, whether the product is grown, made (manufacturing only), produced (where the ingredients come from and the processing was carried out) or packed in Australia or another country.

Food Standards Australia New Zealand. Creative Commons Attribution 3.0 Australia (CC BY 3.0) licence.

FOOD LABELS
WHAT DO THEY MEAN?

1 Nutrition information panel

This panel shows the average amount of energy, protein, fat, saturated fat, carbohydrate, sugars and sodium in a serve and in 100 g (or 100 ml) of the food. The amount of any other nutrient or substance about which a nutrition content or health claim is made must also be shown (e.g. the amount of calcium must be shown if a claim about calcium is made).

2 Percentage labelling

Food labels must show the percentage of the key or characterising ingredients or components in the food. This allows similar foods to be compared. The characterising ingredient for this strawberry yoghurt is strawberry and the ingredient list states that it contains 7% strawberries.

3 Food identification

To help identify a food, food labels must show:

- the name of the food
- the name and business address in Australia or New Zealand of the supplier of the food
- the lot identification of the food.

The name or description of the food must reflect its true nature (e.g. strawberry yoghurt must contain strawberries). If the yoghurt contained strawberry flavouring rather than real fruit, then the name would need to indicate that it is strawberry-flavoured yoghurt.

4 Information for people with food allergies or intolerances

Some food ingredients and substances can cause severe allergic reactions and must be declared when present in a food. These ingredients are peanuts, tree nuts (e.g. cashews, almonds, and walnuts), crustacea, fish, milk, eggs, sesame, soybeans, wheat and lupin.

Sulphites (if added at 10 mg or more per kg of food) and cereals containing gluten (e.g. wheat, oats, barley, rye and spelt) also need to be declared.

5 Date marking

Foods that should be eaten before a certain date for health or safety reasons must be labelled with a use–by date.

Otherwise a best–before date is required if the food has a shelf life of less than two years. Although it may be safe to eat a food after its best–before date, it may have lost quality and some nutritional value.

6 Ingredient list

Ingredients must be listed in descending order (by ingoing weight). So if an ingredient is listed near the start of the list, then the food contains more of this ingredient than others lower down the list.

7 Labels must tell the truth

Under Australian and New Zealand consumer laws, labels must not be false, misleading or deceptive.

Suppliers must also label foods with accurate weights and measures information. The National Measurement Institute in Australia (www.measurement.gov.au) and the Ministry of Consumer Affairs in New Zealand (www.consumerprotection.govt.nz) ensure that correct weight and measurement information is used on food labels.

8 Food additives

Food additives must be identified in the ingredient list, usually by their class name (e.g. 'thickener' or 'colour') followed by the food additive name or number. A thickener has been used in this yoghurt and it is labelled as 'thickener (1442)'. A full list of food additive names and numbers is available from www.foodstandards.gov.au

9 Directions for use and storage

Where specific storage conditions are required for a food to keep until its best-before or use-by date, those conditions must be included on the label.

If the food must be used in accordance with certain directions for health or safety reasons, those directions must be included on the label.

10 Legibility requirements

Any labelling requirements must be in English, be legible and prominent so as to contrast distinctly with the background on the label.

11 Country of origin

Australia and New Zealand have different country of origin labelling requirements.

In Australia, the country of origin of packaged and some unpackaged foods must be stated on the label. Read more about country of origin labelling on the Australian Competition and Consumer Commission website at www.accc.gov.au

In New Zealand, country of origin labelling is required on wine only. Further information is available on the Ministry for Primary Industries website at www.mpi.govt.nz

12 Nutrition and health claims

Nutrition content claims are claims about the content of certain nutrients or substances in a food, (e.g. 'contains calcium'). Health claims refer to a relationship between a food and health. There are rules for when nutrition content or health claims are made on food labels.



Food Standards

Figure 3.14 Food Standards Australia and New Zealand provides comprehensive advice about food labelling for producers and consumers.

Information for allergy sufferers

Common food allergies are caused by peanuts, tree nuts, milk, eggs, sesame seeds, fish, shellfish, soy, lupin and wheat. The allergy reaction can range from mild to severe. The Food Standards Code requires these ingredients to be declared on labels in foods where they are present. Ingredients containing gluten need to be declared so that customers who are coeliac or gluten intolerant can identify products to avoid.

Some manufacturers use the words 'may contain' in relation to allergies, although there is no requirement to do so. Producers often use this wording on products that do not contain an allergen, but may be produced by the same equipment as a food item that does.



Food Standards Australia New Zealand. Creative Commons Attribution 3.0 Australia (CC BY 3.0) licence.

Figure 3.15 Allergen labelling has been introduced to reduce the incidence of serious medical issues caused by consumers unknowingly eating food containing known allergens.

HANDS-ON

BREAKFAST BOX CHALLENGE 4

PURPOSE

To successfully label your breakfast box.

ACTIVITY

1 Decide on a name for your breakfast box concept.
2 Review your drawing of your packaging idea, and start thinking about where the label would be placed. Draw a shape for the outer border of the label.
3 Using the labelling poster on page 101 as a guide, roughly sketch out the positioning of all essential information.
4 Source an appropriate image for your label.
5 Using an appropriate computer application, design your breakfast box label, ensuring it contains all the required information.

UNIT REVIEW

LOOKING BACK

1 Provide three examples of innovative package designs where the food should be eaten from the container.
2 Explain the difference between best-before and use-by dates.
3 Identify the elements that must appear on a food label.
4 What are the conventions for listing ingredients on a label? For example, what ingredient is listed first?
5 List six ingredients that could cause an allergic reaction in some people.

FOR YOU TO DO

6 Brainstorm five examples of products that are sold in reusable containers.
7 Tamper-evident devices are designed to inform the consumer that the product seal has been broken. Give six examples of packaging demonstrating tamper-evident devices.
8 Consider why packages such as breakfast cereals have the statement under the photograph 'serving suggestion'.

TAKING IT FURTHER

9 Research the more environmentally friendly option: plastic or glass?
10 Investigate the first aid response for a person suffering a serious allergic reaction.
11 Fast-food chains are required to display the kilojoule content of their products on their menus. Evaluate the advantages and disadvantages of this to the business and the consumer. Provide examples in your answer.

Technology in food preparation

Advancements in technology are having an impact on our home kitchens and in the industrial food processing world.

How many recipe books do you have at home? In your school library? If you needed to find a recipe in a hurry, where would you look? Chances are, your answer would be that you would search for it online on your smartphone. Smart appliances are also having an impact domestically, with state-of-the-art ovens that replicate the functions of a commercial appliance. Some ovens are multi-function appliances that can operate as a regular oven, fan forced, and steam or grill. Some appliances can be controlled by 'smart speakers', such as Google Home or Amazon Echo, allowing instructions to be delivered by voice. Appliances are designed to be reactive to conditions and adaptive as they monitor the food product being produced or cooked.

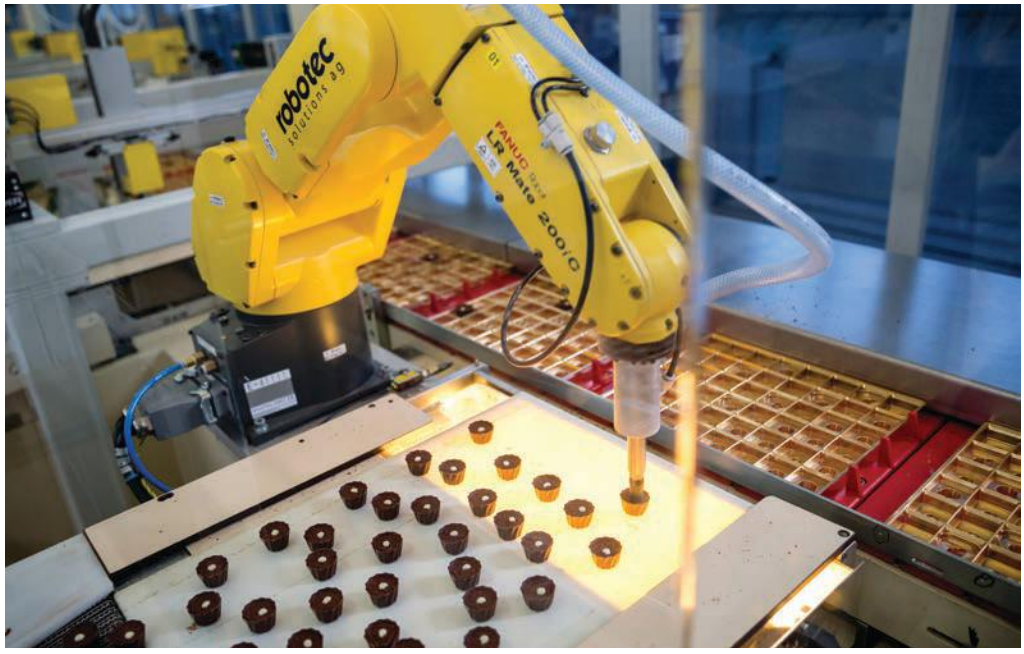
In industrial food processing, technology is allowing advancements in safety with greater monitoring of temperatures at every stage throughout the food chain from producer to retailer. In noisy restaurant kitchens,

beeping monitors can be replaced with LED lights that indicate when a product is cooked or an appliance has reached the required temperature. This also has benefits when a business has a large number of non-English speaking employees.

Robotics are being used in commercial food processing. Although incredibly expensive, robots increase the safety of the food prepared (due to the elimination of human contact with the food) and reduce the incidence of workplace injuries. Robots are used to perform some tasks in meat processing in abattoirs; they are utilised for 'pick and place' activities when packing similar items, such as fruit or vegetables, of a standard size; and robotic 'arms' have been designed to perform standard cake decorating functions, such as piping icing.

Advances in food manufacturing have made processed foods cheaper and more easily accessible, but less nutritious. Some governments around the world are considering a 'sugar tax', which would impact the pricing of sweetened beverages in an effort to curb their consumption and reverse the growing obesity trend.

Additionally, some researchers fear that advances in flavour technology could create 'hyper-palatable foods', foods that are so delicious they could lead to food addiction.



Getty Images/Bloomberg

Figure 3.16 Robots are increasingly being used for food processing activities that are repetitive or dangerous for humans to perform.

The role of food additives in food processing

Food additives are substances added to food to enhance taste and appearance or to preserve it. Industrial food processing uses many additives for a variety of purposes:

- Anti-caking agents are used to keep dry, powdery products from clumping together, such as cake mixes.
- Artificial sweeteners make a product sweet without using sugar, such as diet soft drinks.
- Colours add or restore colours to foods, such as sauces, sweets and snack foods.
- Flavourings and flavour enhancers such as MSG (monosodium glutamate) improve the taste or flavour of a food or restore flavour lost during processing.
- Humectants prevent food from drying out.
- Preservatives protect food against the action of microorganisms.
- Thickeners and vegetable gums give a food product a uniform consistency and texture, such as 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 List found on the Food Standards Australia and New Zealand website.

HANDS-ON



WHAT DO FOOD ADDITIVES DO?

PURPOSE

To conduct experiments to demonstrate the use of food acids and emulsifiers as additives in food.

MATERIALS

An apple, a lemon and an egg yolk
White vinegar, vegetable oil and water
Two small bowls and two screw-top jars
Food processor or blender
Knife, peeler and chopping board

ACTIVITY

1. Peel and cut an apple into slices.
2. Place half the slices in a bowl, uncovered.
3. Place the remaining apple slices in a bowl, squeeze over some fresh lemon juice and mix around, then cover with water.
4. Leave both bowls of apple for 30 minutes.
5. In a food processor or blender, combine equal parts of white vinegar and vegetable oil. Blend at high speed for 30 seconds.
6. Pour the vinegar and oil mixture into a screw-top jar. Leave for 30 minutes.
7. In a food processor, combine equal parts of white vinegar and an egg yolk.
8. With the food processor running, add the oil in a thin, constant stream.
9. Pour this mixture into a screw-top jar and leave for 30 minutes.

QUESTIONS

1. Create two columns to compare the two bowls of apple and the two processed mixtures. What differences do you notice?
2. What can you conclude about the action of the addition of acid (lemon juice) and an emulsifier (egg yolk)?
3. Investigate some manufactured food products that contain food acids and emulsifiers. Suggest reasons why these additives have been used for these products.

Emerging technologies in the food processing industry

Sustainable food production methods

Sustainability is the most significant trend in the food processing industry today. For example, the CSIRO has developed a sustainable, natural food source called Novacq, made from marine microorganisms already existing in nature. Specifically developed for prawn farmers, prawns fed on this product grow 20 to 40 per cent faster, and preserve the precious, limited wild fish sources that have been traditionally used to sustain farmed prawns. Research is continuing to see if this idea can be adapted for other crustaceans.

Food sustainability practices also occur in urban areas where eating local produce is growing in popularity and restaurants are increasingly growing and using their own produce, such as vegetables or herbs.

Packaging innovations

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.

Active packaging

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



Mark Fergus

Figure 3.17 Packages containing oxygen scavengers extend the shelf life of some baked products.

Vacuum packaging

Oxygen contributes to spoiling in food. Manufacturers can remove all air by extracting it with a special type of vacuum. Processed meat, such as bacon, is often found in vacuum packages.

Modified gas packaging

Manufacturers have discovered how to remove oxygen from a package and replace it with another gas, such as carbon dioxide or nitrogen, that helps to slow food decomposition. Fresh pasta can be packaged in a moulded plastic tray with a peel-back lid using modified gas packaging.

Augmented reality shopping

Augmented reality (AR) is where computer-generated images are placed in a real-world environment. The most common application of AR is Google Maps, which allows you to immerse yourself in a location at street-level and look left and right as if you were really there. Pokémon Go is an AR sensation that has elements in common with AR shopping. Currently, the AR shopping experience is limited to furniture and homewares (IKEA's app allows you to visualise the sofa of your choice in your lounge room to check for size and colour), clothing (some stores overseas have a virtual changeroom where you can see how the clothes will look on you without trying them on), and a similar technique employed by some make-up brands with an AR 'mirror' where different products in different shades can be tested without being instore.

AR shopping for food in China is a completely different experience. The 'supermarket' is empty, but when the smartphone app is utilised, these seemingly empty spaces fill with products that can be inspected and selected and placed in a virtual shopping trolley for home delivery. In this example of e-commerce, the 'e' stands for exercise, as physical strolling up and down the 'aisles' is still required!



Getty Images/Digital Vision

Figure 3.18 Augmented reality is a rapidly developing area of the food purchasing experience in Australia. What apps are currently available that allow you to 'interact' with products instore?

3D-printed food

A 3D food printer creates three-dimensional objects using a liquid or paste food material, such as chocolate, sugar or pureed food, to print in layers. This technique can create quite complex designs and shapes.

3D-printed food has a number of advantages. It creates items that are identical in size and shape, excellent for portion control or precise nutrition content. It can create complex, intricate designs that would be difficult or time-consuming for an individual to produce.

3D printers for food are expensive and are still regarded as a novelty. However, NASA is exploring options for applications for its space missions, and further development of 3D printers will see this technology cook the product it has printed.



Getty Images/STEPHANE DE SAKUTIN

Figure 3.19 3D-printed mushrooms

Unmanned aerial vehicles

Unmanned aerial vehicles, known commonly as drones, have been in use for many years, but more recently their agricultural applications have become more widespread and cost effective. Drones are much smaller than other aircraft, enabling low-altitude flight. This gives them a high degree of accuracy when used to assess soils and fields for planting or irrigation requirements. They are able to film and provide information about an area in real time, allowing a speedy response to disease or pest infestation. Additionally, larger drones have the capacity to spray chemicals accurately, and some can plant seeds and apply fertiliser.

FOOD IN FOCUS

3D-PRINTED FOOD

PURPOSE

Investigate an emerging technology in the food industry.

d'Arenberg Cube Restaurant

A 3D printer is used to create the lemon meringue pie at the d'Arenberg Cube Restaurant in McLaren Vale.

The dessert's base is made from caramelised white chocolate set with gelatine and is 3D printed to varying heights to create visual texture. Lemon curd, lemon and vanilla parfait balls, liquid-nitrogen fennel balls and chocolate crisps are added, and a 3D-printed Italian meringue, which was set overnight, is placed on top.

The dish must be prepared 24 hours ahead as some elements need to dry out, while others need to be quite frozen for service.

Chef Brendan Wessels regards the process as rewarding and believes 3D printing provides many options for presentation. He believes that 3D printers will be standard equipment in kitchens in the future.

ACTIVITIES

1. Outline the advantages and disadvantages of 3D-printed food.
2. Investigate other food products that could be successfully 3D printed.
3. Often businesses that invest in the latest technology must charge higher prices for the dishes that are created using that technology. Do you think customers will be willing to pay for a dish created by a process they cannot see? Why?
4. Ask your grandparents or another older person about another technological innovation that changed the way food was prepared or processed in their lifetime. What was the impact of this emerging technology on their lives?



UNIT REVIEW

LOOKING BACK

1. Identify three main areas of technological development in food innovation.
2. Describe the role of food additives in processed foods.
3. Provide an example of three food products utilising active, vacuum and gas packaging.

FOR YOU TO DO

4. Consider whether food additives are really necessary. Explore the consequences of removing additives from commercially produced and packaged bread.
5. Brainstorm a new-to-the-world food product made using a 3D printer. Draw a concept diagram for your idea.

TAKING IT FURTHER

6. Research the restrictions on using drones. What other resources would be available to farmers unable to use this technology?
7. Look at the website for augmented reality company Kabaq. Investigate ways in which businesses could use AR apps to promote their products.



Kabaq

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Chapter review

LOOKING BACK

1 Why do consumers lose 'brand loyalty' over time?
2 Identify some factors related to consumer wishes that drive food product development.
3 Describe the impact of an ageing population on food product development.
4 Outline the economic impacts of the increasing availability of new food products.
5 List three diseases that have been linked with poor diet. Suggest a food product that aims to address the prevalence of each disease listed.
6 Identify possible sources of new ideas for new food products.
7 Define the term 'prototype'.
8 Identify the four elements of the marketing mix.

FOR YOU TO DO

9 What is the newest food preparation or cooking appliance in your home? Consider what products have been designed specifically for that appliance.
10 Explain why a company might develop a me-too product, rather than an innovative product.
11 Market researchers identify consumers' 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?
12 Design a ration pack for an emergency kit (for example, to be taken in the event of a home evacuation) that will make one day's worth of meals that can be eaten warm or cold. Consider weight, packaging, utensils and the preparation required.
13 Explain the target market the following products may be aimed at:
   - breakfast biscuits
   - pre-made pizza bases
   - fresh lentil burger patties
   - heat-in-the-bowl, low-fat microwave meals.
14 Debate the following topic: 'Price is the greatest deciding factor in product longevity.'
15 Watch a televised sporting event, such as football (any code), basketball, motorsport or tennis. Identify any incidental promotion you see during the telecast, but not the advertisements. Are you surprised by the amount of subtle promotion? What is the effect on viewers?

TAKING IT FURTHER

16 Investigate the website of your favourite food product. What does the website cover? Argue this point of view: 'The advent of social media makes product websites irrelevant.'
17 Interview the local Meals on Wheels coordinator. What modifications are made to meals to make them easily consumed by their clients?
18 Select a food product that aims to assist in the prevention of heart disease, high cholesterol or bowel cancer. Research this product and describe how it works in this therapeutic fashion.
19 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 of chance?
20 Conduct further research on sustainable agriculture. Present a short oral report on your findings.

Recipe	Techniques	Equipment	Dietary considerations
Seasonal slushie 	Blending	Chef knife Chopping board Blender or food processor Glassware for serving	V DF GF
Nut-free raw protein balls 	Shaping Processing	Food processor Chef knife Tablespoon	V Vg GF
Kombucha mocktail 	Garnish	Chef knife Chopping board Apple corer Glassware for serving	V Vg DF
Basket meal 	Baking	Pastry brush Ramekins Tongs Cooling rack Baking tray	VO GF VgO
Maple bacon French toast 	Whisking Shallow frying Roasting	Baking tray Whisk Mixing bowl Frypan Tongs	V GF VgO
Blueberry vegan slice 	Grease and line Processing	Mixing bowl Food processor Chef knife Wooden spoon Cake tin	Vg DF GF
Steamed pork dumplings 	Shredding Chopping Steaming	Whisk Chef knife Wooden spoon Chopping board Pastry brush Bamboo steamer	
Frozen dessert 	Beating	Muffin tin Paper cases Electric mixer Wooden spoon	GF

KEY

GF = gluten free V = vegetarian VO = vegetarian option Vg = vegan VgO = vegan option DF = dairy free

Note: All recipes are nut free.

Note: In the dumplings recipe we use spring onions. To clarify, the recipe uses the thin, white onion with the long, green leaves. You may know these as shallots.

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RECIPE



Seasonal slushie

Fruit-based smoothies and drinks continue to be popular in the retail sector. Make this slushie by substituting inexpensive seasonal (and local, depending on where you live) fruit of your choice!

Preparation time 10 minutes **Cooking time** nil **Serves** 2

INGREDIENTS

½ cup ice
1 cup watermelon chunks
¼ cup rockmelon chunks
1 tablespoon orange juice
2 teaspoons honey
2 sprigs mint, for garnish

METHOD

1. Wash all fruit and the mint.
2. Cut the fruit into 3 cm chunks.
3. Put all ingredients except mint in a blender and blend until it is a slushy, icy consistency.
4. Serve in a tall decorative glass, garnished with mint.

QUESTIONS

1. Devise a recipe for four different coloured slushies.
2. Create a slushie with a more substantial fruit garnish.
3. Take a photo of your slushie and create a promotional Instagram image of it.

RECIPE

Nut-free raw protein balls

Protein balls are the snack of choice for the health conscious with limited cooking ability. These protein balls are nut and dairy free.

Preparation time 10 minutes **Cooking time** nil **Makes** approximately 20 balls

INGREDIENTS

1 cup sunflower seeds
1 cup dates
1 cup raisins
¼ cup cocoa
1 tablespoon coconut oil
1 cup desiccated coconut

METHOD

1. Roughly chop the dates and raisins.
2. Put all ingredients except the coconut into a food processor.
3. Blitz until the mixture starts to form a ball.
4. Roll tablespoonfuls of mixture into balls with damp hands.
5. Pour the coconut into a bowl and roll the protein balls in the coconut.
6. Refrigerate.

QUESTIONS

1. Suggest dried fruit substitutions for the dates and raisins.
2. What hygiene practices did you follow when making this recipe?
3. Why does having damp hands assist when rolling the balls?
4. Package this snack for sale for a market. Use an online label generator to create a nutrition panel.



Mark Fergus

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RECIPE



Mark Fergus

Kombucha mocktail

Kombucha-based beverages are very popular in the chilled cabinet of the supermarket. Kombucha is essentially a fermented tea drink, thought to have probiotics and antioxidants beneficial to gut health.

Preparation time 10 minutes **Cooking time** nil **Serves** 2

INGREDIENTS

250 mL kombucha, ginger flavoured
2 cm piece of ginger
½ red apple
½ lime
375 mL ginger ale
2 teaspoons lime juice

METHOD

1. Wash, core, quarter and very thinly slice the apple, place in a bowl and pour over the lime juice.
2. Peel and thinly slice ginger.
3. Thinly slice the lime into rounds. Make a cut from the outside of the circle to the centre in two of the slices and set aside as a garnish.
4. Place some slices of ginger, lime and apple in 2 tall glasses.
5. Combine the ginger ale and kombucha in a jug, stir to combine.
6. Pour kombucha mix over the apple and ginger.
7. Garnish by sliding the slice of lime over the rim of the glass.

QUESTIONS

1. Ask your teacher to reserve some of the kombucha for tasting by itself – did you like it?
2. Research the making of kombucha. What is kombucha scoby?
3. Kombucha is a fermented product (but is not classed as an alcoholic beverage). What other food products require fermentation?

RECIPE

Basket meal

Packages that can be 'eaten' are the next step in environmentally friendly processed food production. Serve this edible basket with a fresh salad or a mince dish.

Preparation time 5 minutes **Cooking time** 20 minutes **Serves** 2

INGREDIENTS

2 tortillas

1 tablespoon vegetable oil

2 oven-safe ramekins or small bowls

METHOD

1. Preheat the oven to 180 °C.
2. Using a pastry brush, brush both sides of the tortillas with oil.
3. Gently push the tortillas into the ramekins. Tear off a square of foil, loosely crunch into a ball and place into each tortilla bowl. The foil should help the tortilla hold its shape and not collapse inwards.
4. Place ramekins on a baking tray and place in the oven for 5 minutes.
5. Remove from oven. Using tongs, carefully remove the foil balls and return the tray to the oven for another 3–4 minutes.
6. Remove from oven. Using tongs, carefully remove the tortilla baskets and place upside down on the baking tray. If the baskets are in danger of collapsing, replace the foil ball inside each inverted basket.
7. Return to the oven and cook for a further 5–8 minutes or until crispy. Watch carefully to ensure they do not burn.
8. Allow to cool completely on a cooling rack.



Mark Fergus

QUESTIONS

1. Brainstorm other food items that could be turned into baskets or food containers.
2. Identify how this recipe could be modified for someone who is gluten intolerant.
3. If you were to sell your tortilla baskets commercially, would they need a best-before or use-by date? Why?
4. List the safety precautions you took to protect yourself from injury in the making of this recipe.

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RECIPE



Mark Fergus

Maple bacon French toast

Food companies are experimenting with sweet and savoury 'mash-ups'. Think about the classic sweet/savoury combo of ham and pineapple and apply it to your thinking. Cadbury developed chocolate flavoured with Vegemite; Americans love pumpkin pie with cream for dessert! This recipe uses another favourite sweet/savoury combo – maple syrup and bacon.

Preparation time 5 minutes **Cooking time** 25 minutes **Serves** 2

INGREDIENTS

6 cherry tomatoes
2 eggs
⅓ cup milk
1 teaspoon caster sugar
1 teaspoon soft butter or margarine
2 slices thick toast-cut bread
2 rashers of bacon
¼ cup maple syrup

METHOD

1. Preheat oven to 220 °C. Line a baking tray with baking paper. Place tomatoes on tray.
2. Crack eggs into a bowl. Add the milk and sugar and whisk well.
3. Place tomatoes into oven for 15 minutes.
4. Dip bread into the egg mixture – ensure the mix has soaked in.
5. Place a frypan on medium heat on the stovetop. Add butter to melt.
6. Place one slice of the soaked bread into the frypan. Cook for 1–2 minutes each side or until golden. Repeat with the second slice. Place both slices of French toast on a tray lined with baking paper and cover with foil.
7. Take the frypan off the heat and, wearing oven mitts, wipe the pan clean with a paper towel.
8. Place the frypan on medium heat and add bacon. Cook 2–3 minute each side or until lightly browned.
9. Divide toast among serving plates, top with bacon and roasted tomatoes, arranging neatly. Drizzle with maple syrup.

QUESTIONS

1. Consider other flavour 'mash-ups' you have tried. Would they be commercially successful?
2. Suggest ingredient substitutions to make this recipe suitable for gluten-free or dairy-free classmates.
3. Investigate the unusual flavour combinations food companies have tried. Which ones have been successful?

RECIPE

Blueberry vegan slice

Vegans by definition do not eat animal products of any kind. This dietary choice is growing in popularity, and food companies are developing products to market to this group.

Preparation time 15 minutes (+ chilling time – min. 1 hour) **Cooking time** nil **Makes** 9

INGREDIENTS

Bottom layer

¾ cup almond flour
2 tablespoons water
1 tablespoon oil
1 tablespoon maple syrup
1 tablespoon treacle

Blueberry layer

1 cup pureed blueberries
1½ cups almond flour
¼ cup maple syrup
1 tablespoon treacle
3 tablespoons oil
Cocoa, for dusting

METHOD

1. Grease (using cooking spray) and line a 20 cm square cake tin.
2. Combine all bottom layer ingredients in a bowl and mix well. Place in the refrigerator or freezer until firm (approximately 20 minutes).
3. Process blueberries in a food processor.
4. Pour blueberries into a clean bowl and add remaining topping ingredients. Mix well.
5. Remove slice from refrigerator or freezer and press the blueberry mixture evenly on top. Dust with cocoa and refrigerate until firm (approximately 40 minutes or overnight).
6. Cut into squares for serving.

QUESTIONS

1. Suggest ingredient substitutions for blueberries, treacle and flour to make the recipe more suitable to seasons, ingredient availability or dietary needs.
2. The colour of this slice will be very vibrant. Experiment with methods of dusting the cocoa to make attractive patterns (such as using paper stencils). Take photos of your finished product and create a recipe card for display.
3. Reserve a slice and experiment with freezing it – on thawing, is the slice still as appealing in texture, colour, flavour?
4. Leave a slice out of the refrigerator for an hour. Assess how it tolerates room temperature.



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RECIPE



Mark Fergus

Steamed pork dumplings

Processed and packaged frozen dumplings have recently been named the convenience product of the year. Have a go at making your own!

Preparation time 30 minutes **Cooking time** 20 minutes **Serves** 2

INGREDIENTS

Wonton wrappers, cut into approximately 10 cm squares or circles

200 g pork mince

1 teaspoon minced ginger

1 teaspoon minced garlic

1 spring onion

1 tablespoon soy sauce, plus extra for dipping

2 teaspoons sesame oil

½ egg

⅛ Chinese cabbage (wombok)

Small amount of flour

METHOD

1. Thinly slice the spring onion and finely shred the cabbage.
2. Crack the egg into a small bowl and beat lightly.
3. In a large bowl, combine the pork mince, ginger, garlic, spring onions, soy sauce, sesame oil, ½ the egg and cabbage. Stir until well mixed. (Add a little more egg if the mix seems too dry.)
4. Dust a clean chopping board with flour. You will place the completed dumplings on the board as you make them, and the flour prevents them from sticking.
5. Place a heaped teaspoon of filling into the centre of each wonton skin, leaving a margin around the edges.
6. Brush the edges of the wonton skin with water and fold over to form a triangular or semi-circular package. Roll or crimp the edges slightly to seal in the filling.
7. To cook, steam the dumplings using a bamboo steamer set over a saucepan of simmering water for 15–20 minutes. Serve immediately with extra soy sauce for dipping.

QUESTIONS

1. Watch a video that shows professional dumpling makers at work. Discuss how yours compared.
2. Consider why dumplings may have been named 'product of the year'. Would you make them again?
3. If you have a combination steam oven at school, how much cooking time did this save?
4. Suggest ingredient variations for vegetarian options.

Dumplings

RECIPE

Frozen dessert

Some best-selling products are endorsed by famous personalities. Name this dessert after your favourite celebrity.

Preparation time 15 minutes **Cooking time** nil **Makes** 6

INGREDIENTS

300 mL cream

200 g or ½ tin condensed milk

2 tablespoons coconut milk powder

125 g frozen raspberries

METHOD

1. Line a muffin tin with 6 paper cases.
2. Combine the cream and condensed milk, and beat with electric beaters until thick.
3. Divide the mixture in half.
4. Crush the frozen berries with a wooden spoon and stir into one half of the cream mixture.
5. Stir the coconut milk powder into the other half.
6. Spoon the white mixture into paper cases until half full. Finish with a layer of raspberry mixture to fill to the top.
7. Freeze until set.
8. Garnish with flavoured ice-cream topping and fresh berries.

QUESTIONS

1. Describe other flavours that 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. Would this entice you to purchase the product?



Mark Fergus



CHAPTER 4

Food selection and health

FOCUS AREA:

How does the food we eat affect our health?

This chapter focuses 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 nutrition and suggests means of improving the nutritional status of Australians. You will also select, plan and prepare safe and nutritious foods that reflect national food guides.

CHAPTER CONTENT

In this chapter you will:

outline
- the functions of food in the body
- the sources of, and ways the body uses nutrients – proteins, carbohydrates, lipids, vitamins, minerals and water
- the health conditions that result from under- and overnutrition

describe
- the process of digestion
- how active non-nutrients keep us healthy

prepare foods using basic ingredients

demonstrate
- knowledge of the correct equipment and techniques to use in food preparation
- how to prepare food safely and hygienically

investigate
- what we should be eating throughout the life cycle
- the influences on what we eat
- food guides that encourage healthy eating

plan and prepare meals that meet nutritional requirements throughout the life cycle

design, plan and prepare safe foods that follow food guidelines that encourage healthy eating

analyse who is responsible for promoting good nutrition in Australia, how they do this and their ethical responsibilities

explore what we eat in Australia and how this affects our health.

Pre-test quiz

RECIPES
- ʻOtai (Polynesian watermelon drink)
- Chocolate bliss balls
- Popcorn chicken
- Sweet potato fries
- Greek salad
- Creamy tuna pasta bake
- Lebanese rice pudding
- Beef quesadillas

FOOD FACTS

The protein in protein powders usually comes from dried milk. These powders can be very concentrated in protein. If the body does not require the protein, it gets stored as body fat.

Sulphur found on the molecule of egg proteins is responsible for the odour of rotten eggs.

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

Excessive amounts of caffeine can prevent the body absorbing calcium.

Make sure to drink plenty of water when you include fibre in your **diet** – otherwise you may get stomach pains.

Temperature can affect your appetite – you are more likely to be hungry if you are cold!

An adult's gastrointestinal tract for food digestion is around 8 metres in length.

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

A can of soft drink contains 11 teaspoons of sugar. You need to walk 3 kilometres to burn up this amount of sugar.

Have broccoli, parsley, brussel sprouts, tomato or capsicum with your meat. These foods are high in vitamin C, which helps to absorb the iron in the meat.

Peeling an apple will remove 50 per cent of its total fibre and around 30 per cent of its vitamin C.

Vitamins can be referred to by their alphabetical or chemical names.

Type 2 diabetes is the world's fastest growing **chronic** disease.

FOOD WORDS

antibodies proteins in the blood that react with bacteria, viruses and other foreign substances to prevent them harming the body

antioxidant a substance that reduces damage due to oxygen

chronic constant or continuing for a long time

condiment a substance, such as a sauce, that gives a special flavour to a food

deficiency lack or absence of a particular nutrient

dehydration lack of water in the body

development the process in which someone or something grows or changes and becomes more advanced

diet the sum of food consumed by a person

electrolytes minerals that are found in body tissues and blood in the form of dissolved salts

energy the capacity or power to do work. It exists in various forms such as chemical, mechanical and electrical. In humans, it is needed for both physical and mental activities

enriched nutrients are added to improve nutritional value

health the state of being free from illness or injury

hormone a protein-based substance made by the body to perform a specific function; for example, to stimulate growth and development

kilojoule a standard unit of energy measurement. Calorie is the non-metric unit measurement

lactation the production of milk by females after childbirth

maintenance the process of preserving a condition or situation

processed foods foods that have undergone change from their original raw state by a manufacturing process

repair to restore (something damaged, faulty or worn) to a good condition

stunted underdeveloped

Functions of food in the body

Food is important for life. To be healthy and active, each day we need to have safe food that is rich in a variety of nutrients. Nutrients are the chemical substances in food that our bodies process to enable it to function.

The six nutrients are:

1. proteins
2. carbohydrates
3. lipids
4. vitamins
5. minerals
6. water.

As no one food contains all the nutrients in the quantities we require for health, we need to eat a variety of nutritious foods from different food groups each day to carry out the following functions:

- growth and development
- provision of energy
- repair and maintenance of the body's cells.

Growth and development

Food supplies the materials needed for the body to grow and develop.



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Figure 4.1 Growth and development throughout the life span

Even before birth, mothers need to eat foods that will help their babies to grow and develop. Infancy, childhood and adolescence are also periods of rapid growth and development. While adults may have stopped growing taller, everyone needs food to build new cells to replace injured or dead cells. For instance, we shed dead skin cells daily.

Proteins and minerals are the best nutrients for growth and development. Protein is the building block of every body tissue cell, including bone, teeth, skin and muscle. If a person is lacking protein in their diet, problems may occur, such as stunted growth.

Provision of energy

Food supplies the fuel or energy needed for our bodies to move and work.

We need energy to stand, walk and run; but even when we are still, our organs, such as our lungs and heart, are working to keep us alive. This is why, when the body lacks energy, you may feel tired. Over time, you even lose weight. In severe circumstances, a lack of energy may shut down certain body processes. On the other hand, excess energy causes fat build-up and can lead to obesity. Foods rich in carbohydrates and lipids help to provide energy.



iStock/Getty Images Plus/FatCamera

Figure 4.2 The more active you are, the more energy you need from food.

Repair and maintenance of cells

A car requires regular maintenance in order for it to run smoothly and prevent breakdowns. Similarly, cells in the human body need to be in a good condition in order to regulate body processes and protect the body against disease and infection. Nutrients, including water and vitamins, when consumed in adequate amounts from food, will help the body to stay healthy.



UNIT REVIEW

LOOKING BACK

1 Identify three main functions of food.
2 Identify the six food nutrients.
3 At what life stages do rapid growth and development occur?
4 List three body tissues that are made from protein.
5 Which two nutrients provide most of our energy?

FOR YOU TO DO

6 Energy is measured in kilojoules. Research approximately how many kilojoules are in:
- an apple
- a glass of water
- a glass of soft drink
- a slice of bread
- another food of your choice.

7 Research approximately how many kilojoules would be burned during one hour of the following activities.
- Jogging
- Sitting
- Swimming

8 Explain what results from consuming more energy than your body needs.

TAKING IT FURTHER

9 In groups of two or 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.

Digestion of food

Digestion is the process whereby food is broken down into smaller chemical units that may be absorbed and used by the body. It takes place in the body's gastrointestinal tract. It relies on both mechanical and chemical actions to break down food. The process from eating a food to removal of wastes can take from 24 to 72 hours.

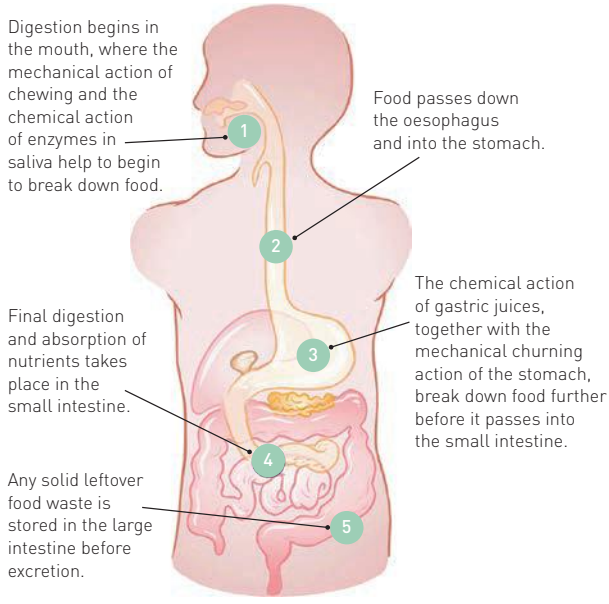


Figure 4.3 The process of digestion

Absorption of nutrients

In the small intestine, digestion has released water, vitamins and minerals from food and broken down:

- carbohydrates into glucose
- proteins into amino acids
- lipids into fatty acids and glycerol.

These nutrients can now pass through the walls of the small intestine into the bloodstream, where they can be carried to the cells that require them.

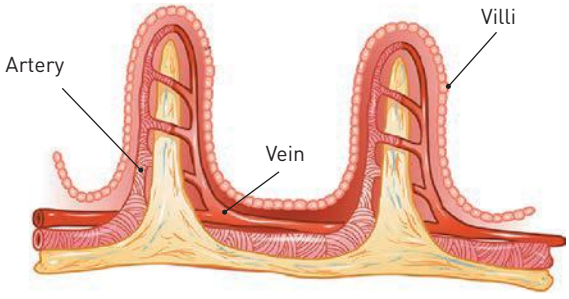


Figure 4.4 The villi line the small intestine, allowing tiny units of each nutrient to pass through into the bloodstream. For some people, consuming gluten (protein in wheat) can irritate the villi and interfere with nutrient absorption.

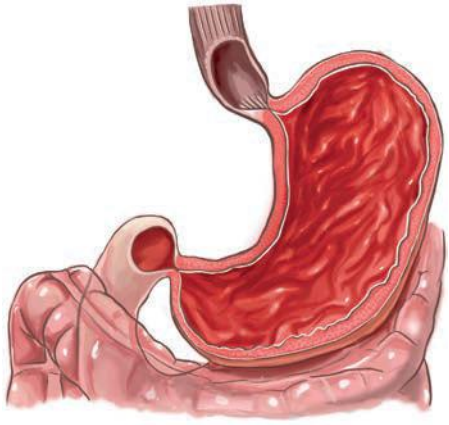


Figure 4.5 The stomach stores two to three meals at a time and its strong acids can destroy germs in food. The smell or appearance of a food can send messages to the brain to release stomach acids even before we start to eat.

Metabolism

'Metabolism' refers to all the processes involved in breaking down food into nutrients so they can be used by the body for energy and to maintain and repair cells. Every person has a different rate of metabolism based on how quickly their body digests food, absorbs nutrients and uses energy. People with a high metabolic rate burn the energy from food at a faster rate and so are less prone to weight gain.

Factors that affect your metabolism include:

- body size and composition – people with larger bodies or more muscles usually have a higher metabolism
- gender – males usually have a higher metabolic rate than females
- age – as you get older, metabolism slows
- genes – you may inherit your rate of metabolism
- activity – exercise can increase your metabolism.

UNIT REVIEW

LOOKING BACK

1 How long does it take, on average, for food to be digested?
2 Identify the following processes.
   - Where digestion begins.
   - Where absorption takes place.
   - Where waste is stored.
   - How germs are destroyed.
   - How proteins are broken down into amino acids.
   - What connects the mouth to the stomach.
3 Identify what carbohydrates are broken down into after digestion.
4 What is metabolism?
5 List four factors that may affect your metabolism.

FOR YOU TO DO

6 Test your knowledge: without looking at any reference materials, explain the steps of digestion. You may like to use drawings to assist your explanation.
7 Sport uses energy. Research how many kilojoules per hour is used to play five different sports. Create a bar graph to show your data.

TAKING IT FURTHER

8 Research the role of one enzyme that is used in digestion.
9 Research the role of the liver and pancreas in the digestive system. What do they do and where are they located?

Functions and sources of food nutrients

Nutrients are chemical substances found in food: proteins, carbohydrates, lipids, vitamins, minerals and water. All six nutrients perform specific roles in the body.

Proteins

Functions

Proteins:

- build and repair all hard and soft body tissue such as bone, teeth, muscle tissue and organs
- make enzymes, antibodies, hormones and haemoglobin required for body processes
- provide energy (17 kilojoules per gram) when no other source of energy is available.



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Figure 4.6 Different foods have different amounts of nutrients. Nutrition education teaches you what combinations of foods to eat in order to receive the correct balance of nutrients.

Sources

Proteins are complex substances made from amino acids. There are 22 different amino acids. Of these, nine must be supplied from food each day in order for protein to build cells.

Foods that contain all these nine essential amino acids are called complete proteins. These are found mostly in animal foods, although soybeans are a plant source of complete protein.

Incomplete proteins lack at least one of the nine essential amino acids. They are mostly found in plant foods. Incomplete proteins can be combined to produce a complete protein if the amino acid lacking in one is present in the other. An example of this is black beans and rice, which is the base of many Mexican dishes. Knowing how to combine incomplete protein foods is very important for the health of 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.

Table 4.1 Sources of protein

Complete proteins	Incomplete proteins
Milk Yoghurt Cheese Eggs Meat Poultry Fish Shellfish Soybeans Soy milk Tofu Textured vegetable protein (TVP), a meat substitute	Legumes (dried beans) Pulses and lentils Nuts Seeds (e.g. sunflower and sesame) Cereal grains (e.g. rice, wheat, oats, rye and corn) Cereal products (e.g. flour, bread and pasta)

Carbohydrates

Functions

Carbohydrates provide energy.

After digestion, all sugars and starches are broken down to glucose. Once the glucose is absorbed, it is converted to energy to allow the body to work. 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.

Sources

Through the process of photosynthesis, plants produce and store carbohydrates. This is why carbohydrates are present in plant foods.

There are two types of carbohydrates:

- Simple carbohydrates, or sugars – there are different types of sugars found naturally in foods and often added to processed foods because of their sweet flavour (see Table 4.2).
- Complex carbohydrates, or starches, have longer structures and therefore take longer to digest. They are found in grains, such as rice, corn, wheat, rye and oats, and cereal products such as bread, pasta and breakfast cereals. They are also present in fruits, vegetables, legumes and pulses.

Table 4.2 Food sources of sugars

Sugar	Food sources
Glucose	Fruits, honey
Fructose	Fruits, honey
Sucrose	Sugar cane
Lactose	Milk
Maltose	Malt

Lipids

Functions

Lipids (also known as fats) provide:

- energy (37 kilojoules per gram, twice that of proteins and carbohydrates)
- warmth and protection from injury, from fat under the skin
- transport for moving fat-soluble vitamins A, D, E and K around the body
- fatty acids such as omega-6 to help form cell walls and omega-3 for brain development.



Mark Fergus

Figure 4.7 Butter, margarine, cream and oil are added to foods to enhance the flavour. Think about why we spread butter on bread.

Sources

Lipids are found in both animal and vegetable sources. Animal fats are usually solid at room temperature while vegetable sources are usually liquid at room temperature.

Animal sources of fats are also higher in saturated fatty acids while vegetable sources are higher in mono and polyunsaturated fatty acids (unsaturated fats). Each lipid molecule is made of one glycerol molecule and three fatty acids, which can be either saturated, monounsaturated or polyunsaturated. Saturated fatty acids have no double bonds, monounsaturated fatty acids have one double bond and polyunsaturated fatty acids have two or more double bonds between carbon atoms on their structures.

A diet high in saturated fats may raise blood cholesterol levels. Cholesterol is a fatty substance essential to many metabolic processes but high blood cholesterol has been linked to coronary heart disease. While unsaturated fats are less likely to raise blood cholesterol, all lipids provide a concentrated source of energy and excess lipids in the diet is converted to body fat and results in weight gain.

Vitamins

The general function of vitamins is to protect the body against disease and regulate body processes.

There are two types of vitamins:

- fat-soluble vitamins A, D, E and K
- water-soluble vitamins C, B complex and folate.

If consumed in large quantities, fat-soluble vitamins accumulate in fat stores and the liver and can even become toxic.

Water-soluble vitamins cannot be stored in the body, so a daily supply from a variety of foods is important.

Table 4.3 Food sources of the different types of lipids

Saturated fats	Monounsaturated fats	Polyunsaturated fats
Butter and cream Milk, cheese, yoghurt and other dairy foods Lard Egg yolk Coconut Meat and chicken Palm oil used in processed food	Olive oil Canola oil Olives Nuts Avocado	Vegetable oils Margarine Oily fish (e.g. salmon) Fish oils

Table 4.4 Functions of vitamins

Vitamin	Function	Food sources
A	Necessary for growth, healthy skin and eyes	Dairy foods, butter, 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
B9 (folate)	Contributes to the healthy development of babies in pregnancy to prevent neural tube defect	Bread, flour, breakfast cereals, liver, kidney, meat and potatoes
C (ascorbic acid)	Keeps the skin, bones and muscles healthy Increases resistance to infection Helps the body absorb iron	Green leafy vegetables, citrus fruits, capsicum and tomatoes
D	Needed to form strong bones and teeth because it helps the body absorb calcium	Butter and margarine, milk, eggs and oily fish Sunlight on the skin also forms vitamin D in the body

Minerals

The general function of minerals is to protect the body against disease and regulate body processes.

The body requires over 20 mineral elements daily in very small amounts. These include minerals such as magnesium, zinc and potassium. The minerals listed in Table 4.5 need particular consideration.

Table 4.5 Functions of minerals

Mineral	Function	Food sources
Calcium	Works with the mineral phosphorus and vitamin D to strengthen bones and teeth	Milk, yoghurt, cheese, nuts, fish with edible bones, and soybeans
Iron	Required to form haemoglobin, which transports oxygen in the blood	Red meat, oysters, fish, chicken, eggs, breakfast cereals, wholegrain bread, lentils, legumes and green leafy vegetables
Sodium	Maintains fluid and electrolyte levels in the body to help move nutrients into and wastes out of body cells Helps muscles to contract and relax	Salt (sodium chloride), salted nuts, soda water, cured meats (e.g. salami) and processed foods such as dried soups, stocks and snack foods

Water

Function

The general function of water is to protect the body against disease and regulate bodily processes such as digestion and respiration. It has many roles in the body, and indeed the human body is approximately 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.

Sources

The body requires about 2 litres of water a day to carry out its functions 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. Fresh water has no kilojoules, sugar or fat, and can contain fluoride, so it is an excellent drink choice.

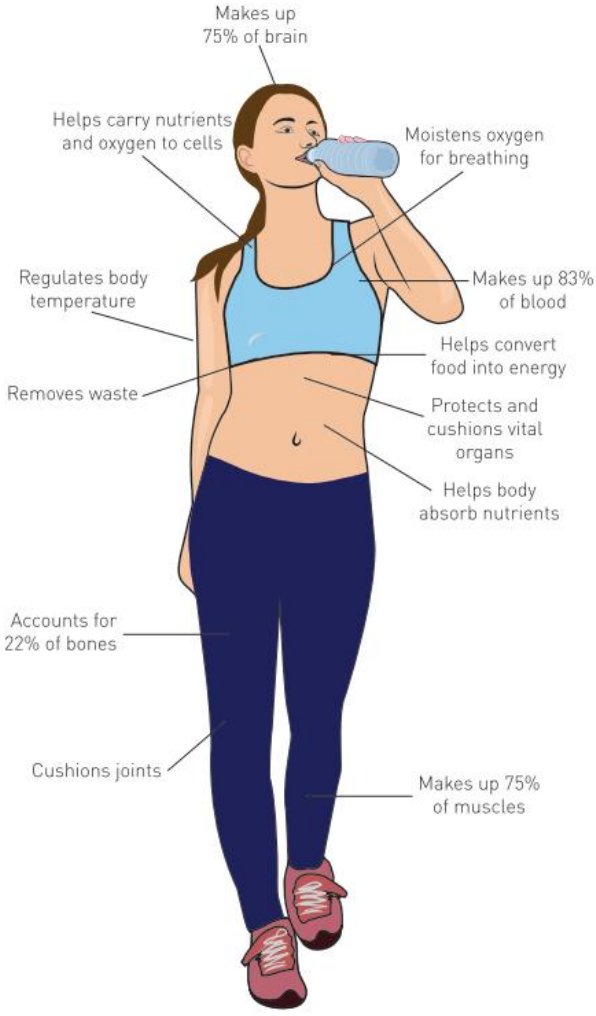


Figure 4.8 Functions of water in the body

HANDS-ON

MAKE A SMOOTHIE BOWL

PURPOSE

Prepare a nutrient-rich breakfast smoothie bowl.

MATERIALS

(Makes 1)

1 frozen banana

½ cup frozen fruit (e.g. strawberries or mango)

½ cup milk of your choice

2 tablespoons natural yoghurt

Blender or 'bullet'

Topping options:

- shredded or desiccated coconut
- nut-free granola
- fresh fruit (e.g. sliced strawberries).

ACTIVITY

1. Blend fruits.
2. Add enough milk and yoghurt until thick consistency.
3. Pour into a bowl.
4. Decorate top.

QUESTIONS

1. Identify one ingredient in a smoothie that is rich in the following nutrients:
   - protein
   - vitamins
   - minerals
   - water.
2. List other frozen fruits that can be used in the smoothie bowl.
3. Find four images of possible ways to decorate the top of the smoothie.
4. Find a recipe for a smoothie bowl that uses a vegetable.



UNIT REVIEW

LOOKING BACK

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

a Proteins are made from amino acids.
b Meat is an incomplete protein.
c Carbohydrates are needed for growth.
d Lipids help to keep the body warm.
e Lipids give 37 kilojoules of energy per gram.
f Calcium moves oxygen in the blood.
g Sunlight is a source of vitamin D.
h Water has no kilojoules.
i You need to have a glass of water a day.
j Lactose is the natural sugar found in eggs.

FOR YOU TO DO

2 Copy and complete the table as a summary of the functions and food sources of the six food nutrients.

Six nutrients	Main function	Three rich food sources
	Growth and development	
Lipids	Energy	
	Protects and regulates body processes	
	Protects and regulates body processes	Cheese Red meat Salt
Water		

TAKE IT FURTHER

3 Research and design a simple A4 poster or PowerPoint slide on a vitamin or mineral allocated to you by your teacher that includes:

- the name of the vitamin or mineral
- the importance of the vitamin or mineral in the body
- rich food sources of the nutrient.

Active non-nutrients

Active non-nutrients are substances that are 'not nutrients' but can assist with body processes to maintain or enhance good health. They include:

- dietary fibres
- phytochemicals
- probiotics.

Dietary fibres

Dietary fibres are non-digestible carbohydrates found in plant foods. Cellulose is a fibre that forms part of the cell wall of green plants. Other examples of fibres include pectin and resistant starch.

Functions

Fibre helps to maintain a healthy digestive system. This is because fibre:

- helps to move food down the digestive system
- delays the stomach emptying, so you feel full longer
- absorbs water during digestion, which makes you feel full and softens wastes.

Fibre can prevent:

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

Sources

Fibre-rich foods include:

- bran (the outer layer of grains) (e.g. wheat oat and rice bran)
- wholegrain products (bran still on grain) (e.g. brown rice, wholegrain bread and pasta, wholemeal flour, rolled oats, popcorn)
- fruit and vegetables, particularly raw and with their skins on; dried fruits
- lentils, pulses and legumes (e.g. baked beans, kidney beans, chickpeas, dahl, split peas)
- nuts and seeds (e.g. chia, sesame seeds, cashews, almonds)
- plant-based milk and dairy milk products (e.g. soy, almond and coconut milks, tofu, milk and cheeses from cows, goats or sheep).

HANDS-ON

MAKE A NUT-FREE TRAIL MIX

PURPOSE

Prepare this carbohydrate and fibre-rich snack.

MATERIALS

1 snack-size ziplock bag
Tablespoon measures
Digital scales
Sticky envelope-size label

Suggested ingredients:

- coconut flakes
- banana chips
- granola (nut-free)
- chopped pretzels
- yoghurt-covered sultanas
- mini chocolate chips (or M&Ms)
- dried fruit (e.g. diced apricots, chopped raisins, cranberries, goji berries)
- pepitas
- sunflower seeds.

ACTIVITY

1. Measure the weight of the ziplock bag.
2. Using the tablespoon measures, collect ingredients of your choice and place into your snack bag. Use no more than 1 tablespoon of any ingredient.
3. Mix the ingredients and seal.
4. Measure the weight of the contents in bag and then subtract the weight of the empty bag to attain the net weight.
5. Produce a label for the trail mix that includes:
   - brand name
   - common name – trail mix
   - ingredients
   - net weight (g).

QUESTIONS

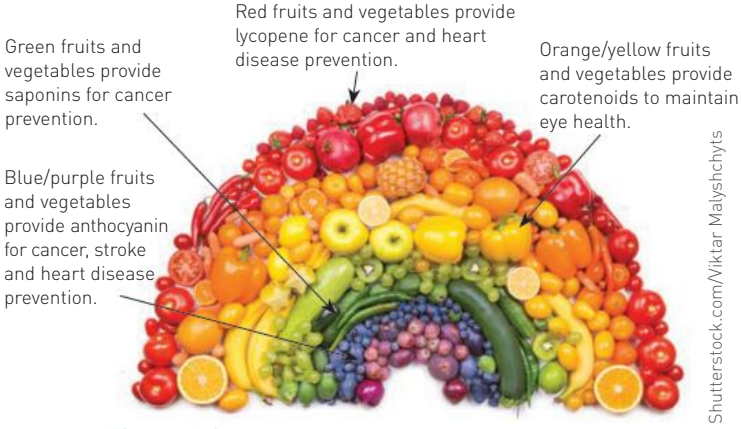
1. Identify the ingredients high in carbohydrates.
2. Explain the function of carbohydrates.
3. Identify the ingredients in the recipe which are high in fibre.
4. Outline the functions of fibre in the diet.
5. Describe how you might vary the ingredients in the recipe to appeal to two different age groups.

Give colour a spin

Phytochemicals

Function

Phytochemicals are disease-fighting chemicals found in plants. There are many different phytochemicals in plants. Most are antioxidants that stop free radicals in the body damaging cells. Phytochemicals also give fruits and vegetables their vibrant colour. For instance, carrots are orange due to the presence of phytochemicals called carotenoids.



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Figure 4.9 Aim to eat a rainbow of coloured fruits and vegetables daily to enjoy the benefits of a full range of phytochemicals.

Probiotics

Function

Probiotics are live microorganisms found in a food. They help to maintain a healthy digestive system.

Our intestines naturally have good and bad bacteria. The good bacteria break down food and make vitamins K, B12 and folate.

Poor diets, stress, ageing or antibiotics can reduce the levels of good bacteria in the gut. This can cause diarrhoea, bloating and abdominal pain. Probiotic foods aim to introduce good bacteria to ensure a healthy digestive system.

Sources

Two friendly bacteria are lactobacillus and bifidobacteria, which can be found in yoghurts, some cheeses and buttermilk, as well as in fermented milk drinks like kefir and Yakult. Fermented soybean products, such as miso soup, and fermented cabbage, such as sauerkraut and kimchi, also contain probiotics.

FOOD IN FOCUS

PROBIOTICS

PURPOSE

Describe probiotics, and discuss how they can be used in commercial food products.

Kombucha

Kombucha is a fermented, probiotic drink that originated in China about 2000 years ago. Kombucha is made by adding a 'scoby' – a symbiotic culture of bacteria and yeast – to tea and sugar and then allowing the mixture to ferment. The result is a fizzy beverage with an acidic taste.

In Australia, kombucha is growing in popularity because of its alleged health benefits. These include detoxifying the blood, reducing cholesterol levels and blood pressure, protecting against diabetes, antibiotic effects and counteracting ageing. These claims have not been proven, but there have been studies on probiotics, which are found in kombucha. Probiotics have been found to aid in digestion and may help with irritable bowel syndrome.

Source: Adapted from https://www.livescience.com/55885-kombucha.html

ACTIVITIES

1 How is kombucha made?
2 Identify the unproven claims about kombucha.
3 Outline how probiotics in kombucha can assist health.
4 Define 'scoby' and research the production of another food that uses a scoby.
5 Research and list five other probiotic foods.
6 Research and describe the symptoms of irritable bowel syndrome.

HANDS-ON

MAKE SAUERKRAUT

PURPOSE

Prepare and ferment a vegetable into a probiotic food.

MATERIALS

1 medium head of white cabbage (800–900 g)
3½ teaspoons sea salt (about 18 g)
⅓ cup filtered water
Glass jar, about 500–750 mL, and a lid
Large container or a mixing bowl
Knife or food processor
Spoon
Chopping board

ACTIVITY

1 Cut the cabbage into quarters, remove the core and shred with a knife or a food processor.
2 Add to a container and sprinkle with salt, toss through and set aside for 5 minutes.
3 Wash the glass jar and its lid in hot, soapy water, rinse and dry.
4 Add fresh, cold water to the cabbage and start mixing and squeezing everything with your hands for a few minutes to bruise the vegetable and release the juices.
5 Pack the cabbage tightly into the clean jar. Use a spoon to push down the cabbage so it is very compacted and the brine floats to the top. Fill up to the top, leaving about 1–2 cm space at the top.
6 Press down again so that the cabbage is covered by the juice, pour in the rest of the brine. Cover tightly with the lid and set aside in a warm spot, such as near the stove.
7 Leave the jar out at this room temperature for at least 7 days. For the first few days, open the lid every 12–16 hours to let some of the pressure out and to make sure cabbage is submerged under the liquid. Add a little extra water if needed.
8 Taste after 7 days and it should be fermented enough to start consuming. Ferment longer for sourer and softer kraut. After that, keep the jar in the fridge for a few weeks.



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Figure 4.10 Sauerkraut is traditionally served with hot dogs.

UNIT REVIEW

LOOKING BACK

1 Define the following terms.
   - **a** Active non-nutrients
   - **b** Dietary fibre
   - **c** Phytochemicals
   - **d** Probiotics

2 Answer true or false to each of the statements below.
   - **a** Fibre is found in animal foods.
   - **b** Bran is the outer layer of cereal grains.
   - **c** White rice has more fibre than brown rice.
   - **d** Fibre can provide energy to the body.
   - **e** Raw fruits and vegetables are high in both fibre and phytochemicals.
   - **f** Carotenoids in carrots help to maintain eye health.
   - **g** Both fibre and probiotics maintain digestive health.
   - **h** Probiotic foods may contain the bacteria lactobacillus.
   - **i** Fibre makes you feel full.
   - **j** Lack of fibre in the diet can cause dental decay.
   - **k** Soy milk contains some fibre.

FOR YOU TO DO

3 Modify the following breakfast menu to provide more fibre and phytochemicals:
   - Vanilla yoghurt
   - Buttered white bread toast.

4 Plan a child's school lunch that is rich in fibre and phytochemicals.

5 List ingredients you would use to make a rainbow fruit salad that is high in phytochemicals.

6 List ingredients you would use to make a rainbow vegetable salad that is high in phytochemicals.

TAKING IT FURTHER

7 Research and prepare a recipe for making a probiotic food such as yoghurt.

Nutritional requirements throughout the life cycle

All people need the same basic nutrients to maintain life and health. However, the amounts of nutrients required change as we grow and develop, passing from one stage of the human life cycle to the next.

Pregnancy

During pregnancy, the baby is growing and developing rapidly. The mother's body is also changing to accommodate for the baby's growth and to prepare the body for lactation. Pregnancy requires extra:

- protein for the growth of new tissue
- calcium for the formation and strength of 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.

A weight gain of 10–13 kilograms is normal during pregnancy. Eating a balanced diet consisting of nutrient-rich foods, rather than energy-dense foods, should help to prevent excess weight gain. Alcohol and smoking should be avoided during pregnancy, as they can affect the baby's development.



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Figure 4.11 Pregnancy

Infancy (0–2 years)

From a newborn to a toddler who is learning to walk and talk, the most growth and development in life occurs in the first year of life.

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

After this period, while milk is still necessary, the baby requires extra iron and vitamin C. Milk is low in both. In addition, as the baby becomes more active, more energy-giving foods are required. Iron-enriched rice baby cereal is usually the first food introduced to babies, followed by puréed fruits and vegetables and later puréed meat mixtures.

Babies are weaned off breast or formula milk around the age of one and towards drinking cow or soy milk. Low-fat milks should be avoided for children under 2, as they lack the essential fatty acids required for their growth and development.



iStock/Getty Images Plus/lostinbids

Figure 4.12 Infancy

Childhood (2–11 years)

During this period, children grow steadily and become more active. As a result, children require:

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

It is important that children learn to appreciate a variety of foods during this stage and to establish good eating habits that they will carry into adulthood. It is best to avoid foods rich in fat and sugars, which could contribute to tooth decay and childhood obesity.



iStock/Getty Images Plus/baona

Figure 4.13 Childhood

Adolescence (12–18 years)

During adolescence, teenagers undergo puberty, resulting in growth and development. Many are also active in sports.

Adolescents require:

- energy for active lifestyle
- protein for growth
- calcium for strong bones
- iron, particularly for girls because of menstruation.



iStock/Getty Images Plus/rbv

Figure 4.14 Adolescence

Adulthood

As the body has stopped growing by this stage, the requirements for some nutrients decrease in adults. A reduction in kilojoule intake is 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 health conditions such as obesity and heart disease. Drinking alcohol in moderation and maintaining fibre intake also helps to prevent health issues in later life.



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Figure 4.15 Adulthood



Shutterstock.com/Ajay Bhaskar

Figure 4.16 Late adulthood

Late adulthood

As adults get older, they usually move more slowly and become less active. They can also have a reduced appetite. It is also at this stage where years of poor food habits can result in health conditions such as type 2 diabetes.

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
- high in iron, to prevent anaemia.

FOOD IN FOCUS

MEET THE FAMILY!

PURPOSE

Investigate nutritional requirements throughout the life cycle.

Michael and Ellen are in their late thirties. They both work full-time, although Ellen will soon be on leave as she is pregnant with her third child. They have two other children, Lucas who is 14 and Sienna who is six. Both children enjoy participating in sporting teams on weekends. Michael and Ellen love watching them as does Grandma Marie who is in her late sixties.

ACTIVITIES

1 Investigate the nutritional needs of each family member using the guide in Table 4.6 on page 134.
2 Present your findings in a report. Try to include visuals to highlight your findings. For each member of the family:
   - **a** Identify their current life-cycle stage.
   - **b** Describe the characteristics of the life stage.
   - **c** Outline the nutritional requirements of the life stage.
   - **d** Explain the importance of meeting the nutritional requirements.
   - **e** Suggest foods that will assist in meeting their nutritional requirements.

HANDS-ON

WHAT ARE YOUR NUTRITIONAL REQUIREMENTS?

Nutrient Reference Values for Australia and New Zealand

PURPOSE

Investigate the nutritional requirements for your age and gender.

ACTIVITY

Follow the Nutrient Reference Values for Australia and New Zealand weblink to determine how much of the following nutrients you require daily.

- Energy (kJ)
- Protein (g)
- Fat (g)
- Dietary fibre (g)
- Water (L)
- Calcium (mg)
- Iron (mg)
- Sodium (mg)

UNIT REVIEW

LOOKING BACK

1 Outline why alcohol and smoking be avoided during pregnancy.
2 Explain why breast milk is preferred for infants.
3 Why is full-cream milk required for children under 2 years of age?
4 Identify two stages in life where most growth occurs.
5 Identify some health issues that can occur in adulthood.

FOR YOU TO DO

6 Copy and complete the summary table.

Life span	Nutritional requirements	Justification
Pregnancy		
	Protein Calcium Iron Vitamin C	
Childhood		
		Growth Puberty Menstruation
	Limiting alcohol Fibre Reducing energy intake	
		Osteoporosis Anaemia

TAKING IT FURTHER

7 Organise a visit to the local childcare centre/ nursing home or retirement village.
Investigate, by interviewing staff, how they meet the nutritional requirements of their students or residents.
Possible questions include:
- What meals are served at the centre?
- Are meals prepared at the centre, and if so by whom?
- When and where are meals served?
- What are some typical meals?
- Are any foods or methods of cooking restricted? Why?
- Does the centre have food and nutrition policies?

You could even prepare a thank-you treat for the staff and students/residents, such as a nut-free biscuit, muffin or slice, but make sure you discuss this first with management.

Planning nutritious meals

When planning nutritious meals for the whole family it is important to prepare something suitable to meet the specific needs of each group. Make sure to include a variety of nutritious foods from all the food groups. Make fruits, vegetables, grains, dairy and protein foods part of daily meals and snacks. Also, limit added sugars, saturated fat and sodium.

Healthy eating can fit all tastes and traditions and can be affordable, too. A lifetime of healthy eating can help prevent health problems such as obesity, heart disease, type 2 diabetes and some types of cancer. Think of every meal as an opportunity to make a healthy choice.

HANDS-ON

PLANNING NUTRITIOUS MEALS

PURPOSE

Plan nutritious meals to meet the needs of different age groups.

Table 4.6 Recommended minimum serves from the five food groups for various groups

Age/population group	Vegetables and legumes/beans	Fruit	Grain (cereal) foods[a]	Lean meats and alternatives[b]	Milk, yoghurt, cheese and alternatives[c]
Boys					
2–3	2.5	1.0	4.0	1.0	1.5
4–8	4.5	1.5	4.0	1.5	2.0
9–11	5.0	2.0	5.0	2.5	2.5
12–13	5.5	2.0	6.0	2.5	3.5
14–18	5.5	2.0	7.0	2.5	3.5
Girls					
2–3	2.5	1.0	4.0	1.0	1.5
4–8	4.5	1.5	4.0	1.5	1.5
9–11	5.0	2.0	4.0	2.5	3.0
12–13	5.0	2.0	5.0	2.5	3.5
14–18	5.0	2.0	7.0	2.5	3.5
Pregnant	5.0	2.0	8.0	3.5	3.5
Breastfeeding	5.5	2.0	9.0	2.5	4.0
Men					
19–50	6.0	2.0	6.0	3.0	2.5
51–70	5.5	2.0	6.0	2.5	2.5
70+	5.0	2.0	4.5	2.5	3.5
Women					
19–50	5.0	2.0	6.0	2.5	2.5
51–70	5.0	2.0	4.0	2.0	4.0
70+	5.0	2.0	3.0	2.0	4.0
Pregnant	5.0	2.0	8.5	3.5	2.5
Breastfeeding	7.5	2.0	9.0	2.5	2.5

(a) Grain (cereal) foods, mostly wholegrain and/or high-fibre cereal varieties.

(b) Lean meats and poultry, fish, eggs, tofu, nuts and seeds, and legumes/beans.

(c) Milk, yoghurt, cheese and/or alternatives, mostly reduced fat.

Source: Australian Institute of Health and Welfare 2018. Nutrition across the life stages. Creative Commons BY 3.0 (CC BY 3.0) licence

>

Table 4.7 Serve size of foods within the five food groups

Food group	Serve size
Vegetables and legumes/beans	75 g (½ cup) cooked green or Brassica or cruciferous vegetables 75 g (½ cup) cooked orange vegetables 75 g (½ cup) cooked dried or canned beans, chickpeas or lentils, no added salt 75 g (1 cup) raw green leafy vegetables 75 g starchy vegetables (for example, ½ medium potato, or equivalent of sweet potato, taro, sweet corn or cassava) 75 g other vegetables (for example, 1 medium tomato)
Fruit	150 g (1 piece) of medium-sized fruit (for example, apple, banana, orange, pear) 150 g (2 pieces) of small fruit (for example, apricots, kiwi fruit, plums) 150 g (1 cup) diced, cooked or canned fruit[a] 125 mL (½ cup) 100% fruit juice[a][b] 30 g dried fruit[a][b] (for example, 4 dried apricot halves, 1½ tablespoons of sultanas)
Grain (cereal) foods, mostly wholegrain and/or high-fibre cereal varieties	1 slice of bread or ½ a medium roll or flat bread (40 g) ½ cup cooked rice, pasta, noodles, barley, buckwheat, semolina, polenta, bulgur or quinoa (75–120 g) ½ cup cooked porridge (120 g), ⅔ cup wheat cereal flakes (30 g) or ¼ cup muesli (30 g) 3 crispbreads (35 g) 1 crumpet (60 g) or 1 small English muffin or scone (35 g) ¼ cup flour (30 g)
Lean meats and poultry, fish, eggs, tofu, nuts and seeds, and legumes/beans	65 g cooked lean red meats (for example, beef, lamb, pork, venison or kangaroo) or ½ cup of lean mince, 2 small chops 2 slices of roast meat (about 90–100 g raw weight) 80 g cooked poultry (about 100 g raw weight) (for example, chicken, turkey) 100 g cooked fish fillet (about 115 g raw weight) or 1 small can of fish, no added salt, not in brine 2 large eggs (120 g) 1 cup (150 g) cooked dried beans, lentils, chickpeas, split peas, or canned beans 170 g tofu 30 g nuts or seeds or nut/seed paste, no added salt[b]
Milk, yoghurt, cheese and/or alternatives, mostly reduced fat	1 cup (250 mL) milk – fresh, UHT long life or reconstituted powdered ½ cup (120 mL) evaporated unsweetened milk ¾ cup (200 g) yoghurt 40 g (2 slices or 4 x 3 x 2 cm piece) hard cheese (for example, cheddar) ½ cup (120 g) ricotta cheese 1 cup (250 mL) soy, rice or other cereal drink with at least 100 mg of added calcium per 100 mL

(a) Preferably with no added sugar.

(b) Only to be used occasionally as a substitute for other foods in the group.

Source: Australian Institute of Health and Welfare 2018. Nutrition across the life stages. Creative Commons BY 3.0 (CC BY 3.0) licence

ACTIVITY

1. Pair up and plan a day's nutritious meals for a particular age group and gender of your choice or one allocated to you by your teacher.
2. Copy Table 4.8, then fill in the age group and gender.
3. Complete the last row of the table from the information provided in Tables 4.6 and 4.7.
4. Fill in the remainder of the table with meals for your group, making sure to count the number of serves of each food group each meal provides, to reach the total in the bottom row. You may need to divide recipe ingredients to achieve one serve. Remember that drinks are also included.

   Note 1: You can have nil or half serves at meals and specify ingredients not found in Table 4.7.

   Note 2: Use the recipes in the book to help plan your meals.

5 Make sure you have met your total number of serves for each group.

Table 4.8 Meals for one day for (age group) (gender)

Meal	Menu	Number of serves					
		Vegetables	Fruit	Grain	Meat, etc.	Dairy, etc.	Other (specify)
Breakfast							
Snack							
Lunch							
Snack							
Dinner	Creamy tuna pasta Lettuce and tomato salad Water	2	0	1	1	1	Dressing
Snack							
Total number of serves							

Sample meal plans
Nutrition across the life stages

Factors that influence food habits

The key driver for eating is, of course, hunger, but what we choose to eat is not determined solely by physical needs. The term 'eating habits' (or 'food habits') refers to why and how people eat, which foods they eat, and with whom they eat, as well as the ways people obtain, store, use and discard food. Being aware of the factors that influence what and how much you eat can help you to make informed eating choices.

Tradition and culture

What are your family traditions?

Our cultural background strongly impacts on food habits. For instance, Italians enjoy pasta dishes, expresso coffee, olives, and cured meats such as salami. Chinese people eat steamed rice with their meals, drink green tea, and prefer stir-fry or steamed foods over baked foods. In our multicultural society, the foods of different cultural groups are influencing the food habits of Australians.

Traditions can stem from cultural, family or societal influences. It is traditional for many people in Australia to eat Anzac biscuits on Anzac Day, enjoy popcorn at the movies, and eat meat pies or sausage rolls at football games. It is also traditional to celebrate most special occasions with a cake. For some families, it may be a tradition to eat out once a week or to prepare a particular dish for certain occasions, such as roast dinner on Sundays or a trifle for Christmas. Often these traditions have been passed down through generations.



Shutterstock.com/Spica_pic

Figure 4.17 Mochi is a traditional Japanese cake made of rice paste that is usually prepared for New Year's Eve.

Religion

Religions can influence food habits. For example:

- Jewish people do not consume meat and milk in the same meal.
- Jewish people and Muslims do not eat any pork products.
- Hindus do not eat beef, and many are vegetarian.
- Many Buddhists are vegetarian.
- Many Christians do not eat meat on Good Friday.
- Muslims break their fast during Ramadan by eating a date.

Economic situation

The financial state of a country impacts on the foods available to its people. When countries are in poor economic conditions due to high levels of unemployment, poverty, conflict or disasters, people may only be able to afford very basic staple foods, such as grains and pulses, and they may even need to reduce the number of meals they consume.

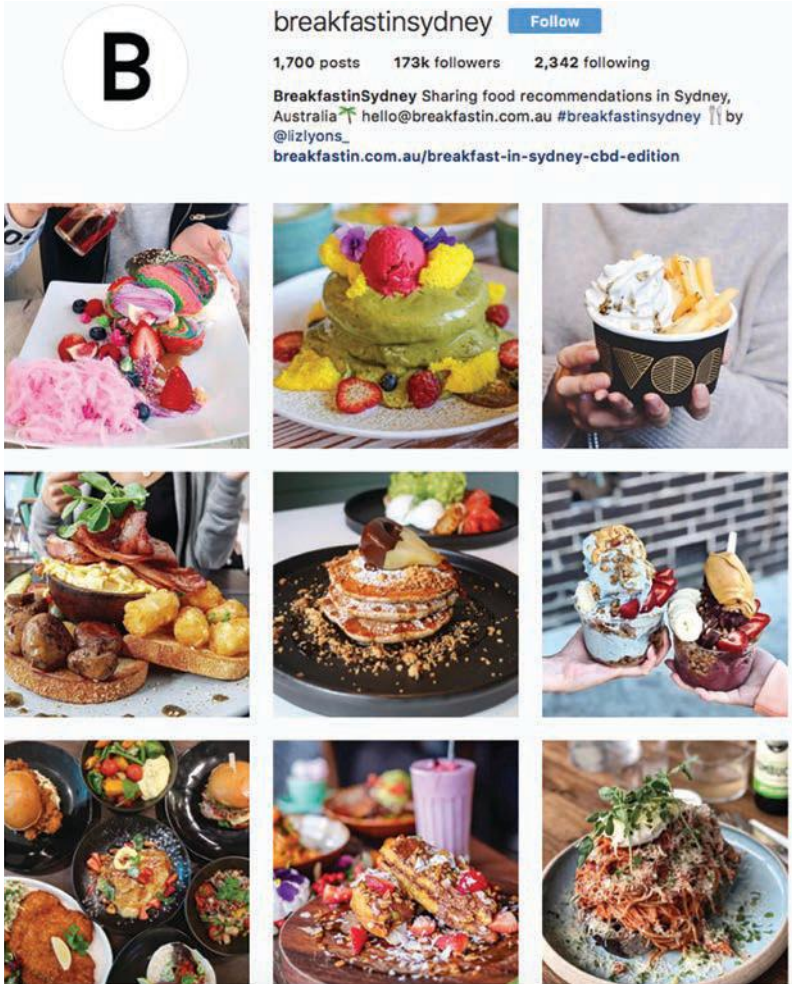
Even though most Australians can afford to eat three meals a day, economics still influences food habits. Those who have higher incomes have more options in regards to purchasing foods and how often and where they eat out. Those on more limited incomes, such as tertiary students and the aged, are more reliant on selecting inexpensive cuts of meats, cheaper ingredients and less expensive venues when eating out. Good nutrition knowledge is particularly important when selecting nutritious foods with limited funds.

The media

Television, newspapers, magazines, radio, billboards, direct mail and the internet are mediums (singular form of media) used to communicate information to the public. Advertisers cleverly use the media to promote their products and services. In recent years, social media has become a very effective means of transmitting information.

The media can influence food habits because it is via the media that we learn of:

- new recipes
- new ways to prepare food
- new food products
- places to eat
- food specials/promotions
- current health issues
- new diets/food trends.



Breakfast In

Figure 4.18 Breakfast in Sydney is a popular Instagram account for food recommendations. It shows what and where to enjoy brunch, particularly for a special occasion or when wanting to try new trends.

FOOD IN FOCUS

FOOD TRADITIONS AND HABITS

PURPOSE

Read the quotes on food traditions below and investigate factors affecting food habits.

Our food traditions are the vital ties that hold us together

Our food traditions

Marilyn Annecchini, co-owner of Italian restaurant Pilu

Initially as a young child waking up before dawn to help [my Italian family make bottles of tomato sauce] wasn't something I looked forward to but it was non-negotiable. My grandparents grew the tomatoes; aunties, uncles and cousins all had jobs, from washing tomatoes to building the fire for the large drum that held the filled bottles. ... It wasn't until I had a family of my own, though, that I really understood the importance of this tradition and now I look forward to it every year. My 95-year-old grandmother is still actively involved and it remains a wonderful day which reunites all the generations of our family.



Fairfax Syndication/Jesse Marlow

Figure 4.19 A common tradition for Australians of Italian heritage is to get together to make and bottle passata (tomato purée).

Lisa Goldberg, co-author of the *Monday Morning Cooking Club* books

To me, Friday night dinner is a huge part of what it means to be Jewish. Every Friday, everyone gathers around the table and we reconnect over food. It's a non-negotiable tradition in most families, and it certainly is in ours.

Hannah Green, co-owner of Etta Dining

I grew up on a farm on the coast near Port Macquarie ... Our food rituals as a family growing up involved eating oysters, plucked and shucked straight out of their hessian sacks, and gorging on loads of local school prawns, sold by local fishermen out of the back of their truck. We'd boil them in seawater and Dad would fashion some kind of sauce from mayonnaise, Worcestershire sauce or whatever else he felt like. Even now over Christmas, I organise more oysters than anyone would think sane, and we always get through them. Breakfast on summer holidays often involves cooking bacon on the BBQ, then throwing oysters on until their shells pop.

Chef Jerry Mai, Vietnamese restaurants Pho Nom and Annam

To have the house full of people, eating together and celebrating the [Lunar] New Year in abundance, is something I had as a child and I want to pass that on.

Melissa Leong, journalist

Growing up in a Singaporean Chinese family, for me food is almost the primary means of communication between family members ...

This Lunar New Year past, I happened to miss the customary reunion dinner held on the eve, where symbolic foods are shared to prophesize a fortunate New Year; noodles for longevity, dumplings for wealth, fish for prosperity. ... It felt sad not to be sharing in the usual festivities with family. It was an emotional response that surprised me.

Source: Adapted from Leong, M 2018, 'Our food traditions are the vital ties that hold us together', sbs.com.au, 23 March

ACTIVITIES

1. Identify the media source of this article.
2. Which religions can you identify from the article.
3. Identify the cultures in this article that celebrate the Lunar New Year.
4. Explain why noodles, dumplings and fish are traditionally served on the eve of the Lunar New Year.
5. Assess the benefits of making homemade tomato sauce.
6. Design and write up your own special sauce recipe to serve with seafood.

Food consumption and impacts on health

Over the last few decades there have been some significant changes in Australian food consumption which have impacted on our health.

Food consumption patterns

The Australian Government and other organisations collect data regarding the types of foods Australians consume and how much they spend on these foods. They often compare data to the past. Recent findings show that Australians:

- do not consume enough of the five food groups (i.e. vegetables, fruit, grains, meat and alternatives, and dairy products and alternatives)
- consume too much sugar, saturated fat and sodium (salt)
- consume too much food that is high in energy and low in nutrients, including alcohol
- obtain about one-third of our energy from discretionary foods, such confectionery, cakes, chocolate, pastries and ice-cream.

Generally, Australians are getting enough of the key nutrients iron and calcium, but intakes for adolescent girls and women over 50 years need to improve. Nearly all Australians, however, do not eat the recommended number of five daily serves of vegetables and, from the teenage years and beyond, most are not meeting the recommended number for serves of dairy. Intake of discretionary foods has reduced in recent years, but these foods are still generally consumed in quantities that provide more sugar, salt, fat and energy than the body needs. These foods include soft drinks, fruit and vegetable juices and drinks, cordials, cakes and muffins, sweet biscuits, processed meats, butter, chocolate, condiments and confectionery.

FOOD IN FOCUS

HOW DO AUSTRALIANS COMPARE ACROSS THE LIFE STAGES?

PURPOSE

Examine food consumption patterns in Australia.

Table 4.9 Males: food consumption from 2 to 71+ years

2–3	4–8	9–13	14–18	19–30	31–50	51–70	71 and over
Five food groups – mean intake against the recommended serves							
Vegetables ✗	Vegetables ✗	Vegetables ✗	Vegetables ✗	Vegetables ✗	Vegetables ✗	Vegetables ✗	Vegetables ✗
Fruit ✓	Fruit ✓	Fruit ✗	Fruit ✗	Fruit ✗	Fruit ✗	Fruit ✗	Fruit ✗
Grains ✗	Grains ✓	Grains (9–11) ✓ Grains (12–13) ✗	Grains ✗	Grains ✗	Grains ✗	Grains ✗	Grains ✗
Meat ✗	Meat ✗	Meat ✗	Meat ✗	Meat ✗	Meat ✗	Meat ✗	Meat ✗
Dairy ✓	Dairy ✗	Dairy ✗	Dairy ✗	Dairy ✗	Dairy ✗	Dairy ✗	Dairy ✗
Discretionary food – proportion (%) of energy from discretionary foods (broad recommendation is to limit intake)							
29	39	39	41	36	37	35	36
Added sugars – proportion (%) of energy from added sugars (broad recommendation is to limit intake)							
8.4	11	11	13	11	9.4	7.8	8.5
Saturated and trans fats – proportion (%) of energy from saturated and trans fats (recommended less than 10% for ages 14 and over)							
14	14	14	13	12	12	12	12

>

2–3	4–8	9–13	14–18	19–30	31–50	51–70	71 and over
Sodium – mean intake (mg/day) as a proportion (%) of the adequate intake level (upper end of range)							
379	373	332	339	339	317	273	241
Calcium – proportion (%) of the population with intakes less than the estimated average requirement							
0.7	11	46 (9–11) 67 (12–13)	71	44	43	63	90
Iron – proportion (%) of the population with intakes less than the estimated average requirement							
8.5	5.9	3.3	8.3	2.2	2.2	2.8	3.1
Dietary folate equivalents – proportion (%) of the population with intakes less than the estimated average requirement							
–	–	0.4	1.2	2.8	2.3	2.5	1.6
Iodine – proportion (%) of the population with intakes less than the estimated average requirement							
0.1	0.1	0.3	0.8	1.5	1.6	3.5	4.2
Fibre – mean intake (g/day) as a proportion (%) of the adequate intake level							
121	112	95	80	81	83	83	84
Physical activity – proportion (%) of the population meeting the physical activity recommendations							
73	46	19	17	57	47	41	25
Overweight and obesity – proportion (%) of the population who are overweight or obese							
24	20	32	33	55	73	81	76

Source: Australian Institute of Health and Welfare 2018. Nutrition across the life stages. Creative Commons BY 3.0 (CC BY 3.0) licence

Table 4.10 Females: food consumption from 2 to 71+ years

2–3	4–8	9–13	14–18	19–30	31–50	51–70	71 and over
Five food groups – mean intake against the recommended serves							
Vegetables ✗	Vegetables ✗	Vegetables ✗	Vegetables ✗	Vegetables ✗	Vegetables ✗	Vegetables ✗	Vegetables ✗
Fruit ✓	Fruit ✓	Fruit ✗	Fruit ✗	Fruit ✗	Fruit ✗	Fruit ✗	Fruit ✗
Grains ✗	Grains ✓	Grains (9–11) ✓ Grains (12–13) ✗	Grains ✗	Grains ✗	Grains ✗	Grains ✗	Grains ✗
Meat ✗	Meat ✗	Meat ✗	Meat ✗	Meat ✗	Meat ✗	Meat ✗	Meat ✗
Dairy ✓	Dairy ✗	Dairy ✗	Dairy ✗	Dairy ✗	Dairy ✗	Dairy ✗	Dairy ✗
Discretionary food – proportion (%) of energy from discretionary foods (broad recommendation is to limit intake)							
32	36	40	41	35	33	31	32
Added sugars – proportion (%) of energy from added sugars (broad recommendation is to limit intake)							
8.1	11	12	12	11	8.9	7.7	8.0
Saturated and trans fats – proportion (%) of energy from saturated and trans fats (recommended less than 10% for ages 14 and over)							
14	13	14	14	13	12	12	12
Sodium – mean intake (mg/day) as a proportion (%) of the adequate intake level (upper end of range)							
362	311	283	261	250	234	214	193

2–3	4–8	9–13	14–18	19–30	31–50	51–70	71 and over
Calcium – proportion (%) of the population with intakes less than the estimated average requirement							
2.4	21	54 (9–11) 84 (12–13)	90	71	67	91	94
Iron – proportion (%) of the population with intakes less than the estimated average requirement							
15	11	11	40	38	38	5.0	6.7
Dietary folate equivalents – proportion (%) of the population with intakes less than the estimated average requirement							
–	–	1.2	7.9	11	11	7.6	6.1
Iodine – proportion (%) of the population with intakes less than the estimated average requirement							
0.5	0.3	0.5	6.4	12	9.0	11	9.2
Fibre – mean intake (g/day) as a proportion (%) of the adequate intake level							
109	96	96	88	81	83	89	84
Physical activity – proportion (%) of the population meeting the physical activity recommendations							
78	40	15	15	52	47	38	20
Overweight and obesity – proportion (%) of the population who are overweight or obese							
18	25	26	28	38	56	67	67

Source: Australian Institute of Health and Welfare 2018. Nutrition across the life stages. Creative Commons BY 3.0 (CC BY 3.0) licence

ACTIVITIES

Answer the following questions, first for males and then repeat for females.

1 Which age groups are not meeting the recommended serves of the five food groups for:
   - vegetables?
   - grains?
   - meat?
   - dairy?

2 Which age group consumes the most:
   - energy from discretionary foods?
   - added sugar?
   - saturated and trans fats?
   - sodium?

3 Which age group consumes the least amount of:
   - calcium?
   - iron?

4 Which group is the most overweight?

5 Which group least meets their physical activity recommendations? Explain why.

Impact on health

The type of food we consume is vital to our health and wellbeing. Good nutrition contributes to quality of life, helps maintain healthy body weight, protects against infection, and reduces the risk of chronic conditions and premature death.

Data demonstrates that obesity is the most common nutritional problem in Australia, and statistics indicate that, as a nation, Australians' weight is continuing to steadily rise. Obesity is a risk factor for chronic conditions such as type 2 diabetes and cardiovascular disease. Both are leading causes of death in Australia, with cardiovascular disease the number one killer of Australians.

Decreased consumption of red meats has led to increases in anaemia levels, particularly in the aged and among vegetarians and vegans. There has also been a link detected between food additives used in prepared foods and the rising level of allergies.

The government uses health data to devise and revise nutrition policies and strategies to help improve the health outcomes of Australians. An example is the Australian Dietary Guidelines (see pages 148–9).

FOOD IN FOCUS

FOOD CONSUMPTION PATTERNS

PURPOSE

Examine food consumption patterns in Australia and discuss the impact this has on nutrient intake and health.



Getty Images/E+/fcafotodigital

Figure 4.20 Despite the variety available and their contribution to health, most Australians do not eat enough vegetables.

The verdict is in – Australians have terrible eating habits.

There's no denying it – Australians love food. In fact, we love it so much that we are certainly developing an obesity problem. However, despite what many reports may have you believe, Australia is not the most obese nation in the world, nor do we rank second. In fact, Australia doesn't even make it into the top 20. The United States does, at number 18. The top 9 are Pacific island nations, with Kuwait coming in at number 10. This is great news for us, but it certainly doesn't mean that Australian eating habits are as good as they could be.

A recent report by the Australian Bureau of Statistics and a major study from market research company Mintel paint a rather varied picture of the way we Australians consume our food.

The bad news

While we definitely have highly varied diets, one of the most concerning aspects of Australian eating habits is the amount we consume of junk food and highly processed snacks, also known as 'discretionary food'. In fact, a whopping 35% of our average energy intake falls into this category.

Even worse, children aged between 14 and 18 get 41% of their total energy intake from discretionary food. It's easy to blame the parents, but there is a lot of advertising pressure on kids to eat poorly, and not a lot of positive nutrition advice out there.

Every 24 hours, we consume over 3 kg of food on average. This is higher than the global average. Now, it may not be that bad if that contained a large percentage of vegetables and fruits and was otherwise nutritionally balanced. However, as the statistics above show, a lot of our energy intake comes via poor nutrition.

One of the most alarming statistics about Australian eating habits is that less than 7% of us meet our daily vegetable intake requirements. While 75% get some vegetables every single day, it's very disappointing to see only around 1 in 15 of us eat a sufficiently healthy amount of vegetables.

Vegetables have a huge amount of benefits and, consumed sensibly, basically zero downsides. This seems to be one of the easiest areas for Australian eating habits to improve.

Just over half of us (54%) get our recommended daily intake of fruit. Like vegetables, this could be easily improved, especially as many fruits are a great snack food that can easily be consumed on the go.

The good news

It's not all bleak. While our existing habits could do with a lot of improvement, there are quite a few positive trends pervading the landscape of Australian eating habits.

...

The good news is, more Australians are opting for vegetables and fruit over meat. In fact, 14% of Australians are making a concerted effort to avoid red meat in their diet. For a country with such a strong beef industry, this is an impressive statistic.

The trend is definitely growing. Compared to a year ago, 10% more Australians are opting to get their protein requirements from dairy and plants rather than meat.

...

Eating on the go is increasingly popular among Australian consumers. Between 2012 and 2016, the number of food and drink

>

products hitting the market that claim to be able to be consumed 'on the go' increased by 55%.

This strongly reflects how Australians are choosing to eat. As our lives become increasingly busy, set mealtimes are getting rarer and rarer. Most consumers want to be able to eat while performing other tasks – often with a single hand.

While this statistic may be bad news for those of us that wish people would focus more on what they're putting in their body, it does have one ray of hope – fruit can easily be eaten on the go.

...

Processed food is becoming increasingly unpopular as more Australians start to get an idea of the disappointing level of nutrition in these food products ...

Products such as sourdough bread are becoming more popular, as well as traditionally made pasta. One of the driving factors for this trend may be trust. When you know exactly what's going into your food, it's far easier to put it into your mouth.

...

Around 20% of the food that Australians buy is thrown in the trash. However ... most Australians are making sincere efforts to reverse that trend.

...

Sure, our current eating habits aren't very good. However, the future is bright. As more Australians seek to learn about what they're putting into their bodies and make the effort to pursue positive change, we'll hopefully see a healthier future.

Source: Adapted from Australian Institute of Personal Trainers 2017, 'The verdict is in – Australians have terrible eating habits', www.aipt.edu.au, 3 July

ACTIVITIES

1 From the article, outline on a copy of the following table one statistic regarding Australia's consumption of the foods listed in the first column. Assess the possible nutrient and health impacts of the current consumption of these foods on individuals.

Food	Statistical evidence	Nutritional impact Potential excess or deficiency of one or more nutrients	Health impacts
Discretionary food			
Vegetables			
Fruit			
Total daily food intake			
Meat			

2 What are the advantages and disadvantages of eating foods 'on the go'?

3 Why is there a trend towards preparing traditional foods such as sourdough bread?

Undernutrition and overnutrition

Undernutrition results when someone has a deficiency of one or more nutrients. Overnutrition results when we consume an excess of one or more nutrients.

Despite most Australians having access to high-quality fresh foods, most do not consume these in the recommended amounts. Death from lack of food is a rare occurrence, but poor health as a direct consequence of inadequate or incorrect nutrition is well-documented.

Anaemia

An iron deficiency can cause anaemia.

When iron enters red blood cells, it combines with protein to form haemoglobin. The role of haemoglobin is to carry oxygen to body tissue. The symptoms of anaemia are:

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

Demand for iron increases during growth stages in life, but some certain groups are at risk of anaemia, including:

- menstruating women
- vegetarians and vegans
- people on fad diets
- athletes
- the frail.

Anaemia can be prevented by regularly consuming foods rich in iron such as red meat, iron-enriched cereal products, nuts and legumes, fresh fruits and vegetables.



iStock/Getty Images Plus/CharlieAJA

Figure 4.21 Iron-rich foods can help prevent anaemia.

Osteoporosis

A calcium deficiency can cause osteoporosis. This is a condition where the bones have become porous because calcium in the bones is lost more quickly than it can be replaced. Bones that are easily fractured, loss of height, pain, and a curvature of the spine result from osteoporosis.

The group most at risk of developing osteoporosis are females over 50 years. It is also becoming a health issue for aged men.

It is essential to consume adequate intakes of calcium throughout life in order to develop and maintain strong bones and help slow down bone loss as we age. It is also important to attain adequate supplies of vitamin D, which is responsible for absorbing calcium into bones. Regular physical activity throughout life also helps to keep bones strong and healthy.

Sources of calcium include milk, cheese and yoghurt, fish with edible bones (sardines, canned salmon), nuts, soybeans, tofu, and green leafy vegetables (except spinach which, although calcium-rich, also contains oxalates that prevent calcium absorption).

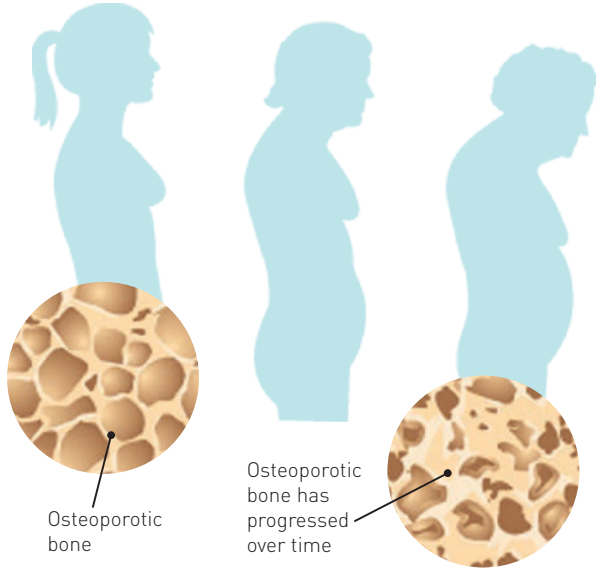


Figure 4.22 An osteoporotic bone looks like honeycomb and can lead to frequent breakages. Over time the spine may compress to form a hump.

Type 2 diabetes

A person who has diabetes has too much glucose in the blood and not enough of the hormone insulin.

The role of insulin is to move glucose from the blood into the body cells, where the glucose is converted to energy.

Diabetes can be life-threatening. It can also contribute to heart disease, kidney disease, eye disease and infections.

About 10 per cent of all diabetics have type 1 diabetes. For an unknown reason the pancreas stops producing insulin and daily insulin monitoring and injections are required. It usually occurs in young people. Middle-aged and older people are mostly affected by type 2 diabetes because their pancreas produces less insulin or the insulin is blocked due to excess fat. The incidence of type 2 diabetes is also increasing among young people.

Unlike type 1 diabetes, type 2 can be prevented or delayed by:

- limiting sugar, as it quickly releases energy as glucose into the blood
- choosing low-GI foods (wholegrain products, fruits, vegetables, legumes) that slowly release energy as glucose into the blood
- maintaining a healthy body weight
- eating regular meals.

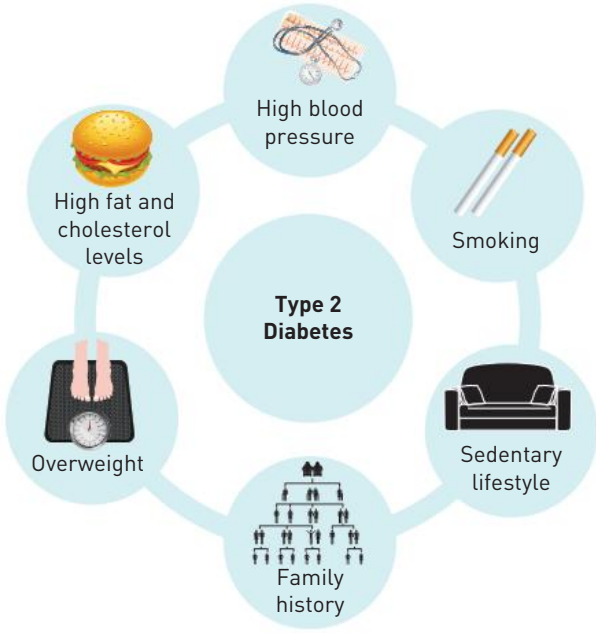


Figure 4.23 Risk factors for type 2 diabetes

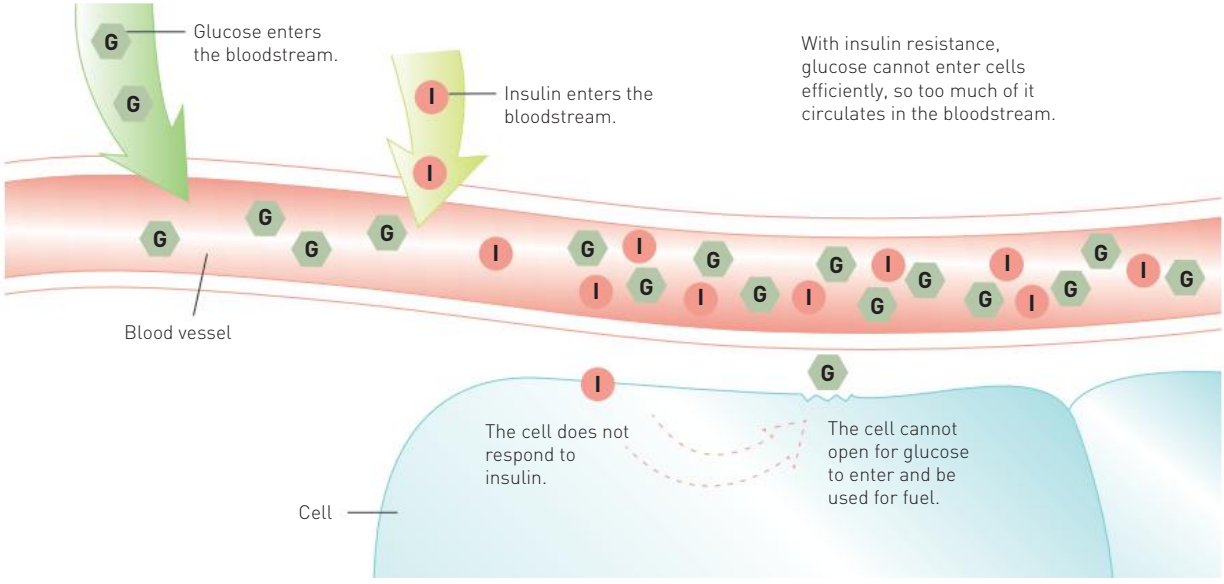


Figure 4.24 When there is insufficient insulin, cells cannot easily obtain glucose to provide energy for the body to work efficiently.

Obesity

'Overweight' and 'obesity' refer to excess body weight.

Rates of overweight and obesity are continuing to rise in Australia. Obesity increases the risk of heart disease, diabetes and gall bladder disease.

The main factors influencing overweight and obesity are poor diet and inadequate physical activity. This is because weight gain occurs when the energy (kilojoules) we consume from food and drink is greater than the energy used in activities and at rest. Excess kilojoules are converted to fat which is deposited on the body, mostly under the skin. To lose weight, we need to consume fewer kilojoules than we use for energy so that the fat stores can be converted to energy.

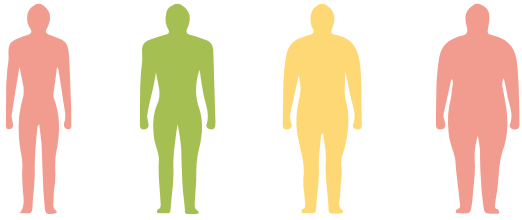
The Body Mass Index (BMI) is an internationally recognised standard for classifying overweight and obesity in adults. It is not suitable, however, for growing children and adolescents, pregnant woman or some ethnic groups.

BMI is calculated by dividing the weight in kilograms by the square of the height in metres. Obesity is often defined as having a BMI of over 30.

BMI calculator

For example, the calculation of BMI for an adult who is 1.8 m tall and weighs 90 kg is as follows:

$$\text{BMI} = \frac{90\,\text{kg}}{(1.8\,\text{m} \times 1.8\,\text{m})} = 27.8$$



BMI less than 18.50	Underweight
BMI 18.50–24.99	Healthy weight
BMI 25.00–29.99	Overweight
BMI 30 or more	Obese

Figure 4.25 BMI chart for adults

Excess body weight can also be measured using waist circumference. A higher waist measurement is associated with an increased risk of chronic disease. According to the World Health Organization guidelines, Caucasian men and women with a waist circumference of greater than or equal to 94 cm and 80 cm, respectively, are at increased risk of chronic disease.

To prevent weight gain it is best to:

- eat fresh fruit and vegetables, as they are low in kilojoules and are filling
- reduce sugar intake, as sugars digest faster than starches and are therefore less filling
- drink more water, as it has no kilojoules
- eat more wholegrain and high-fibre products, because they make you feel full
- reduce high-fat foods and high-fat cooking methods, as fat is high in kilojoules
- avoid alcohol, as it high in kilojoules
- keep active to use up kilojoules.



iStock/Getty Images Plus/Nastco

Figure 4.26 One gram of alcohol provides 29 kilojoules of energy. Lack of exercise and too many kilojoules from food and alcohol may contribute to excess weight.



Shutterstock.com/ MANDY GODBEHEAR

Figure 4.27 Choose a physical activity you enjoy so that it becomes a regular part of your healthy lifestyle.

Cardiovascular disease

'Cardiovascular disease' refers to diseases and conditions involving the heart and blood vessels. This includes coronary heart disease, stroke and heart failure.

Cardiovascular disease occurs when arteries become narrow from fatty cholesterol-containing deposits that cling to the artery walls. This plaque impedes blood flow, and a blood clot in the area can be fatal.

As we get older our arteries become narrower, but certain risk factors can dangerously accelerate the process. These include:

- poor diet
- smoking
- high cholesterol
- high blood pressure
- diabetes
- obesity
- an inactive lifestyle
- genetics and family history.

Many of these risk factors can be prevented by consuming diets that are:

- low in saturated fat – this helps to reduce cholesterol levels and kilojoule intake
- low in salt – salt can raise blood pressure
- high in fibre – to help lower cholesterol levels and kilojoule intake
- high in omega-3 fatty acids – to help lower levels of fat in the blood.

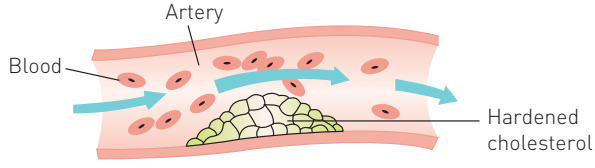


Figure 4.28 Hardened cholesterol deposits in the arteries limit blood flow to the heart. A blood clot could seal off the artery and cause a heart attack.

SUSIE BURRELL:
NUTRITIONIST AND DIETITIAN


Fairfax Syndication/Edwina Pickles

Susie Burrell is one of Australia's leading dietitians. As a dietitian she is qualified to assess a patient's nutritional needs and develop a practical food plan to help meet their needs. Dietitians also educate and promote good nutrition to the wider community.

After completing her degree in Nutrition & Dietetics and Psychology, Susie worked as a community dietitian at Fairfield Hospital and then specialised in childhood obesity at The Children's Hospital. She also became a sports dietitian for elite sporting teams such as the St George Illawarra Dragons and the South African Blue Bulls.

In 2004 she became a media spokesperson for the Dietitians Association of Australia and made regular appearances in both print and television media commenting on all areas of diet, weight loss and nutrition. Susie has since written several books promoting a healthy diet and lifestyle. She also writes nutrition articles for various magazines and has her own Facebook page and blog. She regularly appears on television and radio and she is a dietitian consultant for organisations including Australian Bananas.

At her clinic, Susie sees clients where she specialises in advising on weight loss, insulin resistance – a symptom of type 2 diabetes – and irritable bowel syndrome. Susie also sees children for weight issues and fussy eating.

Source: www.susieburrell.com.au



ACTIVITIES

1. Describe the role of a dietitian.
2. What role did Susie Burrell have at Fairfield Hospital?
3. Suggest why sporting teams may employ a dietitian.
4. Identify the types of media Susie uses to promote good nutrition.
5. Identify the medical conditions that Susie provides advice on for clients who attend her clinic.
6. Search for a nutrition article written by Susie Burrell. Write a paragraph summarising her nutritional advice.

UNIT REVIEW

LOOKING BACK

1 Copy and complete the following table.

Health condition	Dietary cause	One prevention strategy
	Too much glucose in blood	
Obesity		
		Increase red meat consumption
	Calcium deficiency	
		Reduce saturated fat intake

FOR YOU TO DO

2 Reply to these questions from a nutrition blog.

a My husband has a sweet tooth but has type 2 diabetes and is overweight. What suggestions do you have for desserts?

b My elderly father finds it difficult to eat grilled or fried steak because his teeth have become brittle. A blood test showed he is lacking iron. What other foods can I provide him to increase his iron levels?

c I'm pregnant, but I don't like drinking milk. How can I use milk in my cooking to ensure my calcium intake is adequate?

TAKING IT FURTHER

3 Produce a fact sheet to inform Australians of one health condition caused by overnutrition or undernutrition. You should:

- name the condition
- identify whether it is due to undernutrition or overnutrition
- explain why it is a health issue
- outline its symptoms
- briefly describe its causes
- explain how it can be prevented and/or controlled
- outline the role of three health professionals or support groups that can assist a client with the condition
- include and justify a recipe that can be used to help prevent or control the condition.

Food guides that promote healthy eating

Australian Dietary Guidelines

The Australian Dietary Guidelines devised and promoted by the Australian Government provide up-to-date advice about the amount and kinds of foods that we need to eat for health and wellbeing. The recommendations are based on scientific evidence from good-quality research.

People who follow the dietary patterns recommended in the Guidelines should get enough of the nutrients essential for good health and also reduce their risk of developing chronic health problems such as heart disease, type 2 diabetes, some cancers and obesity.

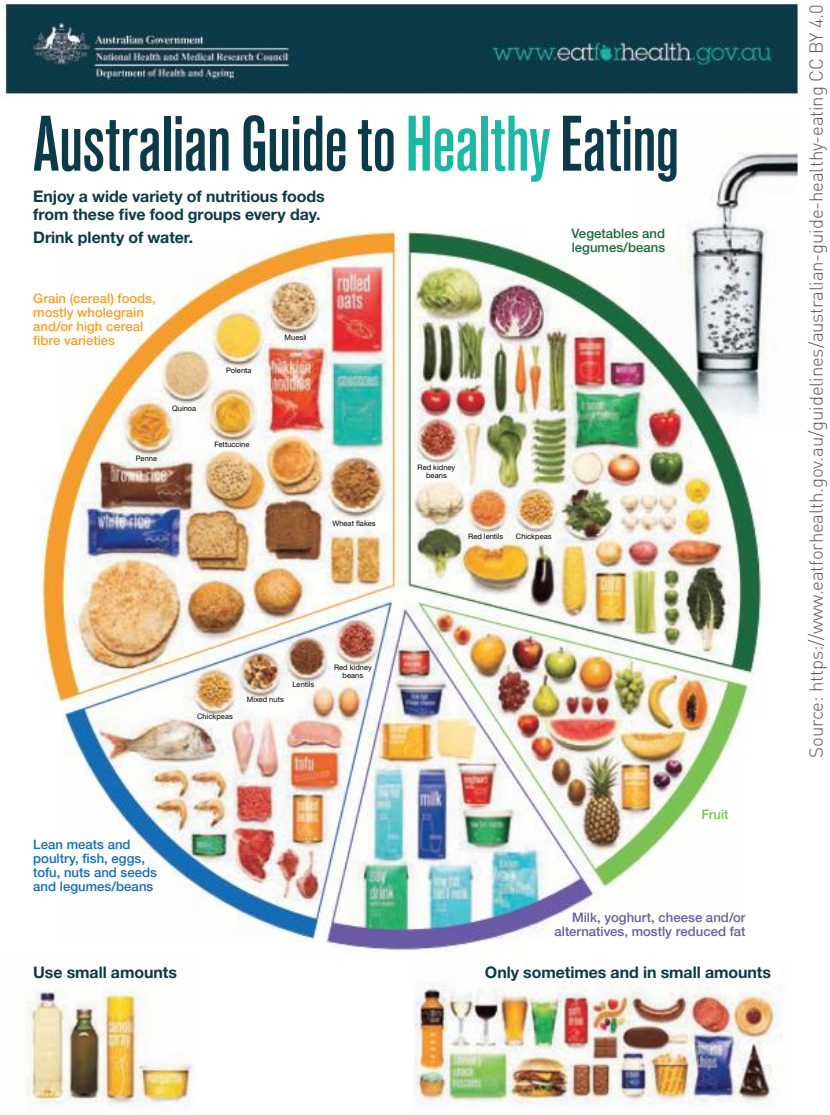
Table 4.11 Australian Dietary Guidelines

Guideline 1	To achieve and maintain a healthy weight, be physically active and choose amounts of nutritious food and drinks to meet your energy needs. • Children and adolescents should eat sufficient nutritious foods to grow and develop normally. They should be physically active every day and their growth should be checked regularly. • Older people should eat nutritious foods and keep physically active to help maintain muscle strength and a healthy weight.
Guideline 2	Enjoy a wide variety of nutritious foods from these five groups every day: • Plenty of vegetables, including different types and colours, and legumes/beans • Fruit • Grain (cereal) foods, mostly wholegrain and/or high cereal fibre varieties, such as breads, cereals, rice, pasta, noodles, polenta, couscous, oats, quinoa and barley • Lean meats and poultry, fish, eggs, tofu, nuts and seeds, and legumes/beans • Milk, yoghurt, cheese and/or their alternatives, mostly reduced fat (reduced fat milks are not suitable for children under the age of 2 years) And drink plenty of water.

>>

Guideline 3	Limit intake of foods containing saturated fat, added salt, added sugars and alcohol. a Limit intake of foods high in saturated fat such as many biscuits, cakes, pastries, pies, processed meats, commercial burgers, pizza, fried foods, potato chips, crisps and other savoury snacks. • Replace high-fat foods which contain predominantly saturated fats such as butter, cream, cooking margarine, coconut and palm oil with foods which contain predominantly polyunsaturated and monounsaturated fats such as oils, spreads, nut butters/pastes and avocado. • Low-fat diets are not suitable for children under the age of 2 years.
	b Limit intake of foods and drinks containing added salt. • Read labels to choose lower sodium options among similar foods. • Do not add salt to foods in cooking or at the table.
	c Limit intake of foods and drinks containing added sugars such as confectionery, sugar-sweetened soft drinks and cordials, fruit drinks, vitamin waters, energy and sports drinks.
	d If you choose to drink alcohol, limit intake. For women who are pregnant, planning a pregnancy or breastfeeding, not drinking alcohol is the safest option.
Guideline 4	Encourage, support and promote breastfeeding.
Guideline 5	Care for your food; prepare and store it safely.

Source: National Health and Medical Research Council CC BY 3.0 Australia



Source: https://www.eatforhealth.gov.au/guidelines/australian-guide-healthy-eating CC BY 4.0

Figure 4.29 Australian Guide to Healthy Eating

Australian Guide to Healthy Eating

The Australian Guide to Healthy Eating is the national Australian food selection guide. The guide is consistent with the Australian Dietary Guidelines and visually represents the recommended proportion for consumption from each of the five food groups each day. Following a dietary pattern in these recommended proportions will provide enough of the nutrients essential for good health.

Healthy Eating Pyramid

Developed by Nutrition Australia, the Healthy Eating Pyramid is another guide based on the Australian Dietary Guidelines. It is a simple visual guide to the types and proportions of food that should be eaten each day to promote good health.

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Figure 4.30 Healthy Eating Pyramid

Nutrition labelling

By law, all manufactured packaged foods, but not fresh foods, must carry a nutrition information panel. This is a useful guide to compare similar processed foods for their kilojoules, protein, fat, sodium and sugar content.

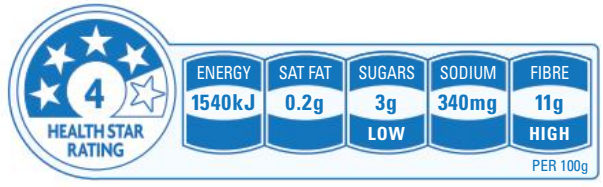
Nutrition information			
Typical values	Per 100g	Per 30g serving	% based on GDA for women
Energy	2325 kJ 559 kcal	698 kJ 168 kcal	 8.4%
Protein	0.2g	trace	trace
Carbohydrate of which sugars	46.3g 46.3g	13.9g 13.9g	6.0% 15.4%
Fat of which saturates	38.8g 25.4g	11.6g 7.6g	16.6% 38.0%
Fibre	nil	nil	nil
Salt of which sodium	trace trace	trace trace	trace trace

Alamy Stock Photo/studiomode

Figure 4.31 Nutrition information panel

Health Star Rating

The federal government also developed a 5-star health rating system for front labels of manufactured foods. The more stars, the healthier the choice. The number of stars is based on the energy a product provides (in kilojoules) and levels of saturated fat and sugar, which incur a lower rating; and fibre, fruit, vegetables, nuts and legumes, which incur a higher rating.



Health Star Rating/ Commonwealth of Australia

Figure 4.32 Health Star Rating system

Healthy School Canteen – traffic light system

The National Healthy School Canteen Guidelines' traffic light system identifies foods as either green, amber or red, depending on their nutritional value, energy density, and levels of saturated fat, added sugar, salt and fibre.

FOOD IN FOCUS

AUSTRALIAN GUIDE TO HEALTHY EATING

PURPOSE

Assess food guides that promote healthy eating.

ACTIVITIES

Examine the Australian Guide to Healthy Eating and answer the following questions.

1 Identify five foods in the following groups:
   - grains
   - fruit
   - meat
   - vegetables
   - milk.
2 Identify the largest segment in the circle shown in Figure 4.29.
3 Identify five foods you should only have sometimes.
4 Identify which one of the five groups would provide the most:
   - protein
   - fibre
   - calcium
   - carbohydrates.
5 What should Australians drink plenty of each day?
6 Plan a healthy breakfast using foods from four to five food groups.
7 Plan a healthy main meal for a cold day using four or five food groups.
8 Choose one of the healthy eating guides and write an article for your school newsletter or local paper to educate the community.

Promoting good nutrition

Good nutrition is an important part of leading a healthy lifestyle. Combined with physical activity, your diet can help you to reach and maintain a healthy weight, reduce your risk of chronic diseases (such as heart disease), and improve your overall wellbeing. Campaigns run on national, state and local levels provide resources and support to help promote the importance of implementing good nutritional practices.

Government

Diet-related health conditions cost the government a lot of money. Many beds in public hospitals, for instance, are taken up with people suffering from chronic diet-related conditions such as type 2 diabetes and heart disease. Even when these patients go home, follow-up treatment can be costly for both the government and the patient.

As diet-related health conditions are largely preventable, and it is more cost-effective to promote good health strategies than to treat the long-term results of unhealthy practices, the government has an agenda of 'prevention rather than cure'. All levels of government are helping to promote health and nutrition through strategies such as:

- the Australian Dietary Guidelines
- the Australian Guide to Healthy Eating
- food labelling legislation (e.g. nutrition panels, fast-food kilojoule content)
- guidelines for advertising foods to children
- campaigns (e.g. promoting the consumption of more vegetables, healthy school canteens and increased exercise)
- funding to advisory groups and other organisations for health promotion initiatives such as free health checks
- maintaining health records.

FOOD IN FOCUS

MAKE HEALTHY NORMAL

PURPOSE

Investigate government initiatives in health promotion.

Make Healthy Normal

Make Healthy Normal is a NSW government initiative through NSW Health. Its website provides digital tools, information and free programs that encourage people of all ages to make small lifestyle changes that can make a big difference to their nutritional status and health, preventing the risk of obesity and chronic diseases. For instance, simply by going for a walk at lunch time, we can easily increase our level of physical fitness and burn up excess kilojoules.

The Make Healthy Normal website provides simple-to-use tools and recipes that allow you to plan weekly meals. It also provides lots of useful tips for healthy eating, including when you eat out, are too busy to cook, feel like snacking or are on a tight budget. It also helps you to choose smaller food portions and include more fruit, vegetables and water in your diet.

ACTIVITIES

Visit the Make Healthy Normal website to answer the questions below.

1 Outline tips for:
   - healthy snacking
   - drinking more water.
2 Using the online tool, how much of each food group should you be eating?
3 Using the available recipes, select a recipe for each of the following meals you would like to prepare.
   - Breakfast
   - Lunch
   - Dinner

Food manufacturers

In order to maintain and increase revenue, food manufacturers often respond to demands for healthier foods by modifying their product ranges so that they are lower in fat, sugar, salt or kilojoules, or by making them higher in fibre, protein, vitamins and minerals. Sometimes, manufacturers introduce completely new ingredients in their products. For instance, high-protein plant foods such as quinoa and chia are being used in a variety of manufactured foods.

Food manufacturers commonly promote health claims on their packaging. While there are strict government guidelines regarding such claims, consumers still need to read labels carefully. This is because, while a product can legally claim to be low-fat, manufacturers may have increased the sugar content to improve the product's flavour.



Mark Fergus

Figure 4.33 Manufacturers often extend their product lines with healthier food versions.



Shutterstock.com/Keith Homan

Figure 4.34 Superfoods are increasingly being included in manufactured foods.

FOOD IN FOCUS

ETHICS AND NUTRITION

PURPOSE

Analyse the role and ethical responsibilities various groups in society play in promoting good nutrition.

Food label tricks you are falling for

Many 'Big Food' companies are trying to capitalise on the popularity of the 'health' movement.

Products are often packaged to 'look' healthy, when in reality the ingredients look more like what you'd find in the less healthy sections of the supermarket!

Here are some common food labelling tricks, and how to avoid them:

Serve size

Imagine this: you're at the shops, and pick up the yoghurt that looks like it is one individual serving size. You check out the label, and 'per serve', it's looking pretty good overall ... Fast forward to when you get home, and as you're enjoying this delicious product, you notice that the serving size, and the quantity of serves in the packet don't quite match up. Somehow, in this 150 g pack there are actually 1.3 serves! ...

Many companies use this technique to make their products appear lower in fat, sugar, salt and calories overall, even though it is unlikely that that 0.3 of a serve will be left for later.

How to combat? Always check out the per 100 g column, as this is where you'll always have a consistent quantity to compare against.

Baked not fried

Baking something at home will often be healthier than if you fry it but this is not necessarily the case with packaged food. Quite often, the product will be placed on the tray, sprayed generously with oil (quite often, a poorer quality vegetable oil), then baked... so it might as well have been fried.

How to combat? This claim is often on the front of the label. Check the ingredients and nutrition panel to see if suitable. If not, place it back on the shelf.

No added sugar

Just because sugar hasn't been added, it doesn't necessarily mean the food or drink will be low in sugar. Fruit juice is a fantastic example of this. One cup of orange juice has the contents of approximately 6 oranges, meaning the sugar content of them too, but without the fibre in most instances. Some fruit juices can have just as much, if not more, sugar as soft drinks.

How to combat? Minimise consumption of fruit juice. Choose water as your drink of choice, and if looking for a juice, choose one that is made predominantly from vegetables.

Fat free

In the past, claims that a food item was 'fat-free' may have been thought to mean a healthier choice; however, these days that is not the only thing we need to consider. Many fat-free foods will have salt and sugar added to up the flavour, meaning they are not so healthy anyway.

How to combat? Choose foods that are as minimally processed as possible, with fat coming from healthy sources, such as olive oil, nuts and seeds.

'Natural' looking packaging

Many companies use packaging to encourage consumers to pick up their products under the perception they're healthy, simply because of the colour and style of their packaging.

How to combat? Always flip the product over and check out the nutrition information panel and ingredients list before determining if it's a healthy choice or not.

Light/Lite

Claims of 'light' or 'lite' can refer to flavour, texture, colour – nearly anything. For example, some olive oils state this on the front. It will often mean that that product is actually lighter in colour.

How to combat? If this claim it present, there is very likely a better option available that is less processed.

>

Alternative names for fat, sugar and salt

Fruit juice. Milk solids. Sodium from garlic. Also known as sugar, fat and salt. More complex names for these nutrients are often used, and are easy to confuse or miss if uninformed.

How to combat? It's a good idea to get familiar with some of the common ones, and remember: if a source of fat, sugar or salt is the first ingredient, it's the main ingredient by weight, so there may be a better option available to choose.

Natural. All natural. Organic. Gluten free.

Just because something is 'natural', organic or gluten free, it does not mean that food is not high in certain nutrients we want to avoid. A cake, biscuit, bar or chip that is natural/organic/gluten free is still a cake, biscuit, bar or chip; these foods are 'sometimes' foods, and aren't recommended for daily consumption for most individuals, despite their other claims. Sugar, in particular, is still often a main ingredient in these products, which often include muesli bars and raw treats or desserts.

How to combat? As above, check out the nutrition information panel and ingredients list before determining if it's a healthy choice or not. If you'd like to include it purely because you enjoy it... well, go right ahead! But remember to include it in moderation.

Multi-grain

Most of us have probably seen the wraps and breads in the supermarket with 'Multi-grain' emblazoned across the front. How often, though, do these products look like they're made from refined flour, with just some seeds and/or grains added in? This is because they often are. As such, this claim is not something which should be used to help you choose a healthier option, as it is highly likely the product is made from highly refined flour, is low in fibre and (often) high in unhealthy fats or salt. This means it is not as healthy as it may initially seem.

How to combat? Flip the product over and look at the ingredients list to see what the product is made from, then have a look at the nutrient information panel, with a particular focus on fibre content.

Source: Adapted from McLeod, C 2017, '10 food label tricks you are falling for', https://blog.goodnessmebox.com, 26 June

ACTIVITIES

1. List seven words food manufacturers may use on the front of their packages to promote the nutritional value of their products.
2. What could be a possible health issue from continually eating more than the recommended serving size of a food product?
3. Explain why we should miminise the consumption of fruit juice.
4. Explain why a fat-free food product may not be healthy.
5. Under Australian law, all packaged foods must carry a nutrition information panel. Why does the author suggest we use this panel when assessing food claims?
6. Do you think food manufacturers are ethical in promoting nutrition on food labels? Justify your response.

Health professionals

A health professional is someone who provides preventive, curative, promotional or rehabilitative health care to people, families or communities. They include doctors, dietitians, nutritionists, pharmacists and nurses. Commonly, they work together for the best possible care. For instance, a doctor may refer a patient with high blood sugar levels to a dietitian to assist the patient to modify their diet in order to reduce the risk of type 2 diabetes.

VICKY GRAHAM:
ACCREDITED EXERCISE PHYSIOLOGIST


iStock/Getty Images Plus/flyfloor

Vicky Graham says she became an accredited exercise physiologist (AEP) because 'I wanted to help people improve their health and quality of life and I believe moving more and eating well are simple strategies that people can use to do this.'

As an AEP she uses exercise and movement to help people prevent and manage chronic diseases and injuries such as:

- obesity
- cardiovascular disease
- diabetes
- osteoporosis
- arthritis
- mental health conditions
- cancer
- chronic pain
- post-surgical rehabilitation (e.g. hip/knee replacement)
- neuromuscular exercise therapy (multiple sclerosis, cerebral palsy, Parkinson's disease).

Her clients range from children to the elderly, with many being referred by other health professionals such as doctors and dietitians. Indeed, in the case management of a patient, it is common for health professionals such as dietitians and AEPs to work together.

'Many clients have never seen an AEP before and [are] not sure how we can help them. I use simple language and break down lifestyle changes into small sustainable steps.' Over time, her clients see success, such as sleeping better, feeling less pain and enjoying life.

In addition to prescribing exercises, AEPs offer health modification counselling such as tips on how to eat more healthily and many are also trained in sports nutrition. To be an AEP, you need to be university qualified and to have undergone an accreditation process. Many AEPs are dual qualified as personal trainers, dietitians, nutritionists or physiotherapists.

Source: Adapted from http://exerciseright.com.au/meet-aeps/



ACTIVITIES

1 Briefly **describe** the role of an AEP.
2 **Identify** health conditions related to nutritional intake that AEPs can assist with, manage and prevent.
3 Suggest two suitable snack foods an AEP could recommend to a client who needs to reduce their weight.
4 Undertake research to **explain** the difference between AEPs, personal trainers, dietitians, nutritionists and physiotherapists.
5 **Investigate** the career pathways needed to become a AEP.

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Chapter review

LOOKING BACK

Select the correct answer in the following multiple-choice questions.

1 Which nutrient contributes to growth?
- **A** Protein
- **B** Lipids
- **C** Carbohydrates
- **D** Water

2 What are proteins made from?
- **A** Fatty acids
- **B** Amino acids
- **C** Sodium
- **D** Glucose

3 Which vitamin is mostly found in citrus fruits and capsicum?
- **A** Vitamin C
- **B** Vitamin D
- **C** Vitamin A
- **D** Folate

4 Which is not a function of fibre?
- **A** Aids digestion
- **B** Makes you feel full
- **C** Helps reduce cholesterol
- **D** Gives you energy

5 Which condition is a form of undernutrition?
- **A** Type 2 diabetes
- **B** Anaemia
- **C** Obesity
- **D** Cardiovascular disease

6 Which mineral helps to carry oxygen to cells?
- **A** Fluoride
- **B** Sodium
- **C** Iron
- **D** Water

7 Where are you most likely to find phytochemicals?
- **A** Meat
- **B** Eggs
- **C** Milk
- **D** Vegetables

FOR YOU TO DO

8 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 and coconut cream.
- **a** Identify the ingredients rich in protein.
- **b** Identify the ingredients rich in carbohydrates.
- **c** Identify the ingredients rich in lipids.
- **d** Identify the ingredients rich in sodium.

9 Research indicates that adults do not drink enough water, preferring to have soft drinks, coffee and alcohol as beverages. Develop strategies for increasing the amount of water that adults drink per day.

10 Plan a two-course healthy dinner menu for a pregnant woman. Justify your food selection.

11 Evidence suggests that teenagers want healthier food choices.
- **a** Plan 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 Australian Guide to Healthy Eating in selecting your lunch menu.

12 **a** Explain why controlling weight is included in the Australian Dietary Guidelines.
- **b** Suggest five food choices that may assist to control weight.

TAKING IT FURTHER

13 Survey your classmates to find their family food traditions. Assess what factors may influence food traditions.

14 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. Write up the results of your research in a report.

Recipe	Techniques	Equipment	Dietary considerations
'Otai (Polynesian watermelon drink) 	Mashing Measuring liquids	Potato masher Large bowl Sharp knife or grater Chopping board Teaspoons Glasses (to serve)	Vg DF GF
Chocolate bliss balls 	Shaping	Food processor Measuring cup Plate Teaspoon Tray Baking paper	Vg DF
Popcorn chicken 	Coating	Sharp knife Mixing bowls (2) Beater Large frypan Wooden spoon Tongs Paper towel	DF
Sweet potato fries 	Slicing Roasting	Mixing bowls (2) Tea towel Baking tray Baking paper Serving bowl Small bowl for dipping sauce	V GF VgO
Greek salad 	Tossing Salad dressing	Sharp knife Chopping board Small bowl Large bowl Wooden spoon	V GF VgO
Creamy tuna pasta bake 	Boiling Baking	Large saucepan Colander Non-stick frypan Sharp knife Wooden spoon Ovenproof dishes (2) Cheese grater Can opener Serving bowls (2)	
Lebanese rice pudding 	Boiling Simmering	Measuring cup Tablespoon Teaspoon Wooden spoon Saucepan Heatproof serving bowls (2)	
Beef quesadillas 	Seasoning Shallow frying	Large non-stick frypan Wooden spoon Heatproof bowl Spatula Baking tray Foil Sharp knife	

KEY

V = vegetarian VO = vegetarian option GF = gluten free Vg = vegan VgO = vegan option DF = dairy free

Note: All recipes are nut free.

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RECIPE



Mark Fergus

ʻOtai (Polynesian watermelon drink)

Prepare this traditional refreshing South Pacific fruit drink and demonstrate your food presentation skills.

Preparation time 10 minutes **Cooking time** nil **Serves** 2

INGREDIENTS

2 cups cold seedless watermelon, cubed
⅓ cup cold crushed pineapple
⅓ cup cold canned coconut milk
⅓ cup cold coconut water
1 teaspoon lime juice
1 teaspoon sugar (optional)

TIP: Chill everything well the night before you make the drink.

METHOD

1. Place watermelon in a large bowl and mash with potato masher until mostly liquid but still some small chunks remain. You could grate the watermelon instead.
2. Add in the rest of the ingredients, mash a little more and stir well.
3. Chill and then serve over ice.
4. Decorate.

QUESTIONS

1. List the equipment required to prepare the recipe.
2. Discuss the process of accurately measuring liquid ingredients.
3. Identify the technique used to crush the watermelon.
4. Suggest other fruits that could be used to make this drink.
5. Describe how you could present and decorate the drink.
6. Identity ingredients in the recipe high in:
   - water
   - carbohydrates
   - lipids
   - fibre
   - phytochemicals.

RECIPE

Chocolate bliss balls

Prepare this high-carbohydrate snack suitable for children to make and take to school.

Preparation time 10 minutes **Cooking time** nil **Serves** 10

INGREDIENTS

1 cup rolled oats
2 tablespoons cocoa powder
12 pitted fresh dates
1 cup desiccated coconut
2 tablespoons maple syrup
½ cup desiccated coconut, extra to coat

METHOD

1. Place rolled oats, cocoa powder, dates, 1 cup desiccated coconut and maple syrup in a food processor.
2. Process until almost smooth and well combined.
3. Place ½ cup desiccated coconut on a plate.
4. Roll heaped tablespoonsful of mixture into balls. Roll in coconut to evenly coat.
5. Place on a lined tray in the fridge for 1 hour or until set.
6. Store in an airtight container in the fridge for up to 2 weeks.

QUESTIONS

1. Identify how you will address personal hygiene before you start to prepare this recipe.
2. Name the ingredients that are high in carbohydrates in this recipe.
3. Name the ingredients that are rich in the carbohydrate starch.
4. Explain why the storage container should be airtight.
5. Discuss the reasons why this recipe is suitable for a children's lunch-box snack.



Mark Fergus

9780170442855

RECIPE



Popcorn chicken

Teenagers love fast food. Prepare this high-protein, shallow-fried fast food.

Preparation time 10 minutes **Cooking time** 10 minutes **Serves** 2

INGREDIENTS

- 1½ cups flour
- ½ teaspoon garlic powder
- ¼ teaspoon salt
- ½ teaspoon dried oregano
- 1 teaspoon sweet paprika
- ¼ teaspoon ground black pepper
- 1 egg
- 1 tablespoon lemon juice
- 1 chicken breast
- Oil for shallow-frying

METHOD

1. Chop chicken into cubes.
2. Mix flour, garlic powder, oregano, sweet paprika, salt and black pepper together in a bowl.
3. Beat egg and lemon juice together in a separate bowl.
4. Heat 2–3 cm of oil in a large frypan over medium heat.
5. Dip the chicken pieces into the flour mixture, then the egg mixture, and again into the flour mixture.
6. Test the oil to make sure it is hot enough. (Drop a small amount of flour in the hot oil and if it sizzles it is ready. Alternatively, use the end of a wooden spoon and see if the oil starts bubbling around the spoon.)
7. Place around 8 pieces of chicken into the hot oil. Cook until golden brown, turning over to ensure both sides are cooked (about 6–8 minutes).
8. Remove from the oil and drain on a paper towel-lined plate.
9. Repeat with remaining chicken.

QUESTIONS

1. Name the ingredients that are rich in protein in this recipe.
2. Name the ingredient rich in starch in this recipe.
3. Identify the frying method used for this recipe. Discuss why this method is a healthy choice.
4. Describe how you assess if the oil is hot enough to cook the chicken.
5. Describe safe work practices you would follow when:
   - chopping the chicken
   - frying the chicken.
6. Make a list of reasons why food would need to be coated before cooking.

RECIPE

Sweet potato fries

Prepare this carbohydrate-rich vegetable side dish, or add some cheese and canned beans to make a vegetarian, carbohydrate-rich snack.

Preparation time 10 minutes **Cooking time** 25 minutes **Serves** 2

INGREDIENTS

1 orange sweet potato, scrubbed
2 tablespoons olive oil
1 tablespoon cornflour, semolina or cornmeal
Salt and pepper, to season
Ground spice (such as paprika, cayenne pepper or cumin), to flavour
¼ cup Greek-style yoghurt
1 teaspoon honey
Pinch of ground cinnamon

METHOD

1. Preheat the oven to 220 °C.
2. Slice the sweet potato into equal-size sticks (about 1 cm thick).
3. Rinse in a bowl of water and lay out to dry on a clean tea towel and dry thoroughly. Drying will make them crispy.
4. Place the sweet potato, olive oil, cornflour and spice, as desired, in a bowl, season with salt and pepper, and toss to combine.
5. Lay the fries out on a lined baking tray in a single layer, making sure they do not overlap. Space will prevent steaming the fries.
6. Bake about 25 minutes until golden brown.
7. Meanwhile, combine the yoghurt, honey and cinnamon in a bowl to make a dipping sauce.
8. Cover and refrigerate until needed.
9. Serve the fries with the dipping sauce.

QUESTIONS

1. Determine what personal protective equipment is required to prepare this recipe.
2. Identify the active non-nutrients in sweet potatoes.
3. Suggest toppings for the sweet potatoes that could make the fries a main meal.
4. Suggest other suitable dipping sauces for the fries.
5. Investigate other types of 'fries' available to purchase. Compare the nutritional value of these.



Mark Fergus

9780170442855

RECIPE



Mark Fergus

Greek salad

Food guides encourage vegetable consumption. Prepare this high-fibre, phytochemical-rich classic salad. Serve it with some pita or Lebanese bread, or with chicken or lamb skewers.

Preparation time 10 minutes **Cooking time** nil **Serves** 2

INGREDIENTS

2 firm egg tomatoes
1 Lebanese cucumber
½ red onion
½ red capsicum
100 g kalamata olives
150 g Greek feta

Dressing

¼ cup olive oil
1 tablespoon white vinegar
½ teaspoon dried Greek oregano
Salt and pepper, to season

METHOD

1. Halve tomatoes and cut 4 wedges from each half.
2. Halve cucumber lengthwise and thinly slice.
3. Deseed capsicum and coarsely chop.
4. Quarter onion and cut each quarter into thin wedges.
5. Cube the feta.
6. To make the dressing, place the oil, vinegar and oregano in a small bowl, and stir to combine. Season.
7. Combine the salad ingredients in a large bowl.
8. Drizzle with the dressing and gently toss until combined.

QUESTIONS

1. Identity ingredients in the recipe high in:
   - water
   - carbohydrates
   - proteins
   - lipids
   - water-soluble vitamins
   - fibre
   - phytochemicals.
2. Name three other types of salads and list their key ingredients.
3. Discuss the main role of the salad dressing and state why it should be added just before serving.

RECIPE

Creamy tuna pasta bake

A low-cost family favourite that helps the body to function.

Preparation time 10 minutes **Cooking time** 30 minutes **Serves** 2

INGREDIENTS

200 g shell or spiral pasta
Olive oil
½ onion, diced
1 tablespoon tomato paste
150 mL cream
1 tablespoon fresh herbs (e.g. parsley, chives, basil)
190 g can tuna in oil
½ cup grated tasty cheese
Salt and pepper, to season

METHOD

1. Preheat oven to 190 °C.
2. Cook the pasta in a large saucepan of salted boiling water following packet instructions or until al dente. Drain and return to pan.
3. Meanwhile, heat a little oil in a deep non-stick frypan over medium heat.
4. Add the onion and cook for 4 minutes or until softened.
5. Add the tomato paste and cream, and stir until combined.
6. Stir through the pasta, chopped herbs and tuna, and season.
7. Transfer the mixture to 2 individual ovenproof dishes and sprinkle with cheese.
8. Bake for 15 minutes or until golden on top.

QUESTIONS

1. Name and describe a dish that is a favourite in your household. Explain who prepares the dish and when it is eaten.
2. Identify two ingredients in this recipe that are high in energy.
3. Identify two ingredients in this recipe that help the body to grow and develop.
4. Suggest how the recipe may be modified to incorporate more vegetables.



Mark Fergus

9780170442855

RECIPE



Mark Fergus

Lebanese rice pudding

This traditional dessert is a delicious way to boost calcium intake, and is suitable for pregnant women and elderly people. It is also a good example of how carbohydrates gelatinise.

Preparation time 5 minutes **Cooking time** 30 minutes **Serves** 2

INGREDIENTS

2 cups milk

2 tablespoons sugar (to taste)

¼ cup rice

1 tablespoon cornflour

1 teaspoon orange blossom water

Cinnamon as a garnish

Edible rose petals and silver cachous as a garnish (optional)

METHOD

1. Bring the milk, sugar and rice to a boil and then simmer on a low heat for 20 minutes, or until the rice softens, stirring regularly to avoid clumping.
2. As the rice softens, stir in the orange blossom water and cornflour. Keep cooking and stirring the mixture for another 5 minutes, or until the pudding thickens and is the consistency of yoghurt.
3. Pour it into heatproof serving bowls and let rest for a few minutes, then refrigerate to set.
4. Decorate with cinnamon or edible dried rose petals and silver cachous. Serve chilled.

QUESTIONS

1. Identify the ingredients in the recipe that provide
   - calcium
   - carbohydrates.
2. Describe the physical changes that occur as the rice cooks.
3. Explain the role of the cornflour.
4. Find another recipe for rice pudding from a different culture. Compare and contrast the recipes.

RECIPE

Beef quesadillas

This quick meal provides lots of iron, protein, calcium and energy. These are nutrients required by all age groups.

Preparation time 10 minutes **Cooking time** 25 minutes **Serves** 2

INGREDIENTS

150 g beef mince
¼ cup taco sauce
1 teaspoon taco seasoning
Olive oil spray
4 × 15 cm diameter flour tortillas
1 cup grated mozzarella cheese
Lemon wedges and/or avocado dip

METHOD

1. Spray a large non-stick frypan with olive oil spray and place over high heat.
2. Add the mince and cook, stirring with a wooden spoon to break up any lumps, for 3–5 minutes until it changes colour.
3. Add the taco sauce and taco seasoning and cook, stirring, for 1 minute or until heated through.
4. Remove from heat and transfer to a heatproof bowl.
5. Wipe the frypan with paper towel. Spray with olive oil spray and heat over medium heat.
6. Place 1 tortilla in the pan. Spread half of the mince mixture over the tortilla.
7. Sprinkle half the mozzarella over the meat and then add another tortilla. Use a spatula to press tortilla down.
8. Cook for 1–2 minutes or until golden underneath. Turn and cook a further 1–2 minutes, until golden underneath.
9. Transfer to a baking tray and cover with foil. Place in oven to keep warm.
10. Spray the pan with olive oil and repeat with remaining ingredients.
11. Cut the quesadillas into quarters and serve with a lemon wedge and/or avocado dip.



Mark Fergus

QUESTIONS

1. Identify the culture that has quesadillas as a traditional dish.
2. Develop a recipe for a breakfast quesadilla.
3. How could you incorporate more vegetables into this recipe?
4. Copy and complete the following table.

Nutrient	Ingredient in recipe	Importance to health
Iron		
Protein		
Calcium		
Carbohydrates		

5. Explain the importance of 'seasoning' a recipe.



CHAPTER 5

Food service and catering

FOCUS AREA:

In this chapter, you will investigate the food service and catering industry. You will examine different types of organisations within the industry and learn how they operate to provide their consumers with safe and appealing meals. You will discover the range of career opportunities available in the industry and will have the opportunity to plan and prepare menus and dishes for small- and large-scale catering.

CHAPTER CONTENT

In this chapter you will:

examine food service and catering operations

discuss how food service and catering operations contribute to society

describe
- job opportunities in food service and catering
- safe methods for preserving and storing food

outline
- the rights and responsibilities of food establishment employees and employers, and consumers
- the causes of food deterioration and spoilage

investigate
- the functional properties of food
- menus from different food service and catering operations

explain how food can be preserved

explore what to think about when planning menus

develop or modify a recipe that can be used to cater for a large catering function

design, plan and prepare food for small- and large-scale functions

apply food preservation and storage principles

demonstrate
- knowledge of the correct equipment and techniques to use in food preparation
- how to prepare food safely and hygienically.



Pre-test quiz

RECIPES
- Polka dot biscuits
- Croque madame
- Club sandwich
- Lamb souvlaki
- Buffalo wings
- Ricotta gnocchi
- Poached pears with chocolate sauce
- Rocky road

FOOD FACTS

Do you dine on fast food four times a month? If your answer is yes, then you're an average Australian.

Chicken parmigiana has become a classic Australian dish, despite its Italian American heritage. It is found on many casual dining menus around the country. Traditionally it is served with chips, either under or beside the schnitzel.

Yeast is used for making beer. At the end of the process, the yeast has broken down to form brewer's yeast extract. This is used to make Vegemite.

The antibiotic penicillin is a mould that kills some dangerous infection-causing bacteria.

The white rind/firm skin on brie and camembert cheese is actually white mould that is safe to eat.

The pasteurisation process was named after the French scientist Louis Pasteur, who invented the process in the 1870s. He also invented vaccines to help fight against rabies and cholera.

The *Food Act 2003* (NSW) does not prevent restaurants from providing 'doggy bags'; however, restaurants may elect not to provide containers to customers. Customers can use their own container to take leftover food home.

Fresh kiwi fruit is an excellent marinade to tenderise calamari, as it has an enzyme that can tenderise proteins.

If cooked rice is left in the danger zone of 5–60 °C for a few hours, it can cause food poisoning because the bacteria *Bacillus cereus* in rice multiplies rapidly in warm conditions.

The flat white was 'invented' by Aussie barista Alan Preston in 1985 after being inspired by Italian immigrants who made similar coffee in Queensland.

Food preservation has its roots way back in 12000 BC. Sun drying was used to preserve many foods, while communities in the polar regions covered their foodstuffs with ice to preserve them.

FOOD WORDS

à la carte meaning 'from the card' – a menu that is written with individual prices for dishes

catering the business of providing people with food and drink at a social event or other gathering

curing preserving (meat, fish or an animal skin) by salting, drying or smoking

degustation menu appreciative tasting of various foods and focusing on the senses

employee a person working for another person or business for pay

employer a person or business that employs one or more people, especially for wages or salary

food preservation the process of treating and handling food to stop or slow down food spoilage

food service the preparation, delivery, serving, etc., of ready-to-eat foods

industry a group of manufacturers or businesses that produce a particular kind of goods or services

menu the food available or to be served in a restaurant or at a meal

rancid unpleasant or stale smell or taste, usually affecting fats and oils

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

table d'hôte a menu where multi-course meals with only a few choices are charged at a fixed total price

toxin poisons generated by microorganisms that can cause illness

Food service and catering operations

The food service or catering **industry** comprises those businesses, institutions and companies responsible for any meal prepared outside the home. This industry includes restaurants, cafés, canteens, catering companies, mobile food trucks and many other operations.

Catering involves preparing food for a large number of people, while **food service** involves serving the prepared food to consumers, such as customers, patients, students and clients. Most food service and catering establishments operate to make a profit (monetary gain); however, some exist in order to support people in need by providing important community services, such as feeding the homeless or the frail.

The rise of Indigenous catering operations

There has been a rise in service and catering ventures being operated by Aboriginal and Torres Strait Islander peoples. There has also been an increase in training opportunities for Aboriginal and Torres Strait Islander peoples to attain qualifications recognised by the hospitality industry. Furthermore, mentoring programs in business and leadership are encouraging more Aboriginal and Torres Strait Islander people to start their own business ventures.



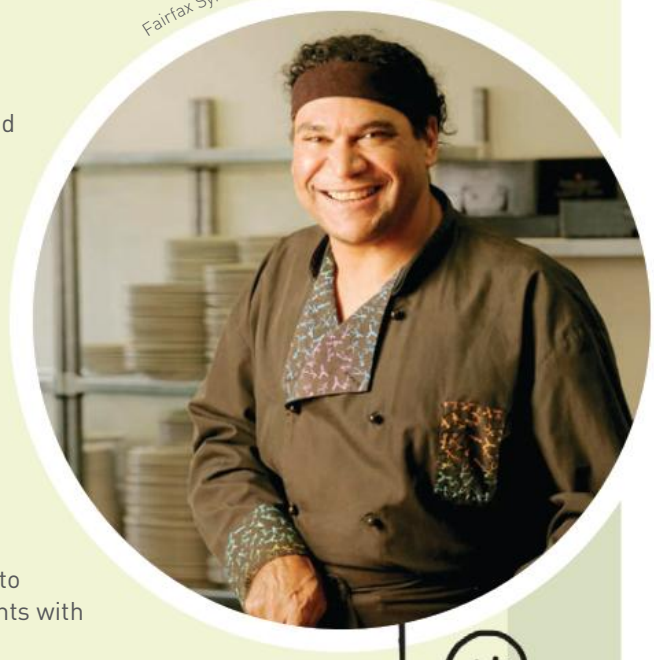
Fairfax Syndication/Ben Rushton



Newspix/Steve Brennan

Figure 5.1 There are an increasing number of hospitality training opportunities for Aboriginal and Torres Strait Islander peoples.

MARK OLIVE: CHEF


Fairfax Syndication/Eddie Jim

Mark Olive, known as 'The Black Olive', is Australia's most celebrated and renowned Indigenous chef. He has been cooking for more than 30 years and his charismatic style and creative approach to food have earned him an esteemed reputation and a large following in Australia and around the world.

Mark learnt to cook the same way that so many of us did – from his family. 'I used to go home to my mother's country, Bundjalung country – there's lots of lemon myrtle out there', he says. 'We'd make scones and biscuits with wattleseed, and that's how I was introduced to it as a kid. I learnt to look around the country I was living on and find my own ingredients.'

Mark trained with a European chef and worked in theatres, universities, health centres, Jewish kitchens preparing kosher food, on film sets and in à la carte restaurants. Later he ran his own restaurant in Sydney and also a catering company in Melbourne where he was able to express his passion for fusing native and Indigenous Australian ingredients with contemporary cooking techniques.

Today, Mark still cooks but he also mentors and educates others. He is in frequent demand both in Australia and around the world to present and appear at food events, to represent Australia's indigenous cuisine. He is also a celebrity chef, hosting cooking, lifestyle and travel shows, such as *The Chefs' Line* and *The Outback Café*.

Source: Adapted from www.blackolive.net.au/mark-olive-bio/ and https://fieldguide.org.au/journal/mark-olive/



ACTIVITIES

1 Describe Mark Olive in one sentence.
2 Outline how Mark learnt his trade.
3 Identify four venues where Mark has cooked in his chef career.
4 Describe Mark's passion.
5 What does Mark do today?
6 How have chefs like Mark Olive changed the profile of Indigenous food knowledge and native ingredients in Australia?
7 Research and write a short biography of another current Aboriginal or Torres Strait Islander chef. Include their achievements and provide examples of their use of native ingredients.

Not-for-profit catering operations

Not-for-profit catering operations work to support a client or cause. They usually do not make a profit from their customers, and if any profits are made they go back into the operation. For example, the primary purpose of a nursing home is to care for its residents; this includes providing them with nutritious meals. Social justice awareness within the community has seen an increasing number of cafés and restaurants operating whose profits go towards helping people who are experiencing a financial or housing crisis or struggling with mental illness.

Typical not-for-profit operations include:

- canteens for schools/colleges, sport and work
- fundraising food stalls
- caterers for:
  - hospitals
  - nursing homes
  - correctional institutions
  - defence services
  - boarding schools
  - childcare centres
  - charities and welfare agencies
  - relief and emergency services.

FOOD IN FOCUS

NOT-FOR-PROFIT CATERING

PURPOSE

Identify a not-for-profit food service and catering operation, and examine an example of its menu.

Meals on Wheels



Alamy Stock Photo/Eyebyte

Figure 5.2 Meals on Wheels is an important community service.

Meals on Wheels provides frail, aged people or people with a disability a nutritious and tasty meal, delivered by volunteers. The service enables people to be independent in their own homes for longer. Most people prefer to live at home, but in many cases they need support to do this.

People may request Meals on Wheels' service themselves, but usually they are referred by a doctor, health-care worker or a family member. When establishing menus, a client's individual needs are taken into consideration – their culture, diet, religion, medical condition, physical ability and personal taste. Their meals are nutritious and help to prevent risk of malnutrition.

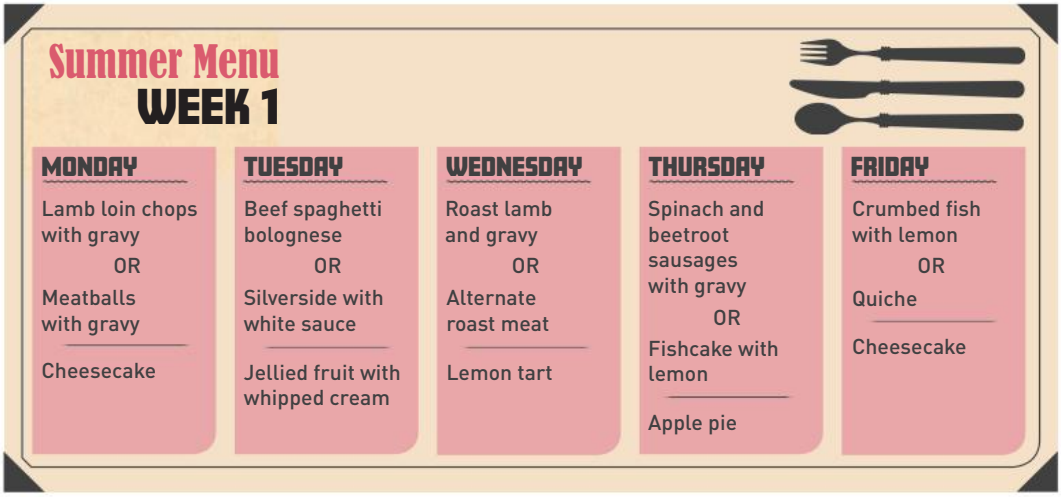
The meals are provided by local food service organisations. Some of these organisations have their own kitchens, while others source the food from catering companies. A coordinator is employed by most organisations to manage the running of the service. Those who have their own kitchens also pay for cooks; however, volunteers often assist the cooks. Each local organisation designs its own menus and many use a four-weekly cyclic/rotation menu.

In NSW, most Meals on Wheels services receive funding from the Australian Government Department of Health to cover administrative costs, and meals are provided at production cost to clients because it is a not-for-profit organisation. Besides preparing and delivering food, volunteers also help clients with food shopping and show them lessons on how to prepare easy, delicious meals for one. Meals on Wheels volunteers are often the only daily point of contact for recipients, serving to decrease their social isolation and assist in monitoring their health and wellbeing.

>

Table 5.1 Meals on Wheels statistics for NSW

Number of Meals on Wheels services	Total clients per day	Total meals per year	Total volunteers	Metropolitan clients	Regional clients	Meal price
190	15 000	4.5 million	35 000	32%	68%	$4.50–$9.00



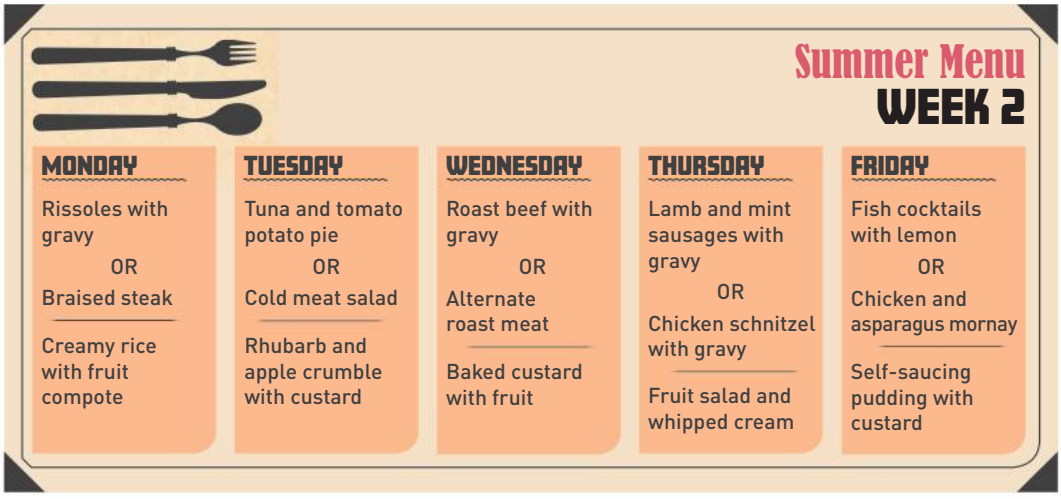


Figure 5.3 Two weeks of a 4-week cyclic/rotation menu

ACTIVITIES

Use the extract, the table and the menu to answer the following questions.

1. Describe the service provided by Meals on Wheels.
2. Identify four factors considered when planning menus for clients of Meals on Wheels.
3. Identify the type of menu shown in Figure 5.3, above.
4. Select one of the meals in Figure 5.3. Explain why the meal would be suitable for elderly clients.
5. How is Meals on Wheels funded?
6. Identify what roles can be undertaken by volunteers at Meals on Wheels.
7. How many clients per day does Meals on Wheels feed?
8. How much do clients pay for a meal?
9. How many people each year volunteer for Meals on Wheels?
10. How many Meals on Wheels organisations exist in NSW?
11. Suggest why Meals on Wheels caters for more clients in regional areas of Australia than in metropolitan areas.

For-profit catering operations

The main goal of for-profit catering operations is to make money for the owners of the business by providing food and beverages to customers. Their operations make up a large part of the food service and catering industry.

Typical profit-making operations include:

- restaurants – fast food, full service
- cafés
- bistros
- bars
- hotels and motels – room service, bar service and restaurants
- function centres (e.g. weddings)
- takeaway stores
- canteens and cafeterias
- food and market stalls
- mobile food trucks
- caterers for:
  - events and functions, such as weddings and conferences
  - transport services, such as airlines and cruises
  - film and television productions.



Alamy Stock Photo/Martin Berry

Figure 5.4 Food trucks like this one are now a big part of the Australian food scene.

The food service and catering industry's contribution to society

Food service and catering establishments contribute much to the economic, cultural and social fabric of Australian society.

Economic contribution

The term 'economic' generally refers to income and money.

The food service and catering industry is one of Australia's largest employers' and the industry continues to grow as more and more meals are consumed outside the home. Indeed, it is the largest employer of teenagers and young adults working in casual positions.

For their work, employees are provided with income to spend in society and therefore contribute to Australia's economic growth. Many food service and catering operations are small businesses, which provide an income for employers, too, and they also help to economically support other small businesses. For instance, restaurants need to purchase ingredients from other suppliers such as butchers and bakers. The trend towards utilising locally produced ingredients in the food service industry for flavour and sustainability reasons not only benefits consumers and the environment, but also Australian farmers and the economy.

Employees have to pay income tax from their wages. Governments use these taxes to fund community services such as education, welfare and health for all Australians. Most profit-making food service and catering organisations also pay taxes on their income, and even collect and pass on tax to the government by including GST (goods and services tax) in their prices.

Social contribution

The food service and catering industry contributes to society in many ways.

Eating venues have become a place for friends, families and colleagues to meet and socialise. This is one reason why cafés have become so popular. They can also offer venues and food to celebrate an event.

The food service and catering industry can assist people in society to save time, and effort and reduce stress. Compared to earlier generations, society today has more working parents, more-flexible working hours, smaller household sizes and more people living in apartments. Despite the expense, it is often easier and more convenient to eat out or order in than to

cook a meal at home. Today, consumers have a larger choice of foods that can be delivered to homes and workplaces, including from à la carte restaurants, and new apartment complexes are generally located in close proximity to food outlets.

Not-for-profit food service organisations make a valuable contribution towards helping those in need in our society. Many charities, welfare agencies and community organisations feed the poor, the frail and the homeless. Local sporting clubs commonly operate canteens to raise money for equipment, and charities and local interest groups hold food stalls to fund community projects.

Cultural contribution

The food service and catering industry has embraced Australia's cultural diversity. There is an abundance of restaurants specialising in different cuisines with Italian, Chinese and Thai among the most popular. Many establishments also offer modern Australian cuisine, where foods from several different cultural groups appear on the menu. Increasingly, these menus are including native bush foods from Aboriginal and Torres Strait Islander food traditions.

FOOD IN FOCUS

FOR-PROFIT CATERING

PURPOSE

Examine a for-profit food service and catering operation. Discuss its contribution to society.

Doltone House Venue and Catering Collection

Doltone House is an award-winning, family-owned company that operates over 10 modern and elegant venues across Sydney. The venues cater for many different types of functions, including weddings and other family celebrations, school formals, graduation and charity balls, and corporate events. They offer both small- and large-scale catering ranging from 10 to 4000 people. They also offer catering for special occasions such as Melbourne Cup and Mother's Day luncheons.

Each venue has an executive chef with a full brigade of kitchen staff. Doltone House also provides full front-of-house service with a dedicated team of wait staff, bar staff, baristas and hosts. When planning the menus, Doltone House tries hard to fulfil the needs of its clients. Some customers want sit-down meals consisting of particular courses, while others prefer a standing-up function with a cocktail menu or grazing stations. The company also tries to meet the food requests of its clients; for instance, they offer Indian, Chinese and kosher menus.

Besides onsite catering at one of its venues, the company also provides offsite catering for home or work events. It also operates a waterfront café offering Italian casual dining.

Doltone House recognises the importance of environmental sustainability and is committed to the ongoing reduction of the organisation's carbon footprint. For instance, Doltone House donates excess food from events to Ozharvest so that it can be prepared as meals for those in need in the community.



Alamy Stock Photo/Art Directors & TRIP

Figure 5.5 This Doltone House venue is popular for school formals, corporate events and weddings.

ACTIVITY

Discuss how function centres such as Doltone House contribute to society.

To structure your response, write a paragraph for each of the following aspects: economic, social and cultural contributions. Each paragraph should be a minimum of two sentences long, but four would provide a more comprehensive response. It is best to structure your sentences with a statement on how it contributes to society, and then provide an example from the passage. It is a good idea to photocopy the passage, and then highlight each area using three different coloured highlighters to assist in classifying and identifying the information.

HANDS-ON

PURPOSE

Examine the function menu to plan a school formal.

MATERIALS

School formal menus

ACTIVITY

You are on the committee in charge of choosing the menu for your school formal. It has been decided that it would be a sit-down, three-course meal with alternative option. The school has reminded you that nuts should be avoided.

1 Working in a small group, carefully read the function menu from Doltone House or another venue of your choice. Select your menu items. and justify your selection. You can create a table similiar to the one below. You can create a table similiar to the one below.

Menu course	Menu items	Justification
Entrée		
Main		

2 Several students have special dietary needs. Three are gluten intolerant and two are vegetarians. Select dishes to accommodate these students.

Menu course	Gluten-free menu item	Vegetarian menu item
Entrée		
Main		

3 Write a dessert menu that includes six desserts that can be added to the menu below. Make sure to include a description of the menu item and vegetarian and gluten-free options.

4 Select a dessert that would complement the courses you have selected for your school.

School Formals Menu

ACCOMPANIMENT – ARTISAN SOURDOUGH LOAF & BUTTER PER TABLE

Entrée — PLEASE SELECT ONE FROM THE FOLLOWING

POACHED CHICKEN SALAD
with celery, apple, walnuts, leafy greens and a classic waldorf dressing *GF, LF, N

SALT AND PEPPER CALAMARI
with lemon and tartare *LF

WILD MUSHROOM & PEA RISOTTO
baby tomatoes and flaked parmesan *V

TORTELLINI PANNA
small pockets of pasta, filled with seasoned veal, topped with a light parmesan and cream sauce and parsley

SWEET POTATO AND BEETROOT SALAD
with crumbed feta, spinach leaf, pinenuts and honey mustard vinaigrette *GF, N, V

TRADITIONAL HOMEMADE BEEF LASAGNA
with Napolitana sauce, basil and fresh mozzarella

SPINACH FETA FRITTERS
avocado salsa & cherry tomato salad *V

MEDITERRANEAN CHICKEN FUSILLI
short, spiral pasta with diced, marinated chicken pieces and mushrooms in a Napolitana cream sauce

Main Course — PLEASE SELECT TWO FROM THE FOLLOWING (ALTERNATE SERVE)

BRAISED LAMB SHANKS
with provencal lentils, crushed pontiac potato and wilted kale *GF, LF

OVEN ROASTED CHICKEN BREAST
with baked potato, peperonata and basil pesto *GF, N

CHICKEN PARMIGIANA
topped with tasty cheese and Napolitana sauce, served with garden greens

TUNISIAN BRIK PASTRY FILLED
with spiced sweet potato and pea, crushed potato, kale & baby tomato GF, LF, V

SLOW ROASTED BABY EGGPLANT
butter bean cream & spiced chickpeas *GF, V

PANKO CRUMBED BARRAMUNDI FILLET
hand cut potatoes, green leaf salad and house made remoulade sauce

GRILLED BEEF SIRLOIN
with smashed sweet potato and steamed greens *GF,LF

CLASSIC RATATOUILLE
of eggplant, zucchini, capsicum with creamy polenta, buttered green & crumbled feta *GF, V

HONEY SOY CHICKEN
steamed Asian vegetables and coconut rice *GF, LF

SPECIAL DIETARY REQUIREMENTS indicated by*
GF - Gluten Free **LF** - Lactose Free **N** - Contains Nuts **P** - Pork Products **V** - Vegetarian **VN** - Vegan

WARNING It is the client's responsibility to notify Doltone House of any attendees who may suffer from food intolerances or allergies including but not limited to traces of nuts. Doltone House cannot guarantee menu items unless notification of specific requirements are provided in writing PRIOR to your event.

Doltone House Venue + Catering Collection

Figure 5.6 Which of these items would you choose for your school formal?



UNIT REVIEW

LOOKING BACK

1 Give five examples of profit-making food service and catering operations.
2 Give five examples of not-for-profit food service and catering operations.
3 Identify three groups in society that may benefit from the services of not-for-profit food service and catering operations.
4 Identify two ways the government use taxes received from incomes.
5 What does the acronym GST stand for?

FOR YOU TO DO

6 Select a suburb, shopping precinct or town you are familiar with and list the different cultural cuisines offered by restaurants located within this area.
7 Write a review about your favourite food and service experience at a food service and catering establishment. Include in your review:
- the name, location and type of the establishment
- features of the menu, particularly your personal favourite items
- features that make this venue special for you
- suggestions for improvement.

8 Research the name of an accredited provider in your local area who specialises in training Aboriginal and Torres Strait Islander people for careers in hospitality.
9 Research the operations of a social enterprise catering venture operating in NSW. Explain how it operates, who benefits from this enterprise and find examples of meals provided. For example: Parliament on King, Four Brave Women and Lentil as Anything.

TAKING IT FURTHER

10 Set up your own catering company that specialises in providing finger foods for events. Produce a social media page, leaflet or brochure providing the following for prospective customers the following:
- the company's name and contact details
- a list of events/functions you can cater, such as weddings
- a list of services you may offer, such as wait staff and coffee
- lists of both savoury and sweet finger foods you can offer, including options for gluten-free, dairy-free, vegetarian and vegan dietary requirements
- appropriate images.

Employment opportunities

As food service and catering is a large and growing industry, it can offer opportunities to:

- select from a variety of careers
- work for a variety of organisations
- work full-time, part-time or casually
- work with people
- develop food and beverage skills
- travel
- network with other industry professionals
- progress to management level or establish your own ventures.

When hiring staff, employers and customers value staff who are:

- organised
- efficient
- enthusiastic
- responsible
- respectful
- skilled/qualified/knowledgeable
- effective communicators

and who:

- demonstrate initiative
- work cooperatively
- present well.

Front of house

In food service and catering, 'front of house' refers to the areas where direct customer contact occurs. Generally, front-of-house staff are responsible for greeting, taking orders, and serving food and drinks to a customer or guest.

Table 5.2 Employment opportunities: front of house

Position	Key responsibilities
Owner/operator/manager	Manages the whole operation – hiring staff, marketing and ensuring profitability.
Head waiter (maître d')/host	Organises service staff, allocates tables for bookings, greets guests and compiles staff rosters.
Food and beverage attendant/waiter	Takes orders, serves food and/or drinks to guests.
Trainee attendant/food or drink runner	Assists food and beverage attendant by removing plates, setting tables and collecting glasses.
Barista	Prepares specialty espresso coffee drinks, as well as other beverages such as teas.
Bar staff	Prepares alcoholic or non-alcoholic beverages.
Sommelier	A specialist wine waiter who is responsible for wine service, pairing wines with foods, wine procurement and storage.
Counter staff/sandwich hand	Stands behind a counter and takes food orders and then serves foods that are ready-made or easy to assemble.
Order taker and delivery driver	Takes orders or delivers a requested meal from a restaurant directly to the customer.



Alamy Stock Photo/Monica Wells

Figure 5.7 Baristas and wait staff are part of the front-of-house team.

Back of house

The back of house includes all the behind-the-scenes areas that customers usually do not see. It involves the kitchen where food is prepared, cooked and plated before making its way to the customer. The back of house also serves as a place for employees and managers to do administrative work. Good communication between the front and back of house is vital for the success of a food service and catering operation.

Table 5.3 Employment opportunities: back of house

Position	Key responsibilities
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.
Sous chef	Second in command, manages day-to-day activities of the kitchen.
Chef de partie	Specialist chef for a particular type of dish (e.g. sauces, soups, fish, pastries) or a particular method (e.g. grills, roasts).
Commis chef	Has completed an apprenticeship and works in any area of the kitchen preparing, cooking or finishing food.
Apprentice chef	Trainee who works under the direction of a chef. Apprenticeships last four years.
Kitchen hand	Carries out cleaning duties and helps with simple food preparation.
Cook	Prepares food and has usually undergone cooking training, but has not completed a chef apprenticeship.
Catering assistant/kitchen hand	Responsible for carrying out basic food preparation tasks, such as washing and peeling food, as well as cleaning duties.

ANNA POLYVIOU: PASTRY CHEF


Newspix/Jonathan Ng

Anna Polyviou is a pastry chef who creates beautiful, modern and technically impressive desserts. She particularly likes to modernise classic recipes such as carrot cake.

From the age of three, Anna loved to bake alongside her mother. Anna said, 'I see Mum's kitchen as my first "professional" kitchen. She was strict and taught me to be clean, tidy and organised.'

After leaving school, Anna started her apprenticeship at the Sofitel Hotel, Melbourne. As a prize for winning a 'Best Apprentice' award, she travelled to London to train with some of England's most talented pastry chefs, including the Queen's pastry chef. 'For me, London was all about the great British tradition of afternoon tea. I learnt that a range of flavours is incredibly important, but that the flavours have to work together as a whole.'

After winning the UK's 'Best Dessert' award, Anna trained under Pierre Hermé at his famous Paris patisserie. 'In Paris, the cakes were an art … For me, Paris was all about attention to detail …'

Anna is now executive pastry chef at the Shangri-La Hotel, Sydney, where her team of pastry chefs create high-end desserts and high teas, including colourful and distinctive sweet treats, savoury creations, and fluffy scones accompanied by clotted cream and mixed berry jam. Anna has also become a celebrity chef.

Source: Adapted from 'Sweet talk with Anna Polyviou', gourmettraveller.com.au, 1 May 2017



ACTIVITIES

1 What did Anna's mother teach her about working in the kitchen?
2 Explain why it is important for a chef to follow Anna's mother's advice.
3 Summarise Anna's career pathway.
4 What do you think being an executive chef involves?
5 Find an example of a dish created by Anna Polyviou. Explain how the food item reflects her beliefs about food.
6 Investigate Anna's role as a celebrity chef.


Newspix/Jonathan Ng



UNIT REVIEW

LOOKING BACK

1 Describe the roles of four employment opportunities in the food service and catering industry for both **a** and **b**.
- **a** back of house
- **b** front of house.

2 Compare and contrast the roles of a cook and a chef.

FOR YOU TO DO

3 Using an employment website or app, find a job for each of the following employment opportunities, and then copy and complete the following table.

Employment opportunity	Venue (café, childcare centre) and location	Part-time /full-time hours	Duties/requirements
Apprentice chef			
Barista			
Cook			
Wait staff			
Executive chef			

4 Research and write an advertisement for a counter-hand position available at a fast-food or takeaway store.

TAKING IT FURTHER

5 Visit a restaurant, café or other type of catering establishment and interview the staff about their role in the operation of the venture.

Employer and employee rights and responsibilities

Rights are legal entitlements. Responsibilities are what you are required to do as part of your legal obligation or job. Both employers and employees have rights and responsibilities in the workplace, particularly in regards to safety.

Government regulations

Every food business in Australia, whether a five-star restaurant, a takeaway store or a school canteen, is required by law to ensure that its food is safe to eat and that staff have been trained to work safely.

Food safety laws and regulations are enforced by federal, state and local governments. Food establishments that do not follow these laws and regulations can be heavily fined and even closed down.

Work health and safety regulations

Working in a food establishment usually involves long periods of standing, working at a fast pace in a confined space, and working with others. It also involves working with heat, water, sharp tools, heavy equipment and use of machines. All of these can pose a risk of injury, such as:

- slips and falls
- sprains and strains
- scalds and burns
- cuts and abrasions.

All employees have the right to a safe workplace. The *Work Health and Safety Act 2011* (NSW) aims to protect the health, safety and welfare of workers by making employers responsible for:

- providing a safe work environment
- providing WHS information and training to employees
- supervising employees
- providing emergency training and first aid
- keeping records and performing safety checks
- monitoring the health and wellbeing of employees.

Failure of employers to provide a safe workplace for employees can result in heavy fines, business closure or imprisonment. The government organisation SafeWork NSW can, at any time, inspect premises to check on health and safety issues. In the event of a death from a workplace accident, it will immediately close and inspect the workplace.

Employees also have a responsibility to look after their own safety, as well as the safety of others by:

- following safety policies and procedures (e.g. wearing personal protective clothing and storing chemicals correctly)
- implementing safe work practices (e.g. lifting objects safely and keeping work areas safe)
- completing WHS training
- following emergency procedures (e.g. fire evacuation)
- reporting injuries and unsafe or unhealthy conditions.



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Figure 5.8 Signs assist with safety.

Food safety guidelines

Food Safety

The *Food Act 2003* (NSW) requires most food service and catering establishments to have a food safety program. This is a document that describes how a business will control food safety hazards when producing, manufacturing or handling food so as to prevent health risks such as food poisoning.

All food businesses need to have a food safety supervisor who manages the program. Employees have a responsibility to follow the food safety guidelines set out in the program, such as:

- practising personal hygiene
- undertaking safe food handling
- monitoring food storage and cooking temperatures
- cleaning premises thoroughly and following cleaning schedules.



Left and middle: Shutterstock.com/Di Studio. Right: iStock/Getty Images Plus/MattoMatteo

Figure 5.9 Uniforms in food service and catering can assist with both workplace and food safety.

Consumer rights and responsibilities

When you purchase goods such as food, or use a service, such as having food delivered, you become a consumer.

Australian consumers have basic rights to protect them against providers who supply faulty goods or poor service. These rights were developed by the United Nations. But while consumers have rights, they also have responsibilities.

The rights and responsibilities of consumers are:

1 **The right to safety** – To be protected against products, production processes and services which are hazardous to health or life.
It is the consumer's responsibility to use the product safely, following all safety instructions and remaining alert for future warnings.
2 **The right to be informed** – To be given facts needed to make an informed choice, and to be protected against dishonest or misleading advertising or labelling.
It is the consumer's responsibility to analyse and use information about products wisely.

3 **The right to choose** – To be able to select from a range of products and services offered at competitive prices with an assurance of satisfactory quality.
It is the consumer's responsibility to choose products and services carefully.

4 **The right to be heard** – To have consumer interests represented in the making and execution of government policy and in the development of products and services.
It is the consumer's responsibility to express concerns about a product or service to those who can help.

Fair Trading NSW

5 **The right to satisfaction of basic needs** – To have access to basic essential goods and services, adequate food, clothing, shelter, health care, education and sanitation.
It is the consumer's responsibility to consume sustainably, so as not to prevent others from meeting their own needs.

6 **The right to redress** –To receive a fair settlement of just claims, including compensation for misrepresentation, shoddy goods or unsatisfactory services.
It is the consumer's responsibility to request a refund, an exchange, repair or other fair compensation for a company's mistake.

7 **The right to consumer education** – To acquire knowledge and skills needed to make informed, confident choices about goods and services while being aware of basic consumer rights and responsibilities and how to act on them.
It is the consumer's responsibility to learn about the changing nature of products and services.

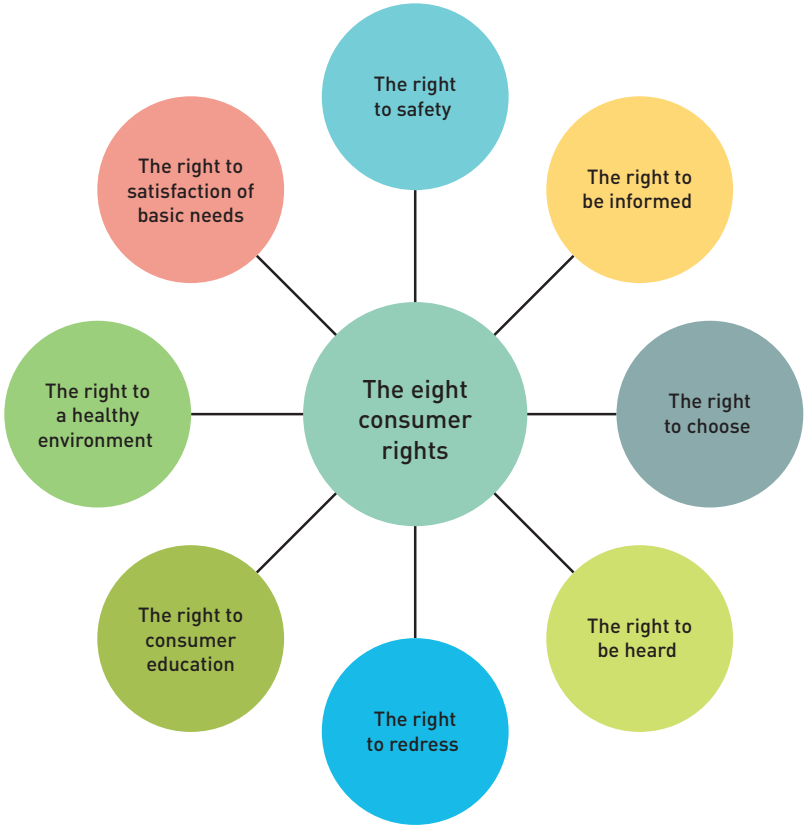
8 **The right to a healthy environment** – To live and work in an environment which is non-threatening to the wellbeing of present and future generations.
It is the consumer's responsibility to make choices that minimise the environmental impact of your purchase on others.

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Safety and hygiene

NSW Food Authority

In NSW, the *Food Act 2003* and the Food Regulation 2015 protect consumers by ensuring that the foods they buy, including those prepared by food service establishments, have been prepared hygienically and are safe to eat. Under the legislation, food premises need to be approved by local councils in order to meet set standards for preparing food in a commercial kitchen.



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Figure 5.10 Consumers' rights

Environmental health officers enforce the legislation by inspecting food premises. They can enter at any time and have the power to take food samples, issue warnings, and fine or close food premises if food hygiene standards are not met. The NSW Food Authority publishes on its website the names of those food service and catering establishments that have had recent penalties regarding food safety and hygiene.

Legislation also exists banning smoking near food, including at outdoor dining areas, as smoke can carry germs in addition to affecting the health of both smokers and nonsmokers.

FOOD IN FOCUS

FOOD SAFETY

PURPOSE

Read the following information provided by the NSW Food Authority on selecting a takeaway outlet. Outline consumers' rights and responsibilities regarding food safety and hygiene.

Choosing a takeaway outlet

Premises and equipment

The store should appear clean and tidy. Dirty premises may be an indication of their attitude to food safety.

Concerns include:

- grease build up around exhaust system
- mould on tiles or around fridge doors
- flaking paint on walls, especially above food areas
- evidence of pests e.g. cockroaches or excessive flies
- dirty utensils and equipment piled up.

If you can see a hand basin:

- it should be clear of any utensils and other items such as cleaning cloths
- soap and paper towels should be available nearby.

Food handlers

Staff should:

- be clean, tidy and well presented with long hair tied back
- wash their hands after returning to work from breaks, sweeping floors, blowing their nose, and so on
- not smoke in areas where food is handled
- not eat or drink while preparing or serving food
- avoid unnecessary contact with ready-to-eat foods, and
- use individual utensils for each food being served/displayed.

It is not compulsory for food handlers to wear disposable gloves. If they do, the gloves should be clean, intact and changed regularly during the day. Disposable gloves should not be reused and new gloves should be worn when commencing food-handling activities.

Ready-to-eat food is ideally not handled after handling money, although the safety risk is generally low.

Foods that will be cooked, such as raw meat, may be handled with clean bare hands.

Food

- Perishable foods such as sliced meats and some sandwich fillings should be kept refrigerated.
- Hot food should be kept hot. Look for steam coming from the bain marie or condensation on glass surrounds.
- Cold food should be kept cold. Make sure the display feels cold to touch, and look for frost or ice around the corners of cabinets.
- Foods such as sandwiches and sushi can be displayed at room temperature for up to 4 hours only. If these foods are stored unrefrigerated, ask how long they have been displayed before buying.
- Avoid buying 'tired' looking food; it might have been on display for a long time.
- Food should not be overloaded or piled high in display bars.
- Disposable food packaging and utensils such as knives and forks should not be re-used.

Source: © State of New South Wales through the NSW Food Authority www.foodauthority.nsw.gov.au

ACTIVITIES

1 Identify a basic need that can be met by a takeaway outlet.
2 Describe two ways you can tell if a takeaway outlet is not clean.
3 Explain how a dirty takeaway outlet can affect consumers.
4 What information could a staff member provide a consumer regarding the hot pies served in the store? If a meat pie has been served cold to a consumer, who should the consumer complain to and what compensation can they expect?
5 Describe two ways a takeaway outlet can provide a healthy environment for its customers.
6 Name two takeaway outlets close to where you live. Why is it beneficial that consumers have a choice?

Accurate labelling and marketing

In NSW, food service providers are not required to label their products like packaged foods. The exception requirement is fast-food and snack-food chains, which must display the kilojoule content of their products at the point of sale. This strategy was introduced to inform consumers and help combat obesity within the community.

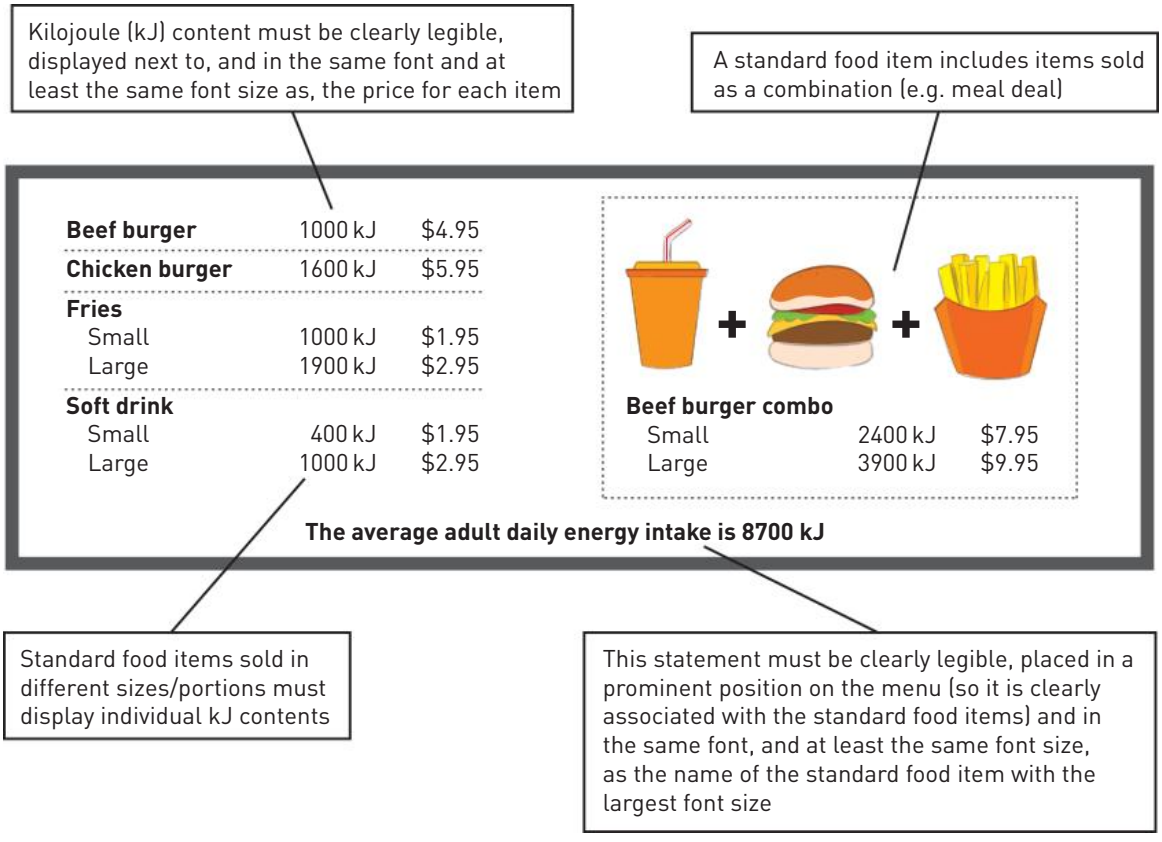
Most food service and catering providers try to accurately label their products on their menus. The type of information may include:

- the name of the dish, often with a brief description (e.g. Chicken Montrose: 'grilled chicken breast served with a fresh tomato and basil sauce')
- portion size/course, such as small, large, appetiser or main
- cost
- options such as vegetarian and gluten-free.

Some providers use photographs and displays to inform customers, while others train staff to describe their menu items verbally.

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.

Consumers are protected against false and misleading advertising under fair trading legislation, and there are strict guidelines regarding the advertising and promotion of fast foods to children as well as how competitions are conducted. The consumer is responsible for reading the fine print on promotional materials.



© State of New South Wales through the NSW Food Authority www.foodauthority.nsw.gov.au

Figure 5.11 The NSW Food Authority example of the best way to present nutrition information on fast-food menus



UNIT REVIEW

LOOKING BACK

1 List four injuries common to the food service and catering industry.
2 Identify the legislation that ensures employees have the right to a safe workplace.
3 Outline the responsibilities of:
   a employers
   b employees
   under work health and safety regulations.
4 List four rights of consumers.
5 Describe the labelling requirements of fast-food chains.
6 Explain marketing practices used by food service providers.
7 Describe the responsibility of consumers regarding promotional materials.
8 Explain the importance of a food safety program for both consumers and food service providers.

FOR YOU TO DO

9 Write brief, informative descriptions for each of the following menu items:
   - seafood family feast
   - chocolate lover's dream
   - tropical pizza.
10 Search for one image of poor kitchen hygiene and make a list of hygiene rules that have not been applied.

TAKING IT FURTHER

11 Produce a short instructional video or other form of visual presentation on how to maintain food safety in a food venue.
12 Produce a short instructional video on how employees can prevent injury at a food venue.

Causes of food deterioration and food spoilage

Have you ever noticed that if you leave food out for too long it starts to go bad? Some foods may not even look off, but are spoilt from contaminants that can make you ill. There are a number of causes of food decay and spoilage.

Microbial activity

A microbe is a microscopic organism that occurs naturally within the environment. There are three types of microorganisms involved in the deterioration and spoilage of food: moulds, yeasts and bacteria.

Moulds

Moulds can be visible on foods.

Mould is a fungus that rapidly reproduces in warm, moist and nutrient-rich conditions. It forms spores that build furry blue or white spots on the surface of food such as bread, jam and cheese.

Some moulds are useful in making products, such as those in brie and blue vein cheeses. Others, like those found in grains and nuts, can produce dangerous toxins that can damage your liver, kidneys and immune system.

While most moulds are not life threatening, their presence on foods is undesirable. It is advisable to throw out foods with mould, as it is hard to see the invisible mould that is still forming. To prevent mould growth, foods should be stored in a cool, dry place or heated to over 60 °C.

Yeasts

Yeasts are not easily visible but can be smelled and tasted.

Yeasts are single-celled fungi found naturally in carbohydrate foods, such as sweet watery fruits (e.g. watermelon, grapes and oranges). In warm, moist and carbohydrate-rich conditions, yeast multiplies and causes the food to ferment.

During fermentation, yeast starts to convert carbohydrates such as sugar into an alcohol or an acid and give off carbon dioxide. We can tell a food is fermenting because of its soft, slimy texture, bubbles, strong musty odour and acidic taste. While these changes are not pleasant, they are not harmful. Indeed, the fermentation process is used to turn grapes into wine and vinegar, and yeast is used in bread making. Heating to 60 °C and above destroys yeasts.

HANDS-ON

BLOW UP SOME YEAST!

PURPOSE

To demonstrate fermentation of the microbe yeast.

MATERIALS

3 water bottles
3 balloons
Yeast
Sugar
Warm and cold water

ACTIVITY

1 Place the ingredients in each water bottle as directed below.
2 Shake each bottle gently to mix.
3 Place a balloon over the top of each bottle.

Water bottle 1	Water bottle 2	Water bottle 3
½ cup warm water 1 tablespoon of yeast 1 tablespoon of sugar	½ cup cold water 1 tablespoon of yeast 1 tablespoon of sugar	⅓ cup warm water 1 tablespoon of yeast

QUESTIONS

1 Predict the results before you start.
2 After 10 and 20 minutes, make observations and record results.
3 Identify the optimum conditions required for fermentation.
4 List applications of yeast fermentation in food preparation.

Bacteria

Bacteria cannot be easily smelled, tasted or seen.

There are many types of bacteria. They can be found in food, air and soil, on plants, animals and equipment – and even on humans.

Most bacteria are harmless – some are even used in the production of foods such as yoghurt, cheese and buttermilk. Others, however, can cause food poisoning and even death. These are called pathogens and include:

- salmonella
- E. coli (*Escherichia coli*)
- listeria (*Listeria monocytogenes*)
- golden staph (*Staphylococcus aureus*)
- *Bacillus cereus*.



Vitaly Iskakov/Dreamstime.com

Figure 5.12 Even in large numbers, bacteria cannot be seen unless under a microscope.

High-risk foods are foods that are at most risk of containing pathogens. These are usually moist protein foods and moist starch foods. They include milk and milk products, meat and smallgoods, fish and seafood, poultry, raw eggs, cooked pasta and rice.

It is important not to cross-contaminate bacteria from a high-risk food, such as milk and meats, to a low-risk food, such as fresh fruit and vegetables. Chopping boards are colour coded for different foods for this reason.

Humans can also carry pathogens in our bowels, nasal passage and open wounds. Hand washing, covering sores, and not sneezing or coughing over food help to prevent cross-contamination.

Provided with ideal conditions, bacteria grow rapidly, causing food spoilage. This is why storing, preparing and cooking foods and cleaning correctly is so important to health. Heating to 60 °C and above destroys bacteria, while cooling below 5 °C delays their action.

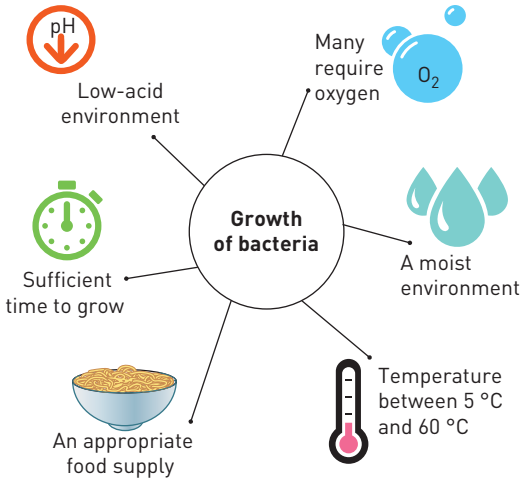


Figure 5.13 Conditions for the growth of bacteria

Enzymatic changes

Enzymes are substances (typically proteins) found naturally in living things that speed up the rate of chemical reactions within cells. In food, they help to ripen or age a food until it finally spoils and decomposes. When some foods are dropped, enzymes cause bruising and early decomposition – apples are a common example of this.

Many light-coloured fruits and vegetables, such as bananas, potatoes and avocados, go brown when they are cut, as enzymes allow oxygen in the air to react with substances on the food surface. To prevent browning, the cut food can be wrapped or submerged in cold water to avoid oxygen contact. Coating the food with an acid ingredient, such as lemon juice, will also reduce browning, as the oxygen reacts with the acid before it can get to the enzymes.

To slow down the action of enzymes, food needs to be stored at below 5 °C. Heating foods to above 60 °C halts the action of enzymes.



Shutterstock.com/Artography

Figure 5.14 Enzymes in bananas help to change starch to sugar, making them sweeter as they ripen. This action continues until the food becomes inedible.

Environmental factors

The following environmental factors can also cause food spoilage.

- Oxygen – exposure to air can result in foods drying out, changing colour or changing flavour. For instance, fatty foods can become rancid when exposed to air.
- Light – light can change the colour of food and is responsible for fats becoming rancid. It can also cause potatoes to sprout and go green.
- Pests – insects, rodents and other creatures that require food to survive can damage food or leave droppings.
- Temperature – food deteriorates faster in warm conditions, particularly at room temperature.
- Dust, dirt and soil – these carry pests, microbes and chemicals, so it is important to keep kitchens clean and tidy.
- Moisture – keeping foods in humid conditions or near moisture can soften crispy foods such as biscuits.
- Chemicals – insect sprays and detergents found on food can be toxic.



UNIT REVIEW

LOOKING BACK

1 Define the term 'microbe'.
2 Describe how you can judge whether a food has been spoilt by mould.
3 What occurs during fermentation?
4 Name two bacteria that can cause food poisoning.
5 List four foods that are high risk for pathogens.
6 What is the role of enzymes in food?
7 List four environmental factors that can cause food spoilage.

FOR YOU TO DO

8 Copy and complete the following table on microbial activity.

Microbe	Identification of spoilage on food	Examples of food affected	Conditions needed for growth	Temperature required for destruction of microbe	Example of food product that can be produced from microbial action
		Bread Jam Cheese	Warmth Moisture Nutrients		
Yeasts	Bubbles Slimy texture Musty smell Acid taste				Vinegar
	Not easily visible	Milk Meat Seafood Poultry Raw eggs Cooked rice		Above 60 °C	

9 You have arrived home with some fresh chicken to cook later on in the day. Explain and justify steps that you would take to ensure that the chicken does not spoil and is safe to eat.
10 Explain how you would store homemade biscuits to avoid environmental damage. Justify your response.

TAKING IT FURTHER

11 Conduct an experiment that demonstrates the action of enzymes on food.

Steps:

- Cut an apple in quarters.
- Cover one quarter in lemon juice.
- Cover one quarter with cling wrap.
- Place one quarter uncovered in the refrigerator.
- Leave one quarter exposed to air.
- Leave for 24 hours and then check the results.

Using your samples as examples, explain the effect of enzymes on cut apples and suggest how their action can be delayed.

Reasons for cooking food

While it is best to eat some foods raw, such as fruits and vegetables, there are some advantages to cooking food.

Sensory properties of food

Cooking food can enhance its sensory properties, making it more palatable.

Appearance

We are drawn to food that is colourful. When we prepare a meal, we usually use different coloured ingredients to make it more interesting and visually appealing. Cooking can change the colour of a food. Colour can be a good indicator of when a food is ready; for instance, when baking biscuits, they are cooked when they are a golden brown colour. Blanching vegetables before freezing them for later use helps to enhance their colour.

Aroma

Consider the smells coming from a barbecue or from the oven when baking bread. Aroma or odour is a very strong sensation that can stimulate your appetite even before you have seen the food. Hot foods usually have a stronger aroma than cold foods. This is due to the effects of heat on chemical compounds in the food during the heating or cooking process.

Flavour

Cooking can change or improve the taste of food. Sweet potatoes, for instance, taste better cooked than raw, because cooking brings out their natural sweetness. Cooking also allows you to combine ingredients. For instance, butter, salt and milk added to mashed potatoes further improves their flavour.

Texture

Texture is also known as 'mouthfeel'. The physical structure of food contributes to its texture. Cooking changes the physical structure of food. For instance, crisp apples soften when stewed, and bread forms a crispy crust when baked. Cooked foods are easier to eat and digest because they are softer. Variety in texture enhances our enjoyment of a meal, such as when we include crispy cooked bacon in a Caesar salad.

Sound

The crunch of a chip, the snap of a celery stick, the popping of popcorn or the fizz of a freshly opened beverage influences how we think those foods will taste and how they will feel in our mouths. The sounds of food being prepared, cooked, served and eaten all influence our preferences and food choices.

Safety

Cooking can make food safer to eat. Meat, fish, poultry and eggs should be cooked, as they can contain bacteria that can be harmful to us. For instance, eating raw egg can cause salmonella poisoning, symptoms of which include vomiting and diarrhoea, nausea and general ill health.

Cooking can also help to increase a food's shelf life. Heat can deactivate enzymes that contribute to the ripening and decomposition of food. For instance, strawberries last longer when made into into a sauce or jam.

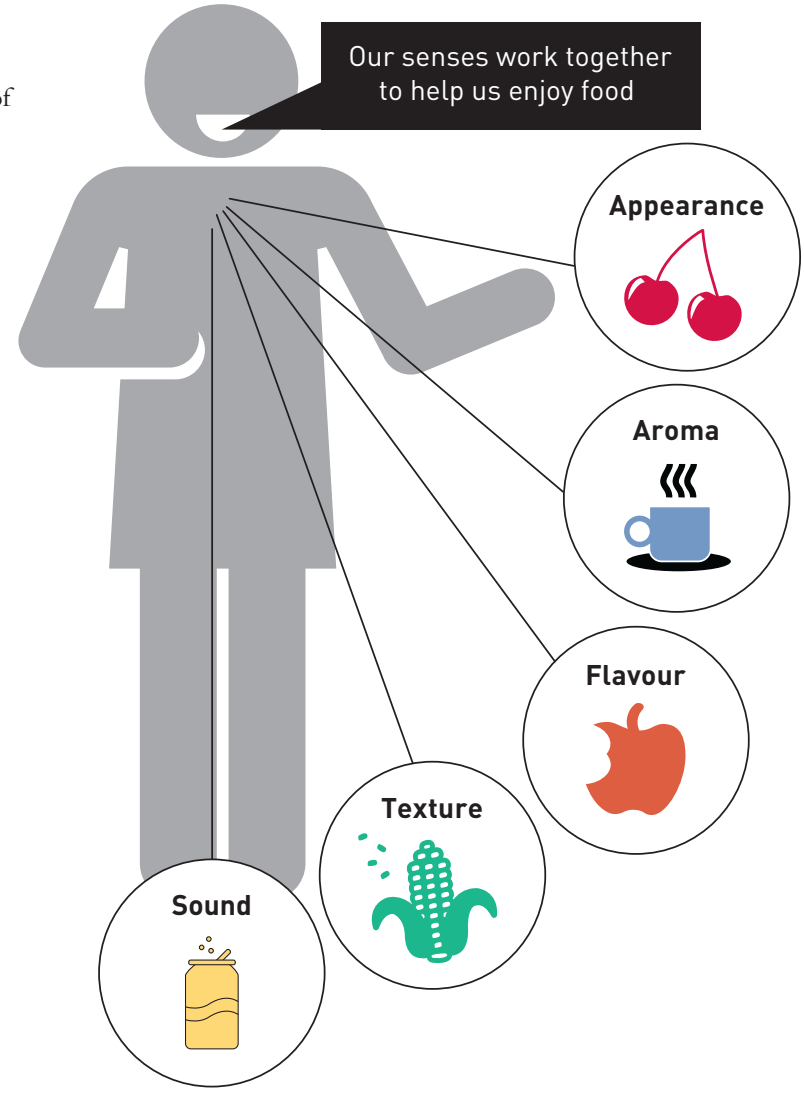


Figure 5.15 The sensory characteristics of food



UNIT REVIEW

LOOKING BACK

1 Identify the four sensory properties of food.
2 List three symptoms of salmonella poisoning.

FOR YOU DO

3 Consider a scoop of vanilla ice-cream in a white bowl. Suggest an ingredient that can be added to the ice-cream to enhance the following sensory properties:
   - appearance/colour
   - texture
   - flavour.
4 Ice-cream is made from pasteurised milk. Research why and how milk is pasteurised.
5 Modify the following menu by changing two ingredients and adding one extra ingredient to improve the colour, texture and flavour of the meal.
   - Chicken soup
   - Roast chicken with mashed potato
   - Stewed apples

TAKING IT FURTHER

6 Create a list of words/adjectives used to describe the following sensory properties of food. Think about foods like chocolate, bread, cakes, biscuits, apples, strawberries and fish as you create your list:
   - appearance
   - texture
   - flavour
   - aroma.

Functional properties of food

In food preparation, the ability of carbohydrates, proteins and lipids to change the physical and chemical structure of a food is referred to as the functional properties of food. (Refer to Chapter 4 for food sources of carbohydrates, proteins and lipids.)

Carbohydrates


Functional properties: carbohydrates

Table 5.4 The functional properties of carbohydrates

Functional property	Process	Practical applications
Dextrinisation	A browning process where dry heat (e.g. baking, grilling) changes starch to dextrin on the surface of food.	Toasted bread and breakfast cereals Baked goods
Gelatinisation	A thickening process where starch dispersed in a liquid is heated, causing the starch to swell as it absorbs the liquid.	Boiled rice and pasta Porridge Products thickened with flour, such as sauces, pie fillings, curries and stews
Caramelisation	When sugars are heated to about 160 °C, they produce a golden-brown caramel. This also applies to sugars found naturally in foods.	Caramel slice Caramel confectionery Caramel sauce Crème caramel Caramelised onions Biscuits Toffee (brown colour)
Crystallisation	When a supersaturated sugar solution (large proportion of sugar to water) is heated, the sugar dissolves and the solution becomes more concentrated. Crystallisation results when the sugar crystals re-form on cooling.	Toffee (setting) Honeycomb Fudge Fondant



iStock/Getty Images Plus/Roxiller

Figure 5.16 In mac and cheese, gelatinisation of starch occurs as the pasta boils and flour thickens the sauce. Dextrinisation results when sprinkled breadcrumbs sprinkled on top turn brown from being grilled.



Shutterstock.com/Jesus Gutierrez

Figure 5.17 Caramel sauce and toffee shards are examples of the functional properties of sugars.

Proteins

Table 5.5 The functional properties of proteins

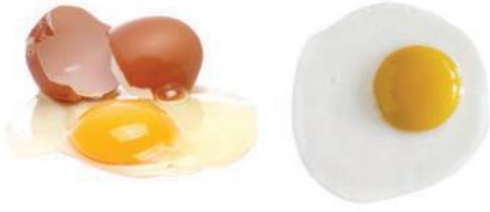
Functional property	Process	Practical applications
Denaturation	When the structure of the protein breaks apart as the result of heat, acids, salt, enzymes or beating. Denaturation is not visible, but is required in order for coagulation to occur.	Tenderising meat with marinades Meringues
Coagulation	The process whereby protein traps liquid to form a solid. Heat, acids and enzymes can cause coagulation.	Cooked eggs Cooked meats and fish Cheese and yoghurt Meringues Eggs used for binding and setting (e.g. in meatballs, quiches)
Syneresis	When the coagulation process continues too long and the protein squeezes out liquid.	Weeping of liquid from meringues and scrambled eggs Splitting or curdling of egg-based sauces Curdling of milk

Functional properties: proteins

Lipids

Table 5.6 The functional properties of lipids

Functional property	Process	Practical applications
Emulsification	The process allows lipids and water to mix. It may be a temporary emulsion, where the two soon separate (such as when oil and vinegar are shaken together to make a dressing), or permanent (such as where ingredient such as egg yolk, contain substances called emulsifiers, which bond to both nutrients, preventing separation).	Salad dressings Mayonnaise



Left: Shutterstock.com/xpixel. Right: Shutterstock.com/GANNA MARTYSHEVA

Figure 5.18 Eggs are high in protein and water. Heat first denatures the protein to allow it to coagulate, trapping the water and setting the food. Overcooking shrivels the egg because of syneresis.

Functional properties: lipids

HANDS-ON

THE SCIENCE OF SALAD DRESSING

PURPOSE

To investigate how the emulsification of lipids can be used to make a salad dressing.

MATERIALS

2 cups of vegetable oil
2 cups vinegar

At least three of the following emulsifiers:

- ½ teaspoon honey
- ½ teaspoon dry mustard
- ½ teaspoon egg yolk
- ½ teaspoon garlic paste
- ½ teaspoon tomato paste

>

HANDS-ON

Stopwatch

Tablespoon measures and fork

Four small clear glasses, bottles or jars – use one as a control

ACTIVITY

1 Set out four small, clean glasses with clear sides on a stable work area.

2 To each of three glasses, add ½ teaspoon of a different emulsifier. Label each glass with the emulsifier that was added, and label the empty glass 'control.' Record your findings on the worksheet provided on NelsonNet.

WS The science of salad dressing

3 To each glass, add four tablespoons of vinegar, and swirl to fully mix in the emulsifier.

4 To each glass, add four tablespoons of oil. Observe the separation of the oil and vinegar as they avoid mixing with one another.

5 Using a fork, vigorously stir the oil and vinegar in the 'control' glass for 30 seconds. (Use the stopwatch.) At the end of 30 seconds, restart the stopwatch and watch the sides of the glass for 1–5 minutes for signs of separation. When most of the oil has separated from the vinegar, stop the stopwatch and record how long the process took.

6 Repeat step 5 for each of the glasses containing an emulsifier, making sure to use a clean and dry fork for mixing. If an emulsion has not separated after 5 minutes, record it as 'over 5 minutes'. Also note the time of day.

7 After you have mixed and observed all of the emulsifier combinations, go back and check to see if any of the emulsions that did not separate earlier have now separated. Record your observations.

QUESTIONS

1 Did the mixtures with the emulsifiers take more or less time to separate than your control? Is this what you expected?

2 Based on your observations of separation time, which emulsifier would you recommend using for making salad dressing?

3 What process will cause oil and vinegar to form a temporary emulsion?

4 Find recipes online for salad dressings, such as for honey and mustard dressing. Which ingredients are the emulsifiers?



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FOOD IN FOCUS

FUNCTIONAL PROPERTIES OF EGGS

PURPOSE

To investigate the functional properties of eggs.

Please eggsplain: what happens when you cook an egg?

The average Australian eats around 5.7 eggs a week, but what's actually going on when the egg hits the pan?

...

In cooking, egg whites and yolks perform pretty different tasks

Yolks are great emulsifiers: they can blend substances that don't usually mix, like water or vinegar and oil or fat, making them central ingredients in baking and in sauces like mayonnaise and hollandaise.

Egg whites are multitaskers: they form stiff peaks for meringue, give structure to quiches and flans, bind and leaven batter – the list goes on. Below, we'll look at how cooking and whisking brings about physical changes in egg white proteins that make them so valuable in the kitchen.

Looking closely at egg white proteins

Proteins are made of long chains of amino acids that fold in unique three-dimensional shapes.

Egg white proteins are globular, curled and folded up into roughly spherical shapes held together by weak chemical bonds – the scientific drawings of globular proteins look a bit like tangled balls of Christmas ribbon.

>

When raw, these protein balls float freely around in the surrounding water, giving the egg white a runny consistency.

Heat 'em up

Poach an egg, and the white will quickly turn from clear and runny to white and firm. Heat energy agitates the egg-white proteins, making them bounce around and hit water molecules and other proteins.

These collisions break the weak bonds that held the protein globs curled up, allowing the amino acid chains to partly unwind – a process called 'denaturing'.

When these uncurling proteins bump against one another, new and stronger chemical bonds form between them. As these proteins join together in an interconnected web, the egg white coagulates into a solid.

Here's a really basic analogy: lots of people are standing in a room holding their own hands (the curled proteins), and are able to move around freely. When they let go and grab the hands of those around them, they make an interconnected web and are fixed in place.

It's this web that gives cooked egg white its firm shape, which is why eggs are so good at binding ingredients together.

Beat 'em up

When you whisk egg whites, the same thing happens: proteins denature, uncurl and bond together in a web. But in this case, you're using physical force to unwind the proteins.

The addition of air bubbles into this stretchy egg matrix means egg whites can expand to 8 times their original size. When whisked egg whites are folded gently into meringue, mousse, and cake batters or tipped out of cocktail shakers, the trapped air gives the finished product a light, fluffy texture.

How much heat does an egg need to cook?

While you might not be able to cook an egg on the pavement, it doesn't take a huge amount of heat to denature egg proteins.

Depending on cooking time, egg whites turn that jelly-like consistency and start to denature at around 60 degrees C, and firm up at around 65. Egg yolks behave differently, starting to harden at 62 degrees and setting at around 70.

Some advice for delicious eggs: keep the heat low and don't cook for too long. As more and more proteins denature, the egg becomes firmer and more water is pushed out. Overcooking makes egg whites rubbery and yolks chalky and dry – a far cry from a good egg.

Source: Sima, E 2016, 'Please eggsplain: what happens when you cook an egg?', sbs.com.au, 14 December

ACTIVITIES

1 Identify the functional property of egg yolks.
2 What happens to protein molecules when they denature?
3 At what temperature do egg whites start to harden or coagulate?
4 Why does overcooking make egg yolks dry?



UNIT REVIEW

LOOKING BACK

1 Define the following functional properties of food.
   - **a** Denaturation
   - **b** Caramelisation
   - **c** Gelatinisation
   - **d** Coagulation
2 Identify the functional property of food that occurs when:
   - **a** bread is toasted.
   - **b** rice is boiled.
   - **c** oil and vinegar are shaken to make a dressing.
   - **d** eggs are boiled.
   - **e** toffee is setting.
   - **f** meat is being marinated.
   - **g** egg custard has split or curdled.

FOR YOU TO DO

3 Use diagrams and labelling to explain these processes.
   - **a** Emulsification
   - **b** Gelatinisation
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 Find a simple recipe for aioli. Test it out. Why does the fat ingredient need to be added very gradually?

Principles of food preservation

Most fruits and vegetables last longer if they are kept in the fridge, or are frozen or canned. This is because these methods control the factors that cause spoilage – primarily microbes, enzymes and the environment. The principles of food preservation are summed up by the acronym RACE (see Figure 5.19).

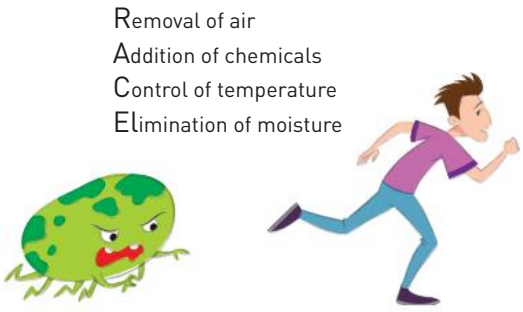


Figure 5.19 Principles of food preservation

Removal of air

Most microbes are found on the surface of a food and require oxygen to survive. Removing air from around food therefore makes microbes less active.

Cling wrap and containers help to exclude air, as do canning, bottling and vacuum packaging.



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Figure 5.20 Vacuum packaging preserves food by removing air

Addition of chemicals

Sugars and salts, and acid ingredients such as vinegar, inhibit microbial growth by entering the food through the process of osmosis and reducing its water content. This why sugar, salt and acid ingredients are commonly found in preserved foods such as jams, pickles and relishes. Some foods such as olives and sundried tomatoes are preserved in oil. For safety reasons, these foods must be dried first, then pickled or marinated with salt and/or vinegar and then stored in oil. In manufactured food products, chemical preservatives can be used to prevent the action of microbes and enzymes and these are indicated in the ingredients list as additives.

Control of temperature

Microbes grow rapidly in warm conditions, especially at room temperature (20 to 25 °C), but pathogens can grow at temperatures of between 5 and 60 °C (the food temperature danger zone). Heating food above 60 °C helps to destroy microorganisms and also denatures enzymes, preventing them from ripening or ageing food.

Cooking, canning and bottling are methods that use heat to preserve food.

Cool temperatures below 5 °C do not destroy microbes or enzymes, but their ability to multiply is inhibited. This is why foods last longer in the refrigerator and freezer.

Elimination of moisture

Both microbes and enzymes need water to be active; hence, reducing the moisture content of a food will help to preserve it. Dried foods use this principle.

Methods of food preservation and storage

The principles of preservation are employed to make foods last longer.

Refrigeration and freezing

Refrigeration/chilling requires food to be stored at between 0 and 5 °C.

Freezing requires food to be stored at very cold temperatures of below –18 °C.

Both methods are suitable for storing a large variety of foods, including fruits, vegetables, milks, meats, fish and cooked meals. The cold temperatures used in both refrigeration and freezing slow microbial and enzyme activity. Frozen food lasts longer than

refrigerated food because the lower temperature converts the water in food to ice, reducing its moisture content and thus the presence of microbes. Frozen foods are also wrapped more tightly, reducing their exposure to air and, thus, microbes.

Cold temperatures do not deactivate microbes and enzymes, and eventually foods will spoil. Refrigeration, in particular, is a relatively short-term method of preservation. For example, cheese can still go mouldy, fruit can still soften and meat can still go slimy in the refrigerator. Once food that has been refrigerated or frozen is removed from storage and is at room temperature, it is prone to spoilage as microbes and enzymes are reactivated.

Heating and pasteurisation

Milk can contain dangerous pathogenic bacteria. For safety, in Australia all milk must be pasteurised. The process involves heating milk rapidly to 72 °C, holding it at this temperature for 15 seconds, and then quickly cooling it to 5 °C. The milk still requires refrigeration because not all microbes are destroyed. Many fresh fruit juices are also pasteurised, as are milk products such as cheese and ice-cream.

UHT (ultra-high-temperature) milk is heated to about 140 °C and held at that temperature for a few seconds as a means of sterilising the milk by deactivating the microbes and enzymes. UHT milk does not need to be refrigerated before opening and can be kept at room temperature for approximately six to nine months in its sterile sealed packaging. Once opened, however, the product must be kept in the refrigerator and will last approximatively seven days (similar to pasteurised milk) because of its exposure to conditions leading to food spoilage. Other foods such as fruit juices and liquid stocks can also be preserved in this manner.

Dehydration is a process of using heat to evaporate most of the moisture from a food so that microorganisms cannot live, grow and reproduce. As a result, dried foods have a long shelf life and can be stored at room temperature. The ancient method of sun drying food is still used today, in addition to more commercial methods. Many foods can be dehydrated, such as fruits, vegetables, herbs, milk and meat.

Canning and bottling

Canning and bottling involves filling a can or toughened glass container with either raw or cooked food. The sealed bottle or can is then heated to a high temperature, around 120 °C, that sterilises the food, kills the microbes present and deactivates the enzymes. The sealed container prevents the re-entry of microbes until it is opened. Many foods can be canned or bottled, including fruits, vegetables, sauces, fish and meats.

Traditional Aboriginal practices for curing meats

Cured meat is meat that has been preserved through ageing, drying, canning, salting, brining or smoking. The goal of curing is to slow spoilage and prevent the growth of microorganisms.

Curing dates back to ancient times, when it was essential for storing meat safely and preventing food poisoning. It is still practised by many cultural groups. Two of the most common cured meats we eat today are bacon and salami.

Curing meats using smoke was a traditional practice used by Aboriginal and Torres Strait Islander peoples. In the smoking process, meats are exposed to smoke produced from burning plant materials such as wood. The heat from the smoke kills microbes and seals the outer layer of the food, making it more difficult for bacteria to enter. Smoke also contains chemicals that can act as preservatives. Usually the meat inside is still raw, but the meat is often left to hang to age it and promote further drying.

Aboriginals used smoke from the coals of open fires and fire pits to preserve meats such as wallabies, possums, emus, goannas, kangaroos, turtles and seafood. Some smaller foods such as witchetty grubs were simply rolled in smoky hot ashes. Kangaroo is difficult to cook and best served 'blue' inside, to keep it tender. Hence, smoking is well suited to kangaroo meat.

HANDS-ON

MICROWAVED STRAWBERRY JAM

PURPOSE

To explain the principles of preservation used in jam making.

MATERIALS

250 g strawberries
¾ cup white sugar
½ lemon

ACTIVITY

1 Wash strawberries, remove green leaves and cut into quarters.
2 Juice the lemon.
3 Place strawberries, lemon juice and sugar in a large microwave-safe bowl.
4 Heat on high, stirring occasionally, for 10 minutes or until the jam reaches setting point. Watch that it does not overflow. To check the setting point, place some jam on a chilled saucer and run a teaspoon through it. If the jam wrinkles and stays separate, it is ready.
5 Fill the hot jam into a small sterilised jar until full. Put the lid on the jar. Allow the jar to cool and put a date label on it.



Shutterstock/Zigzag Mountain Art

QUESTIONS

1 Explain the purpose of the following steps in preserving the strawberries:
- applying high heat
- adding sugar
- adding lemon juice
- sterilising the jars
- sealing the jars.

HANDS-ON

PRODUCE AN ANTIPASTO PLATTER OR SMALL GRAZING STATION

PURPOSE

To describe the method of preservation for a range of foods.

MATERIALS

A selection of ingredients typically served as an antipasto platter. For example:
- sun-dried tomatoes or capsicums
- marinated olives
- marinated artichokes
- a selection of cold meats (e.g. sliced salami, smoked ham, cabanossi)
- dried fruit (e.g. apricots, raisins)
- cheese (e.g. brie, mini bocconcini, fruit cheese, smoked cheese)
- canned stuffed vine leaves
- crackers, bread sticks

ACTIVITY

1 Research online for ideas on how to arrange ingredients for antipasto platters or small grazing stations.
2 Choose a platter, marble slab, chopping board or cake plate on which to arrange your ingredients.
3 Arrange the items in groups on the platter, implementing elements and principles of design such as having foods grouped into different shapes and using contrasting colours and textures. Also try to have a focal point.



Shutterstock.com/Lisovskaya Natalia

QUESTION

Copy the table below and identify the methods of preservation that have been applied to the following foods.

Food	Method of preservation
Cold meats	*Curing* *Refrigeration*
Cheese	
Dried fruit	
Canned stuffed vine leaves	
Marinated olives	



UNIT REVIEW

LOOKING BACK

1 Identify whether the following statements are true or false.

- **a** Microbes are destroyed at 5 °C.
- **b** Enzymes are a type of microorganism.
- **c** High temperatures above 60 °C deactivate most microbes and enzymes.
- **d** Microbes are often found on the surface of food.
- **e** Vinegar is an acid ingredient.
- **f** Sugar and salt are two additives that can help to preserve food.
- **g** Chilling is storing food at –18 °C.
- **h** Drying food helps to preserve it because moisture is removed.
- **i** Pasteurisation destroys harmful bacteria.
- **j** Aboriginal people have traditionally used smoking as a method for preserving meats.

FOR YOU TO DO

2 Find examples of three food products that use the following methods of preservation.

- **a** Canning
- **b** Bottling
- **c** Drying
- **d** Smoking
- **e** Freezing
- **f** Chilling
- **g** UHT (ultra-high-temperature) treatment
- **h** Pasteurisation

3 Copy and complete the table below by indicating (✓) which main principle of preservation is used in each preserving method.

Principles of preservation	Methods of preservation				
	Drying	Chilling	Freezing	Canning	Salting, pickling, jam making
Removal of air					
Addition of chemicals					
Control of temperature					
Elimination of moisture					

TAKING IT FURTHER

4 Investigate how to freeze fresh vegetables such as carrots and broccoli. Explain the benefits of freezing vegetables.

5 Explain **a** why and how some vegetables are blanched before freezing and **b** how frozen vegetables should be packaged.

Menu planning considerations

Menu planning is the selection of a menu for an event.

Scale of function

Functions can involve a small or large number of guests. It can be difficult to feed many people at one time. Some strategies that could be used include:

- offering a limited function, buffet or finger food menu
- preparing foods in advance, such as chilled desserts
- using methods of cooking that require less constant attention, such as baking and roasting
- using convenience foods when appropriate
- using platters for customers to self-serve.

Type of menu

A menu is a list of dishes to be served at a given meal – breakfast, lunch, dinner, snacks.

Different types of establishments offer different meal options; for instance, cafés tend to provide breakfast and lunch menus, while restaurants and bistros cater more for lunch and dinner. Some establishments such as hospitals and cruise liners offer menus for all meals.

Dishes on café or restaurant menus can be grouped by course or according to the main ingredient, type of dish or method of cooking. Caterers often only group by course:

- Appetiser: tasty food that is not too filling and stimulates the desire for more food.

- Entrée (or first course): usually a fish, soup or salad in small portions.
- Main course: usually meat, fish or poultry with vegetable accompaniment.
- Dessert: sweet dishes, fruit or cheese.

Different food service and catering operations offer different types of menus depending on their customer needs and the level of service they provide.

Table d'hôte menus are common for functions or large-scale catering. Customers get less choice, but it makes it easier to plan, prepare and serve dishes. Similarly, a buffet menu is suitable for large-scale functions, as no table service is involved and it gives customers more food choices.

Restaurants tend to offer à la carte menus to meet individual customer needs and to demonstrate the skill of the chef. Takeaways, fast food outlets and canteens also offer such menus, although dishes tend to be much simpler to prepare.

How food is served to a customer varies with the menu and level of service provided. Some formal establishments offer silver service where an empty plate is presented to the customer and the food attendant serves all the food using a fork and spoon, at a buffet a customer may serve themselves, and at bistros customers help themselves to knives and forks.

Table 5.7 Types of menus

Type of menus	Characteristics	Common operators
À la carte	• Customer selects what they want to eat from an extensive list of dishes available, usually arranged in courses • Dishes priced separately • Customers have more options • Food is cooked to order • Service may take longer • Dishes may be more expensive	Restaurants Cafés Bistros Takeaway food outlets Canteens
Table d'hôte	• A restricted menu • Offers a small number of courses – usually two or three • Offers limited choice within each course • Set price • Faster service • Controls catering costs for operators	Restaurants Cafés Function centres Bistros Caterers
Function or banquet	• For special occasions such as weddings and high teas, or when sharing food as a group • Usually a fixed menu with little or no choice • Customer usually selects a menu package • Priced per head • Choice of sit-down meal, buffet or finger food service • All guests served at the same time	Function centres Caterers Restaurants
Du jour menu	• Menu changes daily • Usually a limited choice • Commonly presented on a blackboard as 'special' • Used by operators to make use of seasonal produce, prevent food wastage, trial new recipes or to provide variety to their usual menus	Restaurants Cafés Food trucks Takeaway food outlets
Cyclic	• 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 • Usually well-balanced nutritionally	Schools Canteens Hospitals Nursing homes Camps Airline catering Cruise ships Caterers
Degustation/ tasting	• Sampling many courses of small portions of food that show off the chef's specialities	Restaurants Caterers

HANDS-ON

À LA CARTE MENUS

PURPOSE

To investigate à la carte menus available in cafés and club bistros.

Brekkie

BIRCHER MUESLI 13
Toasted muesli soaked in orange juice and mixed with Greek yoghurt, ricotta cheese, honey, appleslaw and mixed seeds

EGG ON TOAST 9
Poached, scrambled or fried eggs on two slices of sourdough toast

BRUSCHETTA 14
Avocado, tomato, feta and mushroom salsa and balsamic glaze on grilled sourdough

OMELETTE 14
With sautéed mushrooms, tomato, onion and spinach and two slices of sourdough toast

FRENCH TOAST 16
With caramelised banana, strawberry, house-made ice-cream and maple syrup

EGGS BENEDICT 19
Poached eggs with hollandaise sauce and smoked, thick-cut ham on two English muffins

EGGS FLORENTINE 19
Poached eggs with hollandaise sauce and sautéed spinach on two English muffins

EGGS ROYALE 19
Poached eggs with hollandaise sauce and smoked salmon on two English muffins

SUNSHINE AVOCADO 16
Smashed av, grilled heirloom tomato, zucchini, beetroot, feta, mixed seeds and lemon zest on soy linseed bread with a serve of homemade relish

BREKKIE BURRITO 16
Egg and chorizo scramble, hash brown, avo, tomato salsa and hot sauce all wrapped in a house-made tortilla

PUMPKIN, SWEET POTATO AND SWEETCORN FRITTERS 18
With a poached egg, smashed av and beetroot relish on two slices of sourdough toast

SPANISH BAKED EGG 17
Super slow cooked spicy beans, sautéed chorizo, onion, feta and two slices of sourdough toast

THE BIG BAD 21
Eggs your way, bacon, chorizo, button mushrooms, vine-ripened tomato, potato hash, homemade spicy beans and two slices of sourdough toast

SUPER BOWL 20
Quinoa, avo, seeds, kale, broad beans, beetroot, halloumi and poached egg

SIDES
Egg, sautéed baby spinach, grilled tomato, mushroom, feta, avocado 3
Bacon, ham, halloumi, hash brown, baked beans 4
Grilled chicken, chorizo, smoked salmon, chips 6

Figure 5.21 Café à la carte breakfast menu

>



STARTER

Garlic bread V 5
Four pieces of ciabatta toasted with butter and fresh garlic and herbs

Focaccia V 9
House-made focaccia bread lightly toasted and served with olive oil and balsamic

BISTRO CLASSICS

Chicken schnitzel 18
A delicious 250 g chicken schnitzel covered in golden panko crumbs and served with chips, house salad and choice of sauce

Lamb shank 21
Slow-cooked and falling-off-the-bone lamb shank in a red wine and rosemary jus, served with mash and house greens

Chicken parmigiana 22
A delicious 250 g chicken schnitzel topped with a rich tomato sauce, honey-glazed ham and mozzarella and served with chips and house salad

BBQ beef ribs 36
The beast! A 600 g rack of juicy beef ribs in a sticky BBQ bourbon glaze and served with chips and salad

Fish and chips 15
Beer-battered snapper fillets served with chips and lime aioli

Meatball sub 17
House-made baguette stuffed to the brim with meatballs, bacon and mozzarella and served in a rich Napolitana sauce finished with melted cheese

Philly cheesesteak nachos 18
House-made tortilla chips smothered with smoky BBQ marinated steak, diced capsicum, spicy jalapenos, onion, tomato and Philly cheese sauce

Roast of the day* GF 18
Served with heirloom roasted root vegetables, hasselback potato and red wine gravy
*Please see the specials board

FROM THE GRILL

Grilled Atlantic salmon GF 26
Fresh Atlantic salmon fillet in a sesame seed crust served with mash, sautéed kale and zucchini ribbons and finished with a lemon cream sauce

450 g T-bone 35
Wagyu T-bone steak cooked to your liking and served with chips and salad or mash and steamed vegetables

Grilled snapper GF 28
Grilled snapper served with roasted chat potato, sautéed greens and peperonata

300 g Angus scotch fillet GF 32
Juicy MSA certified 300 g Angus scotch fillet cooked to your liking with chips and salad or mash and steamed vegetables

Pork loin 26
Tender pork loin stuffed with sausage, fennel and chilli, drizzled with a red wine jus and served with mash and sautéed vegetables

V **Vegetarian** GF **Gluten free**

Figure 5.22 Club bistro à la carte menu

QUESTIONS

1 What would you select from the breakfast menu? Why?
2 What options are there for those who do not want eggs?
3 What would you select from the bistro menu? Why?
4 Define the term 'à la carte menu'.
5 Suggest advantages and disadvantages of à la carte menu for the:
   - customer
   - hospitality establishment.

Facilities, staff, time and money

Facilities: The more cooking facilities you have, the more options you have to offer foods cooked by different methods of cookery on a menu. Food trucks, because of their limited space and facilities, usually offer a very limited menu, and most of the food preparation is done off-site in a commercial kitchen.

Staff: Kitchens with chefs can offer more complex menus than those with cooks. Similarly, establishments with more kitchen staff can often offer more items on their menus.

Time: The time available to cook and serve meals can affect menu options. Often, food must be prepared in advance, particularly when a lot of meals have to be served at one time. For instance, many desserts on a menu are often prepared first because of the preparation time involved. This is why work plans are important. Barbecues, roasts and baked dishes are also good cookery methods when a lot of people

need to be fed at one time. Convenience foods such as muffin premixes may be used to save time and when bulk quantities are needed.

Money: The money a customer can afford to spend and the food budget of a food establishment often determine the ingredients that can be used in recipes on a menu. For instance, hospitals often have a limited food budget and use basic cuts of meats and inexpensive fruits and vegetables in their menus.

Time of year, occupation, gender

Time of year: In winter, menus may include more soups and warm desserts, while more salads and cold desserts are available in summer. The time of year also affects what foods are in season. Seasonal foods are more available, cheaper and more flavourful than those that are out of season.

Occupation: People engaged in active occupations, such as construction workers, require a higher energy intake than those who have more sedentary jobs. Hence, the café in an industrial area may have more pie options than a café in an office block.

Gender: Men generally have a higher energy requirement than women because of the larger size of their physique.

HANDS-ON

TABLE D'HÔTE MENUS

PURPOSE

To investigate the use of a table d'hôte menu in a restaurant.



Figure 5.23 Fine-dining table d'hôte menu

QUESTIONS

1. What would you select as the least expensive option? Why?
2. How does the menu cater for different consumer food preferences?
3. Explain how table d'hôte menus differ from à la carte menus.
4. Suggest reasons why a restaurant may offer a table d'hôte menu.

Recipe development

Developing recipes that are reliable for large-scale catering is essential for the success of any food service and catering organisation. How recipes are developed or modified is often dependent on the type of establishment, the resources it has available (staff, facilities, budget) and, importantly, the needs of its customers. For example, a restaurant chef may 'deconstruct' a basic recipe for apple crumble to appeal to diners who want to experience current food trends, while a hospital cook may produce a low-fat, low-sugar version for patients with heart disease. The hospital may also use canned apples, as they may be cheaper and easier to store than fresh apples.

Once tested and proven to be reliable, recipes in the food service and catering industry are provided as standard recipe cards. These have clear instructions that allow others to follow them and produce a consistent product. Standard recipes can be set out in a variety of ways, but most contain the same key information, which includes:

- name of the recipe
- required quantities of ingredients
- the method in procedural text
- the quantity it makes (portions).

They may also include the cost per portion – useful for setting menu prices and adhering to budgets – as well as a picture of the final product to aid food presentation. Increasingly, spreadsheet programs are being used as a format to make it easier to calculate quantities, order ingredients and cost recipes.

Recipe:	**Sweet potato soup**	Menu price:	$8.50
Restaurant:	Faraday's	Number of serves:	16
Recipe card:	001	Cost per serve:	$0.86
Cost date:	22/8/2019	Food cost:	10.12%
		Gross profit:	$7.64

Ingredients	Quantity	Unit	Unit cost $	Total cost $
Olive oil	0.25	Lt	6.40	1.60
Onion	8	Ea	0.62	5.00
Garlic (crushed)	0.1	Kg	75.00	0.75
Curry powder	0.2	Kg	1.60	0.32
Sweet potatoes	5	Kg	0.80	4.00
Chicken stock	0.5	Lt	0.60	0.30
Coconut cream	0.5	Lt	3.50	1.75

Total ingredient cost: **$13.72**
/ 16 serves = $0.86 cost per serve

Method

1. Heat the oil in a large saucepan over medium-high heat.
2. Sauté the onion and garlic.
3. Add the curry powder, stirring for 1 minute or until aromatic.
4. Add the sweet potato and stock. Stir to combine. Bring to the boil.
5. Reduce heat to low. Simmer, partially covered, for 15 minutes or until the sweet potato is tender. Remove from heat.
6. Using a food processor or hand blender, puree the soup in batches until smooth.
7. Return the soup to saucepan over low heat. Stir in the coconut cream (do not allow to boil). Add more stock if soup is too thick. Season.
8. Serve.

Figure 5. 24 A standard recipe card

Ingredients

Ingredients in a recipe should be of high quality and preferably fresh, but in large-scale production some prepared ingredients may be more viable, such as frozen vegetables. The list of ingredients should indicate the quantity needed and specify features required, such as *red* capsicums or *small* onions.

When modifying ingredients to provide healthier options, consider low-fat, low-sugar and high-fibre ingredient alternatives. Ingredients also need, modification when meeting special dietary needs, such as replacing cow's milk with soy, rice or almond milk for those with a lactose intolerance.

Method

The method in a recipe provides instructions on preparing and cooking the ingredients. For a successful result, the method should be in a logical order and be clear to follow with step-by-step instructions.

The method of cookery chosen for a recipe will affect the colour, taste, flavour and nutritional value of the foodstuff being cooked. When serving a large number of people at one time, baking and roasting may be 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

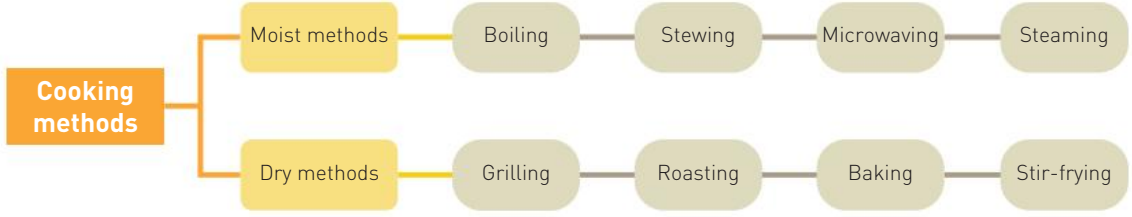


Figure 5.25 Methods of cookery

HANDS-ON

INVENTION CHALLENGE: PRODUCE AN INNOVATIVE SCONE RECIPE SUITABLE FOR A MORNING TEA FUNCTION

PURPOSE

To develop/modify and prepare a recipe suitable for a large-scale catering function.

ACTIVITY

In pairs:

1. Use a basic scone recipe provided by your teacher.
2. Brainstorm and research ideas to modify the recipe ingredients and/or method. For instance: matcha green tea, vegan scones, blueberry and lavender scones, and chocolate chip and zucchini scones.
3. Type up your recipe suggestion, preferably on a spreadsheet.
4. Order ingredients and make a list of required equipment.
5. Trial the recipe.
6. Present the recipe for evaluation by your peers.
7. Rewrite the recipe with any changes based on feedback.

QUESTIONS

1. What quantities of each ingredient in the final recipe would be required if you need to make 120 scones?
2. How can the scones be stored so that they can be made ahead of the event?

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 Explain the factors you need to consider when planning menus for different customers.

FOR YOU TO DO

4 Plan a blackboard menu with four breakfast options for a café.
5 Plan a three-day menu (breakfast, lunch and dinner) for Year 9 and 10 students at school camp. The food will be prepared and served in a mess hall. Make sure you do not include nut products.

TAKING IT FURTHER

6 You are catering for a retirement dinner. Prepare a professional-looking three-course function menu for the occasion. Set a price for the menu.

HANDS-ON

RUNNING A SAUSAGE SIZZLE

PURPOSE

To design, plan and prepare a sausage sizzle for a large-scale function, applying the principles of food storage, hygiene and safety.



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ACTIVITY

1 Read the article below about running a successful sausage sizzle.
2 Organise a class fundraiser sausage sizzle by following the tips in the article.
Make decisions regarding the:
- cause
- location, date and time
- menu.

3 Allocate responsibilities and rosters to class members, such as:
- promoters
- set-up and pack-down crew
- food prepping crew
- cooking crew.

FIVE TIPS FOR A SUCCESSFUL SAUSAGE SIZZLE

The sausage sizzle is an Aussie institution and a relatively easy way to fundraise for a sporting team, group or charity. Follow these simple tips to run a successful sausage sizzle.

1 **Book your spot.** Businesses are often very keen to support fundraisers and may allow you to set up outside their stores. Bunnings, for example, hosts sausage sizzles around the country and provides some of the equipment needed. Also consider locations such as local sports fields or markets. You may need to notify your local council to ensure you are aware of food safety requirements and to obtain any necessary permits.
2 **Advertise.** Let supporters and the community know of the event in advance, as well as on the day. Set up clear signage for prices and the reason for the fundraising.
Regarding food, contact local suppliers for support. Consider vegetarian, vegan, gluten-free, halal and kosher options.
3 **Have the right gear.** Make sure to consider:
- the barbecue
- spare gas bottles
- a float with plenty of change and/or an EFTPOS machine
- rubber gloves
- barbecue utensils
- serviettes
- hand-sanitising wipes or gels
- eskies with plenty of ice to keep meat and drinks cool (separately, of course!)
- a large trestle table for display, supplies and serving
- a gazebo
- rubbish bags.

4 **Practise good food safety.** Check your council's website for specifics, but here are some general tips for food safety.
- The person handling money should not touch the food.
- Food handlers should wear disposable rubber gloves and change them regularly.
- The barbecue should be clean and dry before you begin cooking.

>

- If there is warm running water available, food service authorities dictate that hands are washed regularly. Otherwise, hand sanitisers are needed.
- Protect all food products from contamination by keeping them covered.
- Keep the uncooked meat cool and do not keep cooked food out for too long.
- Always use utensils, such as tongs, to handle food. You should have separate utensils for raw and cooked foods.
- Make sure all food-handling utensils are clean and dry.
- Dispose of any rubbish in a timely manner.
- Keep your cooking and service areas clean.



Figure 5. 26 Sausage sizzles, like food trucks and specials boards in restaurants, offer 'du jour' type menus.

5 **Set up a production line.** Being organised means shorter queues and will help you to avoid tripping over each other. Have:
   - one or two people cooking sausages
   - one person cooking onions
   - one person putting the sausage in the bread and squirting the sauce (or let the consumers do that in a separate area)
   - one person taking orders and collecting money.

QUESTIONS

1 Why is hygiene important?
2 Plan the sausage sandwich – what types of sausage(s), bread and sauces will be used?
3 How should the sausages be stored at the sausage sizzle? Justify your response.
4 Copy and complete the table below. Evaluate the success of your sausage sizzle by ranking the following criteria with a grade A to E and then write a comment to justify your grade.

Criterion	Grade	Comment
Hygiene practices were followed		
Safety practices were followed		
Customers were satisfied with the quality of the food		
Customers were satisfied with the speed of service		

5 Suggest changes that could be made if the sausage sizzle event were to be repeated. Explain why.

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Chapter review

LOOKING BACK

1 List three profit-making food service ventures.
2 Explain how the food service and catering industry contributes to society.
3 Describe the roles of two back-of-house career opportunities in the food service industry.
4 Describe the roles of two front-of-house career opportunities in the food service industry.
5 Name the NSW legislation that protects the safety of employees.
6 Name the NSW legislation that protects consumers from eating unsafe foods.
7 Outline three causes of food deterioration and spoilage.
8 Outline two reasons for cooking food.
9 Name a functional property of the following.
   a Carbohydrates
   b Proteins
   c Lipids
10 Outline four considerations when menu planning.

FOR YOU TO DO

11 Complete the four principles of preservation.
   R
   A
   C
   E
12 If you were in charge of catering for a school or sporting canteen, list 10 nutritious menu items you would include.
13 Plan a dinner menu (main course, dessert and beverage) that could be served on an airline flight.
14 Draw and describe how you could modify a basic cupcake for a child's birthday party.

TAKING IT FURTHER

15 Plan and prepare a Mother's Day breakfast menu suitable to serve on a tray. Justify your food selections.

Recipe	Techniques	Equipment	Dietary considerations
Polka dot biscuits 	Sift Baking Creaming	Baking tray (2) Large bowl Electric beater Sifter Metal spoon Wire rack	V
Croque madame 	Dry frying	Baking tray Baking paper Chopping board Butter knife/spatula Frypan Egg flip	
Club sandwich 	Toasting Slicing Tearing	Frypan Paper towel Tongs Toaster Butter knife/spatula Sharp knife Long toothpicks to serve	
Lamb souvlaki 	Barbecuing/ grilling Cubing Marinating	Knife Chopping board Mixing bowl Cling wrap Baking tray Skewers Glazing brush Foil Paper towel	
Buffalo wings 	Marinating Roasting Basting	Baking tray Foil Knife Resealable bag Wire rack Small bowl Glazing brush Spoon	
Ricotta gnocchi 	Pasta making Boiling	Mixing bowl Tablespoon Large pot Small pot Spatula/fork Knife Strainer Chopping board Pastry board Metal spoon	V
Poached pears with chocolate sauce 	Poaching Plating	Peeler Medium-sized pot Small pot Baking paper Sharp knife (2) Slotted spoon Wooden spoon Serving plates (2)	V GF
Rocky road 	Melting chocolate Chilling	Bar tins (2) Baking paper Microwave-safe bowl Fork Chopping board Spatula Scissors	V GF if using popcorn and glace cherry options. Some marshmallow brands may contain gluten.

KEY

V = vegetarian GF = gluten free

Note: All recipes are nut free.

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RECIPE

Polka dot biscuits

These biscuits often tempt customers waiting at the counter in a café. They are also suitable for morning teas and cake stalls.

Preparation time 10 minutes **Cooking time** 15 minutes **Makes** 12

INGREDIENTS

125 g butter, chopped, at room temperature
½ cup brown sugar
½ cup caster sugar
1 egg
1 teaspoon vanilla extract
1¼ cups plain flour
¼ cup self-raising flour
½ teaspoon bicarbonate of soda
180 g packet of Smarties

METHOD

1. Preheat oven to 180 °C. Lightly grease 2 large baking trays.
2. In a large bowl, using an electric mixer, **cream** butter and sugars together until light and fluffy.
3. Beat in egg and vanilla until combined.
4. Sift flours and soda together. Lightly fold into the creamed butter.
5. Roll level tablespoonfuls of dough into balls. Arrange on prepared trays 4 cm apart.
6. Flatten slightly. Top with 3 or 4 Smarties.
7. Bake, 10–12 minutes, until golden.
8. Cool on trays, 5 minutes, before transferring to a wire rack to cool completely.
9. Store in an airtight container.

QUESTIONS

1. In reference to the sensory properties of food, explain why these biscuits would be suitable for cafés and cake stalls.
2. How should these biscuits be stored? Justify your answer.
3. Explain the role of the following ingredients in the recipe:
   - sugars
   - egg
   - self-raising flour
   - bicarbonate of soda.
4. Explain the difference between beating and folding.



Mark Fergus

RECIPE



Mark Fergus

Croque madame

Prepare this classic French café dish and investigate the functional properties of the protein and carbohydrate ingredients. Poach the egg for a variation or leave it out to make croque monsieur.

Preparation time 5 minutes **Cooking time** 15 minutes **Serves** 2

INGREDIENTS

- 4 slices toast-cut bread or sourdough
- 2 teaspoons Dijon mustard
- 50 g shaved smoked leg ham
- 60 g thinly sliced gruyere cheese
- 2 tablespoons butter
- 2 eggs
- 2 teaspoons chopped parsley



METHOD

1. Preheat oven to 150 °C. Line a baking tray with baking paper.
2. Place 2 slices of bread on a board. Spread each with mustard.
3. Top each with ham and cheese. Top with remaining slices of bread.
4. Melt half the butter in a small, non-stick frypan over medium heat.
5. Cook each sandwich for 2 minutes each side or until golden.
6. Transfer to prepared tray to keep warm.
7. Melt remaining butter in pan over medium-high heat.
8. Fry eggs for 2–3 minutes or until white is set and yolk is still soft.
9. Top each sandwich with an egg. Sprinkle with parsley and serve.

QUESTIONS

1. List the equipment required to prepare this dish.
2. Identify the ingredients high in protein in this recipe.
3. Identify a carbohydrate ingredient in this recipe.
4. Using the fried egg as an example, explain the functional property of coagulation.
5. Using the bread as an example, explain the functional property of dextrinisation.
6. Besides ham, suggest other foods that are preserved by smoking.
7. Find out the meaning of these French words: croque, madame, monsieur.

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RECIPE

Club sandwich

The club sandwich is believed to have originated in New York social clubs in the 1880s. It is traditionally made from cooked or cured turkey or chicken and uses toothpicks to hold it together. Today, many variations exist, but the tradition of using three slices of bread and two layers of filling is still followed.

Preparation time 10 minutes **Cooking time** 10 minutes **Serves** 2

INGREDIENTS

6 slices multigrain bread
2 rashers short-cut bacon
¼ cup whole egg mayonnaise
2 iceberg lettuce leaves
125 g shaved turkey breast
1 tomato
4 long toothpicks

METHOD

1. Slice tomato and tear lettuce.
2. Heat a large, non-stick frypan over medium-high heat. Add bacon and cook, turning occasionally, for 4–5 minutes or until crisp. Drain on paper towel.
3. Toast bread.
4. Place 2 slices toast on a board. Spread with half the mayonnaise and top with half the lettuce. Top with turkey and another slice of toast.
5. Spread top with mayonnaise. Top with bacon, tomato and remaining lettuce. Spread 1 side of remaining toast with remaining mayonnaise. Place, mayonnaise-side down, on sandwiches.
6. Secure sandwiches with toothpicks. Cut in half or quarters and serve.

QUESTIONS

1. What advice would you give a child to ensure safe use of an electric toaster?
2. Identify the high-fibre foods in the recipe.
3. Explain the role of the egg in the mayonnaise.
4. Identify the cured meats used in this recipe.
5. Give examples of methods of curing meats.
6. Suggest how the recipe can be modified for the following dietary requirements:
   - no-pork products
   - vegetarian
   - low fat.



Mark Fergus



Mark Fergus

RECIPE

Lamb souvlaki

Prepare and present this classic Greek street food, which is popular on food truck and takeaway menus.

Preparation time 15 minutes **Cooking time** 20 minutes **Serves** 2

INGREDIENTS

200 g lamb (leg or rump steaks)
1 tablespoon olive oil
1 tablespoon lemon juice
1 garlic clove, chopped
½ teaspoon dried oregano
¼ teaspoon dried thyme
¼ teaspoon paprika
Salt and pepper
¼ cup tzatziki dip
2 bamboo or metal skewers
2 pita breads
½ tomato
1 cup frozen chips

TIP: If using bamboo skewers, soak in cold water before use to prevent burning.

METHOD

1. Cut meat into 2 cm cubes.
2. Whisk together lemon juice, oil, garlic, oregano and thyme in a mixing bowl. Season with salt and pepper.
3. Add lamb and toss to coat. Cover and refrigerate, preferably overnight.
4. Preheat oven to 220 °C. Spread chips on an oven tray and bake until golden.
5. Thread meat onto skewers.
6. Dice tomato.
7. Barbecue, grill or dry fry lamb skewers 2–3 minutes each side, brushing regularly with marinade, until golden brown.
8. Place the meat on a kitchen paper towel to absorb excess oil.
9. Warm pita bread on the barbecue or wrap in foil and place in a warm oven for a few minutes.
10. To wrap up the souvlaki, place the pita on a large piece of baking paper or foil. Spread tzatziki and then add the meat, removing the skewers, and top with tomato and chips.

QUESTIONS

1. Identify two functions of the marinade.
2. Describe steps to take to avoid cross-contamination when preparing and storing the meat for the recipe.
3. Name a typical street/takeaway food from the following cultural cuisines:
   - Chinese
   - Italian
   - North American
   - South American
   - English
   - French
4. Suggest how some of the ingredients in the recipe can be altered to provide an alternative menu option.
5. Give five reasons why this recipe is suitable for a takeaway food menu.

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RECIPE

Buffalo wings

These make great finger foods for a function.

Preparation time 10 minutes **Cooking time** 30 minutes **Serves** 2 (as a shared entrée)

INGREDIENTS

½ cup plain flour
1 teaspoon sweet smoked paprika
½ teaspoon ground cumin
½ teaspoon dried thyme
½ teaspoon garlic powder
Sea-salt flakes and freshly ground black pepper, to season
500 g chicken wings
⅓ cup tomato sauce
50 g unsalted butter, melted
Blue cheese or ranch dressing, to serve

TIP: Replacing the flour with baking powder will produce a crispy chicken. Make sure to use baking powder and not baking soda.

METHOD

1. Preheat oven to 220 °C and line an oven tray with foil.
2. Using a sharp knife or kitchen scissors, cut each wing into 3 pieces at the joints, discarding the tips.
3. Put flour, paprika, cumin, thyme, garlic powder, salt and pepper in a large ziplock bag.
4. Add chicken to bag, seal, and then shake well to coat.
5. Arrange chicken on a wire rack over the prepared tray.
6. Bake for 20 minutes or until lightly browned.
7. Put tomato sauce and butter in a small bowl and stir until combined. Using a pastry brush, baste chicken with tomato sauce mixture. Bake for a further 10 minutes, basting every 3 minutes or until chicken is glossy and sticky.
8. Serve chicken with dressing on the side.

QUESTIONS

1. Outline safety practices that need to be implemented when using sharp knives or scissors.
2. Identify how the spices in the ingredients list have been preserved.
3. Why is it important that chicken be cooked thoroughly?
4. Suggest five other dishes that could be added to a finger food menu for a corporate function.



Mark Fergus

RECIPE



Mark Fergus

TIP 1: If you keep 1 tablespoon of the cooking water from the pasta and add it to the cooking sauce at the end, the olive oil in the sauce and the starch in the water will emulsify to thicken the sauce so it clings more easily to the gnocchi.

Ricotta gnocchi

Gnocchi are suitable for both small- and large-scale catering. You can prepare them in advance and then boil them just before service. Serve as a main or an entrée.

Preparation time 15 minutes **Cooking time** 10 minutes **Serves** 2

INGREDIENTS

Gnocchi

125 g ricotta
⅓ cup grated parmesan cheese
½ cup flour, plus more for dusting
1 egg
¼ teaspoon salt

Tomato sauce

2 teaspoons olive oil
¼ teaspoon minced garlic
¼ onion, finely diced
1 cup canned crushed tomatoes
1 teaspoon dried Italian herbs
Salt and pepper, to season
Parmesan, to serve

TIP 2: Uncooked gnocchi can be frozen for later use. Arrange the gnocchi in a single layer on a baking tray and place in the freezer. Freeze until solid, about 3 hours, and then store in an airtight container for 4–6 weeks in the freezer.

METHOD

Gnocchi

1. In a bowl, combine all the gnocchi ingredients except the flour.
2. Use a spatula to mix until the egg is partially mixed into the ricotta.
3. Stir in flour, 1 tablespoon at a time, until a soft dough forms.
4. Bring a large pot of salted water to a boil.
5. Roll out dough (still slightly sticky), using flour and your hands, into a 2 cm-wide log. Cut log into 2 cm pieces.
6. Boil gnocchi until a few seconds after it rises to the top and strain. The gnocchi should have increased in size.

Tomato sauce

1. Heat the olive oil over medium-high heat.
2. Add the garlic and onion. Sauté for 2–3 minutes until the onion is translucent.
3. Add the remaining ingredients and simmer for 10 minutes.
4. Add the gnocchi back to the pot it was boiled in. Add enough sauce to coat the gnocchi and gently stir for 30 seconds.
5. Serve with any extra sauce and parmesan.

QUESTIONS

1. With reference to the functional property of gelatinisation, explain why the gnocchi increases in size during the cooking process.
2. Using the principles of preservation, explain why the gnocchi lasts longer when frozen.
3. If this recipe is used as an entrée for a function menu, plan a second and third course.

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RECIPE

Poached pears with chocolate sauce

Prepare and present this dessert to appeal to the senses.

Preparation time 10 minutes **Cooking time** 20 minutes **Serves** 2

INGREDIENTS

2 small to medium pears
2 cups water
½ cup sugar
½ cinnamon stick
½ split vanilla pod
1 clove

Chocolate sauce

50 g dark chocolate
⅓ cup cream
1 teaspoon brown sugar



TIP 1: * A cartouche is a sheet of baking paper cut into a round shape slightly smaller than the saucepan. This will keep the pears in the syrup and prevent them from browning. A cartouche also reduces evaporation and prevents a skin from forming.

TIP 2: You could also add some poaching liquid to the sauce.

METHOD

1. Peel the pears and cut the base to make it easier to stand the pears for service.
2. Place water and sugar in a saucepan over a high heat. Heat water until sugar has melted and the water is clear.
3. Turn down heat and add pears and spices.
4. Place a cartouche* over the pears. Simmer for approximately 10–15 minutes or until the pears are cooked. Test pears by gently inserting a knife. If the knife slides in and out easily, the pears are cooked.
5. Carefully remove pears from the syrup with a slotted spoon and set aside.
6. Spoon some chocolate sauce on a serving plate and then place a pear on top.

Chocolate sauce

1. Combine the chocolate, cream and sugar in a small saucepan over medium-low heat.
2. Cook, stirring, for 2–3 minutes or until the chocolate melts and the sauce is smooth.

QUESTIONS

1. Why do pears brown when peeled?
2. What are other foods that can be poached?
3. Discuss reasons for cooking pears.
4. Suggest a main meal that would complement the poached pears.
5. Research food presentation techniques for plating the recipe.



Mark Fergus



Mark Fergus

RECIPE

Rocky road

Prepare and package this cake stall and special occasion favourite.

Preparation time 10 minutes **Cooking time** nil **Makes** 2 tins

INGREDIENTS

250 g milk chocolate melts

10 g coconut oil or copha

150 g Cadbury Clinkers cut in half or caramel popcorn or chopped tea biscuits

50 g marshmallows cut in half

100 g raspberry lollies or glace cherries



TIP: Use kitchen scissors to cut the marshmallows.

METHOD

1. Line 2 bar tins with baking paper or foil.
2. Chop the Clinkers, marshmallows and raspberry lollies in half and set aside.
3. Place the chocolate and coconut oil or copha into a heatproof, microwave-safe bowl.
4. Heat in microwave for 1 minute, then stir. Repeat this step, with 10-second bursts in the microwave until the chocolate is melted, making sure to stir with a fork each time.
5. Stir through the Clinkers, marshmallows and raspberry lollies.
6. Spread the mixture into the prepared bar tins and place in the fridge for 30 minutes or until completely set.
7. Cut rocky road into slices and then package them attractively.

QUESTIONS

1. Identify functions where rocky road would be an appropriate menu item.
2. This recipe makes two packages. Calculate the quantity of ingredients you need to order to sell 100 packages at a school fete.
3. Nuts are traditionally included in rocky road. Suggest why this recipe was modified to include no nuts.
4. Describe how the rocky road can be packaged for visual appeal.
5. Modify the recipe to make a healthier rocky road.



CHAPTER 6

Food for specific needs

FOCUS AREA:

Everyone has a need for food. Who you are, where you live and what you do can all have an impact on the foods you need. Sometimes the foods we need will vary because of specific circumstances. In this chapter we will delve into those circumstances and examine effective food solutions for a range of specific needs.



CHAPTER CONTENT

In this chapter you will:

investigate
- the circumstances that bring about specific food needs
- the role of nutritionally modified foods
- the role support networks play for individuals with specific food needs

describe the specific nutritional requirements needed though the life cycle

discuss the impact of food allergies and intolerances on individuals

design, plan and prepare foods for specific circumstances

demonstrate
- knowledge of the correct equipment and techniques to use in food preparation
- how to prepare food safely and hygienically.

Pre-test quiz

RECIPES
- Cricket carrot cake
- Hot cross buns
- Butter-less butter chicken
- Moroccan chicken and roast vegetable salad
- Vegetarian sausage rolls
- Energy balls
- Watermelon pizza
- Chocolate apple muffins

FOOD FACTS

Two billion people around the world regularly eat insects.

Babies have three times more taste buds than adults.

Qantas produces around 93 000 meals each day. Vegetarian, vegan, halal, kosher, diabetic, gluten-free, child meal or fruit platter are all options available by pre-ordering.

Eating enough carbohydrate before, during and after exercise helps to maintain energy levels, delay fatigue during exercise and support a more rapid recovery.

One in 10 babies born in Australia today will experience some form of food allergy, with approximately one in three people being affected at some point in their lifetime.

No cookies or bread are allowed on board a spacecraft. All the little crumbs that fall from these kinds of foods go into the spacecraft's zero-gravity conditions and can get stuck in the buttons, creating huge problems.

Dog meat is a popular food in China and is also found on the menu in the mountainous regions of the Philippines.

FOOD WORDS

anaemia condition resulting from an inadequate intake of iron, causing the sufferer to feel weak, tired and fatigued

anaphylaxis a generalised allergic reaction that often involves more than one body system (e.g. skin, respiratory, gastrointestinal and cardiovascular)

antibody protein produced by the body to fight foreign particles

balanced diet nutrition intake that provides energy, nutrients, dietary fibre and fluids in amounts appropriate for good health

convalescence period of recovery of health and strength after injury or illness

FODMAP acronym for the term fermentable oligosaccharides, disaccharides, monosaccharides and polyols. These are the chemical names of several sugars that are poorly absorbed in the small intestine. Linked to irritable bowel syndrome (IBS)

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

food taboo a prohibition against consuming certain foods

life cycle stages of life that begin when a female egg is fertilised and end at the time of death

nutritionally modified foods foods that have been changed to improve their nutritional qualities, either by adding some component (e.g. vitamins, minerals, fibre, active non-nutrients) or by removing or reducing some component (e.g. sugar, fat, sodium)

therapeutic diet a meal plan that controls the intake of certain foods or nutrients to treat a health condition

totem a natural object, plant or animal that is inherited by members of a clan or family as their spiritual emblem. Totems define people's roles and responsibilities, and their relationships with each other and creation

Circumstances that lead to the need for specific foods

A specific diet is one that cannot be selected freely from the main choices available. This could be due to an allergy, intolerance or other medical need; or because someone is following a religious or cultural diet, or a vegetarian or vegan diet. Lifestyle choices and personal preference can also affect dietary choices and needs.

Cultural considerations

Understanding the role of food in cultural and religious practice is an important part of showing respect and responding to the needs of people from a range of religious and cultural backgrounds. In our modern multicultural country, many ethnic or religious communities follow specific dietary customs and may exclude or prepare food in a particular way.

Aboriginal and Torres Strait Islanders

In these cultures, everything has meaning and purpose, including food. The Dreaming is an oral history of the world and its creation shared by Aboriginal and Torres Strait Islander peoples. They believe that during the Dreaming the ancestral spirits moved over the land and created and shaped its rivers, mountains, forests, deserts, people, animals and vegetation. The laws laid down during the Dreaming dictated the types of food that could be eaten, who gathered or hunted these foods, the methods for preparing and storing them, and the eating habits of the clans.

In many language groups, certain foods are prepared by women and others by men. Generally, women prepare yams, roots, nuts, fruit and shellfish, while men prepare flesh foods, such as kangaroo and emu. Men and women often ate separately. Pregnant women, boys prior to initiations and girls prior to puberty would be denied particular foods for spiritual reasons.

Foods that have spiritual significance to these cultural groups are known as totems. A totem is believed to be a descendant of a Dreaming being and is generally a natural object, plant or animal that is inherited by members of a family as their spiritual emblem. Totems define people's roles, responsibilities and relationships with each other and with creation. Depending on family/social kinship systems and location of birth, each person is given a totem when they are born. They are responsible for protecting these animals and plants and are usually forbidden from killing or eating them. This rule may be lifted during ceremonies and at special times of the year.

For more information on Aboriginal and Torres Strait Islander food traditions, refer to Chapter 1.

Food taboos

A food taboo is a prohibition or ban against eating particular foods. Food taboos differ around the world; what some cultures find acceptable to consume, others may consider inedible. The origins of most taboos are unknown, though many seem to exist to protect humans from real or sometimes imagined hazards. Taboos take various forms; some of these are included in Figure 6.1.



Some food types are simply culturally unacceptable. For example, horse meat is not permitted for sale in Australia.



Certain food combinations are forbidden in some cultural groups. For example, the Jewish faith does not allow the preparation and consumption of meat and dairy products together.



Some foods are not recommended for consumption during pregnancy, mainly because they may contain harmful bacteria. These foods include raw eggs, raw or processed meat, raw fish and soft cheeses.

Figure 6.1 Examples of food taboos

While many styles of cuisine exist in Australia, most Australians consider taboo certain foods that are consumed by other cultures. Some of these foods are shown in Figure 6.2.



Dogs and cats: these creatures are often consumed in parts of China, Korea and Southern Africa.



Insects and bugs: 2 billion people around the world regularly eat and enjoy a variety of insects and bugs.



Primates: enjoyed as a delicacy and believed to have medicinal properties in rural areas of sub-Saharan Africa and Southeast Asia.



Whales and dolphins: some Inuits in Alaska, and residents of Norway, Iceland and Japan consider whale meat a delicacy.



Rodents: eating mice, rats, guinea pigs and other rodents is common in places such as Southeast Asia, China, Western Africa and Peru.

Figure 6.2 Some foods considered taboo in Australia but consumed by other cultures

Seven lucky foods to eat during Chinese New Year



Figure 6.3 The consumption of some foods is a ritual in certain cultures during times of celebration, such as Chinese New Year.

FOOD IN FOCUS

FOOD NEEDS

PURPOSE

To investigate circumstances that lead to specific food needs.

Would you eat this?

On a recent visit to a small village in Southeast Asia I had the pleasure of sharing a breakfast feast with the local community. We sat together in a small area on grass mats and ate with our hands. This is what we had:

- The immature embryos taken from a species of flightless bird cooked to perfection in a local thermal spring.
- Thick slices of meat from a pig's belly that had been salted and cured – once pink and floppy but fried to turn a dark hue of red, and cooked until it was crisp and crunchy.
- A white fleshy puff ball, which seemed to be a spore-bearing fruiting body of a fungus harvested from the local forests.
- A delightfully fresh leafy plant eaten raw and found growing prolifically along the water course. The leaves were triangular in shape, and bright green and tasted mild and soft.
- A material made from locally crushed grass seeds, mixed with yet another fungus, rested, pounded and then scorched in a fire. This was covered in a thick yellow grease prepared from the secretions of the mammary glands of one of the domesticated animals.
- An array of beautiful and exotic fruit – some of which had the odour of dirty socks and a texture hard to describe.
- A hot beverage which had been produced by grinding a bean found in the faeces of the Asian palm civet (a small cat-like animal) and adding boiling water. The locals called this *kopi luwak*.

ACTIVITIES

1. Are you an adventurous eater – at first glance would you eat this meal?
2. What dishes are being described in the passage above?
3. How was this meal eaten? How does that differ from how you would eat this meal in Australia?
4. Why do you think some foods are accepted in some cultures but rejected in others?
5. Describe some foods that you love to eat. Give reasons for your answers.
6. Describe some foods that you do not like and some you would not like to try. Give reasons for your answers.
7. Investigate the process of making and producing *kopi luwak*.

Religious beliefs

Religion plays one of the most influential roles in the choices and subsequent selection of foods consumed in certain societies. The role of food in religious beliefs is complex and varies among individuals and communities. Individuals and families may exclude certain foods or only eat foods prepared or cooked in a particular way according to their religious faith. Food may play different roles for followers of different faiths. It may be viewed as a way to

- communicate with God (e.g. saying thanks and blessing)
- demonstrate faith through following religious rites concerning diets
- develop discipline through fasting.

HANDS-ON

FOOD RITUALS

PURPOSE

To investigate religious food rituals that influence food selection.

ACTIVITIES

1 Using the internet, books and your own knowledge, choose a religious celebration to research.
Your investigation could focus on one of the following religious celebrations or one similar.
- Easter (Christianity)
- Passover (Judaism)
- Eid-ul-Fitr (Islam)

2 Identify the components of the meal used to celebrate your chosen religious occasion, including beverages, main dishes and desserts.

3 Discuss the following:
- The significance of the celebration to that religion.
- Foods commonly associated with the celebration. Why do you think they are consumed?
- Any general food customs or beliefs of that religion.

4 Based on your research, plan a menu for your chosen religious ceremony.

5 Share your menus, and discuss similarities and differences between your chosen religious ceremony and other religions' food rituals.

6 Use a Venn diagram to compare and contrast the chosen religion's food rituals with your own.

WS Venn diagram

Health status

For some people, food plays a role in the treatment of a medical condition or its symptoms. These types of diets are used as a therapy to treat diet-related disorders and health conditions, such as diabetes, high blood pressure and heart disease, and are known as therapeutic diets. They are usually based around an eating plan designed by health professionals, including nutritionists, practising dietitians and doctors. A therapeutic diet is usually a modification of a regular diet and aims to reduce the risks and consequences of certain health disorders. It may include specific nutrients and methods of food preparation, or may eliminate certain foods to avoid intolerance or allergies.

These specific diets can be adopted to treat various diet-related disorders or to promote healing during convalescence. They include, but are not limited to, liquid diets, soft diets, diabetic diets, low-calorie/kilojoule diets, high-calorie/kilojoule diets, low-cholesterol diets, low-sodium diets, high- or low-protein diets, low-residue diets, and gluten-free and low- FODMAP diets (see Figures 6.4 and 6.5).



Shutterstock/Rimma Bondarenko

Figure 6.4 A low-FODMAP diet is a type of therapeutic diet. FODMAP stands for fermentable oligosaccharides, disaccharides, monosaccharides and polyols. These are the chemical names of sugars found in some fruits, vegetables, legumes, grains, dairy products and processed foods.



Figure 6.5 Some therapeutic diets

Lifestyle choices

Where we live and the way we choose to live our lives can have a big influence of the foods we choose to eat. As discussed in Chapter 2, different types of employment, levels of education and household structure may all contribute in some way. Some of our lifestyle choices are determined by our beliefs, values and interests, resulting in specific dietary considerations.

Vegetarianism

A person who chooses to follow a plant-based diet is known as a vegetarian. People become vegetarians for a variety of reasons, including health, religion, and concerns about animal welfare and sustainability. Strictly speaking, vegetarians are people who do not eat meat, poultry or seafood; however, depending on what a person deems acceptable to eat, there are various classifications of vegetarianism. These include lacto-vegetarians (eat dairy), lacto-ovo-vegetarians (eat dairy and eggs) and ovo-vegetarians (eat eggs, but not dairy).

People who adopt a vegan lifestyle do not eat or use any animal products. While a well-planned vegan diet can generally meet all nutritional requirements, some vegans may be at risk of developing deficiencies in some key micronutrients, such as B12, iron, calcium, zinc, iodine, selenium and omega-3 fats.

There are also some extreme forms of vegetarianism. One example is fruitarianism. Fruitarians will not consume anything that involves

the death of a living thing. They will eat fruit that falls naturally from a tree, nuts, seeds, honey and olive oil. This diet is potentially dangerous because it is deficient in nutrients and also high in sugar.

As more people understand the benefits of following a plant-based diet, such as a reduced carbon footprint and improved health, vegetarianism (also called 'flexitarianism', or 'casual vegetarianism') has risen. Those who follow this eating pattern consume a mostly vegetarian diet but occasionally eat meat.

For more detail on the differences between vegetarian and vegan diets, see Chapter 8, page 294–295.

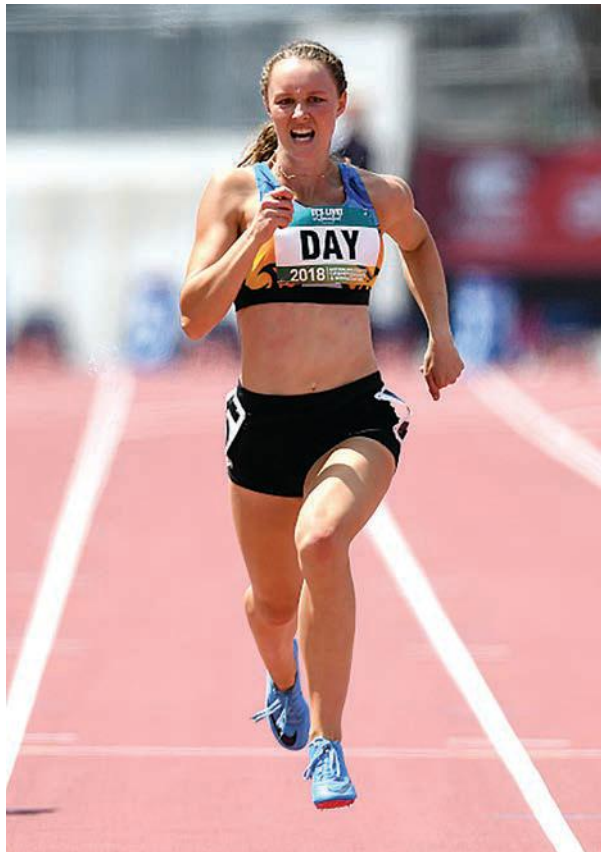
Sport and exercise

Whether you are a professional athlete working towards a gold medal or just an active individual, good nutrition and a balanced diet are vital for peak performance. Eating to reach peak performance levels does not necessarily require a specific diet or supplements – it is all about working the right foods into your fitness plan in the right amounts.

Eating well for physical activity and sport can have many benefits, including:

- allowing you to perform well in your chosen sport or activity
- reducing the risk of injury and illness
- ensuring the best recovery after exercise or a training program.

It should be noted the chosen sport and level of activity undertaken will determine any specific nutritional considerations. A football or rugby player may require thousands of kilojoules to bulk up, whereas a tennis player needs endurance, agility and leanness alongside strength and power. A healthy diet for sport and exercise should contain plenty of starchy foods, fruits and vegetables, and some protein and dairy foods. It is also important to stay hydrated.



Bradley Kanaris/Stringer/Getty Images Sport

Figure 6.6 Athletes need to eat plenty of healthy food to reach peak performance.

9780170442855

Getty Images/Quinn Rooney



PROFESSOR LOUISE BURKE, OAM: SPORTS DIETITIAN

Louise Burke, PhD, APD, FACSM, is a sports dietitian who has worked with elite athletes for more than 25 years. She believes that well-planned eating practices help athletes to train hard, stay healthy and injury-free, and compete at their best. Louise is a former triathlete who represented Australia in the Ironman Team Cup at the 1985 and 1986 Hawaii Ironman World Championships.

Nutrition advice for athletes needs to be personalised, practical and specific to the task. There are clear differences in the needs of a huge male shot putter and a tiny female distance runner – the absolute energy needed to support their body mass might be at opposite ends of the spectrum, as are the type and quantity of the fuel needs of their training programs. Competition nutrition will look very different for someone who needs to perform a highly explosive activity several times over a couple of hours (and perhaps repeated for heats and finals) and the athlete whose goals are to maintain the highest power output and economy of movement possible over 2.5 hours with opportunities to take on fuel and fluid while on the move to support these goals.

What many people don't realise about modern sports nutrition is the degree to which nutrition goals and requirements change for the same athlete – over their career, over their competition year and even within a week. A big theme in modern sports nutrition is periodisation – recognising that needs change from day to day according to the exercise load, and that the timing of nutrition within the day is also important in maximising the results of the training process or competition recovery. Just as there is no such thing as an 'athlete's diet', there is really no such thing as a shot putter's diet or a marathon runner's diet any more. Rather, several different and targeted eating practices are integrated to support the various elements of the athlete's training and completion plan.

Source: Michael Joyner/Sports Illustrated/www.si.com/edge/2016/06/16/australian-institute-of-sport-louise-burke-nutrition-rio-olympics

QUESTIONS

1 Describe Louise Burke's role at the Australian Institute of Sport.
2 Explain why Louise may have a good insight into the dietary needs of athletes.
3 Outline how well-planned eating practices can help athletes.
4 Explain, using examples, why nutrition for each athlete needs to be personalised.
5 Explain why and how the nutrition requirements of athletes change over time.
6 Discuss the concept of 'periodisation'.
7 Justify the statement 'There is no such thing as an "athlete's diet".'

TAKING IT FURTHER

8 Research the diet and nutrition needs of your favourite sports hero or a specialised elite athlete.

AIS – Eat like an Olympian

PRACTITIONER FOCUS

Bushwalking and camping

Many Australians enjoy spending time outdoors. The foods you choose when camping or bushwalking will depend on the type of food storage available, how much you can carry and whether safe water is available to add to foods. The basic requirement is to provide a balanced, healthy diet to give you enough energy to complete all the activities you would like to do.



Dreamstime.com/Arne9001

Figure 6.7 Careful menu planning is needed when going hiking or camping.

Foods for hiking need to be compact and lightweight, high in energy, easy to prepare, and not require refrigeration. Fresh is always best, but freeze-dried foods are now readily available in shops. They are tasty, durable and just need water added before heating and eating!

Snacks are also an important addition to a hiking pack. Small packets of dried fruits and nuts or high-energy food bars are healthy examples. It is always a good idea to leave an emergency ration in your pack – just in case of misadventure – and you should always carry plenty of safe drinking water.

The type of adventure you are planning will determine the final menu choices. If you are camping, it is best to keep meals simple and easy to prepare. If you are planning on staying a few nights, then you will have time to cook and prepare foods, but you may not have refrigeration and will need to bring an esky full of ice. If the trip is just an overnight 'bush bash' or beach sleepover, a simple menu, such as easy-to-cook steaks and sausages with preprepared vegetables or salads, could be a good option. The campsite you are staying at will also determine your food choices. Campsites may have a shared kitchen facility and barbecues, or you may need to build your own fire. Some campsites may restrict fires due to their bushfire hazard.

FOOD IN FOCUS

LIFESTYLE AND FOOD SELECTION

PURPOSE

To investigate how lifestyle choices can influence food selection.

PACKING FOOD FOR A CAMPING TRIP

Imagine you and two of your friends are heading out to a local isolated camping spot for a few nights in the next school holidays. There is no electricity, and you and your friends must carry your own drinking water, food and cooking equipment into the campsite.

ACTIVITIES

1 **a** Plan a menu for all of you for a two-night stay. Include a variety of menu items for each meal (breakfast, lunch and dinner) and snacks to enjoy throughout the day.

b Complete a meal plan.

Meal	Day 1	Day 2
Breakfast		
Lunch		
Dinner		
Snacks		

2 Evaluate some of the ready-made meals you could include in your meal plan.

3 Justify your menu choices.

WS Camping trip

Travel

Eating your way around the world – gastronomic tourism – is a growing trend and can be quite an adventure. The food you eat while travelling can shape your journey and define your memories. Pampering your taste buds with flavour-filled curries in Sri Lanka, crunching on a tarantula in Cambodia, making soba noodles in a cooking class in Japan, or tucking into Buddhist fare on an overnight monastery stay in South Korea are all gastronomic food experiences that can make a trip more memorable and authentic. It is important to immerse yourself in the local customs and food habits and to munch, crunch, sip and slurp just like the locals, but it is also important to stay safe and consider your own specific food needs. While your palate may be game, your stomach may not always be up to the challenge and you might be susceptible to a food-borne foodborne illness.

When travelling, it can be tempting to stray from your usual healthy diet. Hectic schedules may result in poor nutritional choices. Following irregular eating schedules, or existing for days on the same foods, can compromise the immune system and cause a number of health problems. While travelling, try to maintain a well-balanced diet and stay hydrated by drinking plenty of clean water.

FOOD IN FOCUS

EATING IN SPACE



NASA

Figure 6.8 Eating in microgravity can be very different from eating on Earth.

Food preparation on the International Space Station varies with the food type. Some foods can be eaten in their natural forms, such as brownies and fruit. Other foods require adding water, such as macaroni and cheese or spaghetti. Of course, an oven is provided in the space station to heat foods to the proper temperature. There are no refrigerators in space, so space food must be stored and prepared properly to avoid spoilage, especially on longer missions.

Condiments, such as ketchup, mustard and mayonnaise, are provided. Salt and pepper are available but only in a liquid form. This is because astronauts can't sprinkle salt and pepper on their food in space. The salt and pepper would simply float away. There is a danger they could clog air vents, contaminate equipment or get stuck in an astronaut's eyes, mouth or nose.

Astronauts eat three meals a day: breakfast, lunch and dinner. Nutritionists ensure the food astronauts eat provides them with a balanced supply of vitamins and minerals. Calorie requirements differ for astronauts. For instance, a small woman would require only about 1 900 calories a day, while a large man would require about 3 200 calories. An astronaut can choose from many types of foods such as fruits, nuts, peanut butter, chicken, beef, seafood, candy, brownies, etc. Available drinks include coffee, tea, orange juice, fruit punches and lemonade.

As on Earth, space food comes in disposable packages. Astronauts must throw their packages away when they have finished eating. Some packaging actually prevents food from flying away. The food packaging is designed to be flexible and easier to use, as well as to maximize space when stowing or disposing of food containers.

Source: Adapted from https://www.nasa.gov/audience/foreducators/stem-on-station/ditl_eating

QUESTIONS

1 Describe the types of food eaten in space by astronauts.
2 How are foods stored, prepared and served during space travel?
3 Discuss the reasons salt and pepper are only available in liquid form on the space station.
4 Justify the importance of a well-balanced diet for astronauts.
5 Why is the packaging of space food significant?
6 How is packaging disposed of in space?

NEIL PERRY: QANTAS CHEF

Neil Perry means big business in Australia. The celebrity chef and restaurateur is behind some of the country's most coveted food destinations, including Rockpool Bar & Grill and Spice Temple in Sydney, as well as restaurants in Melbourne and Perth.

...

As in all his endeavors, Perry has succeeded in creating something truly special with his 21-year long partnership with Qantas, Australia's largest airline. It is the longest partnership of its kind in aviation history, and one that has seen Perry, and the team he has assembled over the years, oversee the design of the domestic and international in-flight menus for the airline, as well as the food served in Qantas's first and business class lounges ...

Perry now works with seven full-time consultants to brainstorm recipes and ideas for Qantas, creating seasonal menus that are tested inside Qantas's Sydney catering center. There, dishes are prepared, cooked and reheated to simulate the onboard experience ...

Most recently, Perry worked with nutritionists at the University of Sydney's Charles Perkins Centre to create a special anti-jet lag menu for the new Qantas 787 Dreamliner from Perth to London ...

Perry and his team consulted with sleep specialists, nutritionists, and metabolic scientists to design a menu with ingredients that boost hydration, aid sleep and reduce jet lag. Think probiotic-infused cold-pressed juice shots; lemon verbena chamomile and lemongrass tea, which promotes relaxation; organic Kombucha to aid digestion; green leafy vegetables, cucumber, strawberries and celery, all to promote hydration; tuna poke salad as a lighter option; and a hot chocolate at bedtime, to help prompt the body's sleep cycle.

Source: Parker, L 2018, 'Qantas and Neil Perry officially have the longest partnership in the business', forbes.com, 29 June

Getty Images Entertainment/John Sciulli/Stringer



Figure 6.9 Acclaimed Australian chef Neil Perry has designed the lavish restaurant menus featured in Qantas flights and lounges.



HOW FOOD TASTES ON A PLANE

The combination of dryness and low pressure in an aircraft can reduce the sensitivity of taste buds to sweet and salty foods by around 30 per cent. This means that recipes need to be specially formulated for this environment.

Because of strict food safety standards, all meals served on an aircraft must be cooked on the ground. The food is packed, blast-chilled, refrigerated, and finally must survive re-heating in the air.

Sky chefs re-heat food on board using convection ovens, which blow hot, dry air over the food.

QUESTIONS

1 Describe the role of Neil Perry and his team with Qantas.
2 Why do you think Perry's partnership with Qantas has been so successful?
3 Explain the importance of testing the planned dishes under flight conditions.
4 List the specialists that Perry consulted with to formulate his anti-jet lag menu.
5 Identify the foods that featured in this menu and discuss why they have been included.
6 Design your own in-flight menu. Justify your selections.

PRACTITIONER FOCUS



UNIT REVIEW

LOOKING BACK

1 What is a 'specific diet'?
2 Define the term 'food taboo'.
3 Use examples to illustrate how food taboos may affect the nutritional status of some groups in some cultures.
4 Discuss the role of a totem in traditional Aboriginal culture.
5 Outline three ways food may be used in a religious context.
6 Who would be responsible for putting together a therapeutic diet for a patient with health issues?
7 What kind of health issues require special dietary considerations to be made?
8 Explain why where we live and the way we choose to live our lives can affect our dietary choices.
9 Design an entrée, main course and dessert for a dinner party that vegetarians will be attending.
10 Investigate the social, religious and ethical reasons people have for being vegetarian.
11 Why are complex carbohydrates important in an athlete's diet? List 10 examples of foods that contain complex carbohydrates.
12 Explore the concept of gastronomic tourism.
13 Make a list of specific considerations a traveller should make while travelling in foreign countries.

FOR YOU TO DO

14 Choose a religion other than your own and inquire into its food rules and rituals. Justify the reasons for these beliefs.
15 Investigate foods that are believed to bring good luck to those that consume them.
16 Investigate the specific dietary needs of a particular elite athlete and design a one-day meal plan for them.
17 Develop a travel itinerary that focuses on food experiences in a specified country.
18 A number of individuals have specific dietary needs and require particular foods. Copy and complete the table below by providing a description, the group's dietary needs and examples of suitable foods for each group.

Group	Description	Dietary needs	Suitable foods
Coeliac			
Vegan			
Lacto-vegetarian			
Muslim (religious)			

TAKING IT FURTHER

19 Have a doctor, naturopath or nutritionist visit your class to discuss the different types of diets they prescribe and the reasons for prescribing them.
20 Visit your local supermarket and compile a list of the range of convenience products that are designed to target the following consumer groups.
- Vegetarians
- Health-conscious consumers
- Campers

Stages of the life cycle

As we age and grow, our bodies constantly change; because of this, as well as lifestyle and other changes, the nutritional needs of our bodies also vary. Infancy, childhood and adolescence are periods of growth, where muscles, tissues and bones are developing. This is a stage when energy intake and nutrient needs are increased. By adulthood, things stabilise (except during pregnancy and lactation) and nutrient needs vary according to gender and lifestyle. In the later years there is little or no growth and the body's metabolism slows down, so less energy intake is required.

Age-appropriate nutrition is an important consideration at each stage of the life cycle. Ensuring that the correct nutrients in the correct amounts are being consumed will help maintain health as you grow and mature.

For more information on nutritional needs throughout the life cycle, see pages 130–132 in Chapter 4.

Nutrient Reference Values

Nutrient Reference Values (NRVs) are a set of recommended daily nutrient targets based on current available scientific knowledge. These targets are intended for the average healthy individual at different life stages.

NRVs for Australia consider the specific nutritional needs of people based on age, gender and stage of life. They outline the recommended intakes for energy (KJs) and nutrients such as carbohydrates, proteins, fats, vitamins, minerals and fibre. The NRVs were released by the National Health and Medical Research Council (NHMRC) to replace the Recommended Dietary Intakes (RDIs).

Manufacturers use these figures as a way of guiding consumers to make informed choices about the foods they eat.

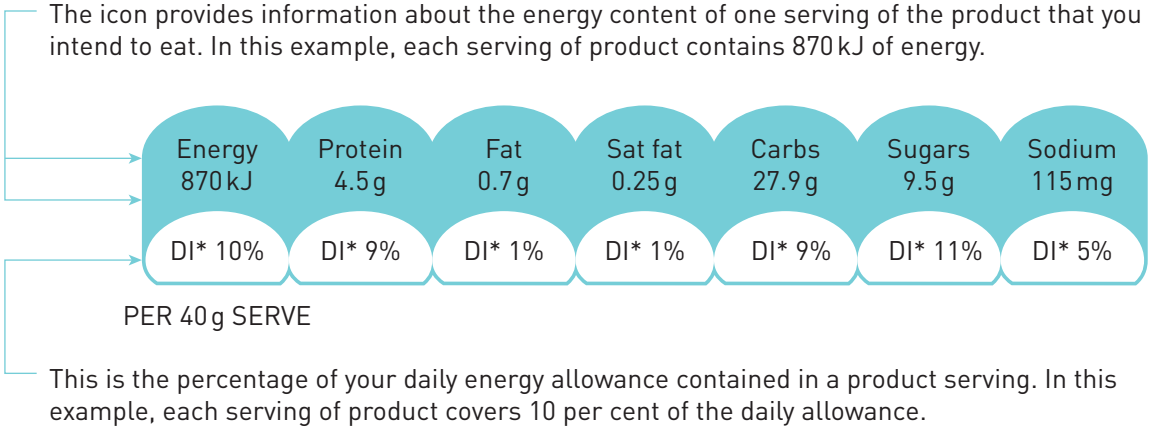


Figure 6.10 NRVs on Australian food packaging

UNIT REVIEW

LOOKING BACK

1 What is the best source of food for a newborn baby? Explain your answer.
2 Explain the importance of establishing good food habits in young children.
3 Adolescence is a time of growth. What additional nutrients may be required during this stage of the life cycle?
4 Justify the reasons adults need to eat a balanced diet and stay active.
5 Outline reasons why the nutritional needs of the elderly may change.

FOR YOU TO DO

6 Investigate a specified stage of the life cycle.
- Describe nutritional requirements for this specific stage.
- Investigate the NRVs (or RDIs) for this group.
- Plan a one-day menu that meets these specific needs.

Meal	Menu
Breakfast	
Lunch	
Dinner	
Snacks	

7 Design, plan and prepare dishes to meet the needs of a:
- baby being weaned from breastmilk
- four-year-old child
- 10-year-old boy
- 13-year-old girl
- university student
- middle-aged male construction worker
- middle-aged female office worker
- single male over 70.

TAKING IT FURTHER

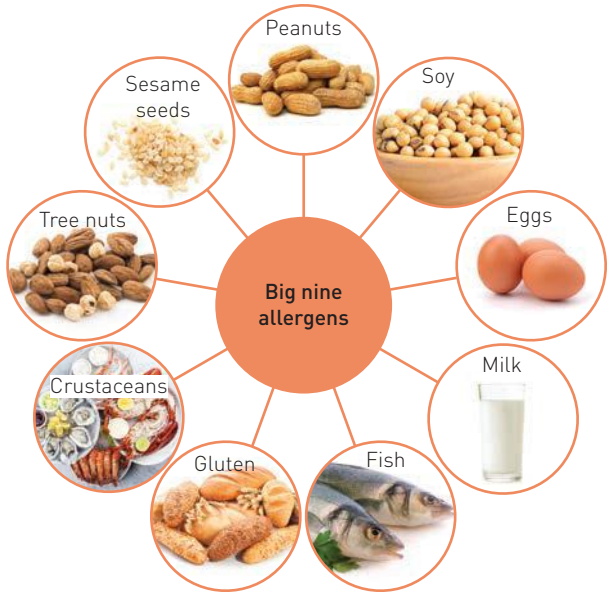
8 a Investigate the NRVs for adolescents in Australia.
b Do you think you meet these benchmarks? Why or why not?
c Design a weekly meal plan to meet your individual nutrient requirements.

Food allergies and intolerances

Food allergies and food intolerances affect nearly everyone at some point in their life. You or someone you know may have had an unpleasant reaction to something they have eaten and wondered whether they 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.

Food 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 (antibodies) into your body to try to 'protect' you against the food consumed. These chemicals then trigger allergic symptoms that can affect your breathing, skin, gastrointestinal tract and cardiovascular system. Allergies can be activated by a never-ending list of triggers, and the severity of the reaction will vary from person to person and **can be potentially fatal**.



Clockwise from top: Shutterstock.com/Nattika/Andrey_Kuzmin/Alexander Raths/Timmary/Artur Begel/Gjoko Milovski/Hong Vo/MRS.Siwaporn/Diana Taliun

Figure 6.11 The most common triggers for food allergies

Diagnosis

Food allergies are difficult to confirm or rule out by using tests. Symptoms and family history can be a good indicator for the type of allergy a person may suffer. A skin test is used to determine reactions to particular foods. In this test a small amount of the suspected food is placed on the surface of the patient's skin which is pricked to allow the substance to penetrate beneath the surface. A raised bump or reaction would indicate an allergy. A blood test could also be used to measure the body's immune response to particular foods. This measures the allergy-related antibodies in a person's system. To avoid an allergic reaction, the sufferer must avoid the foods that trigger the signs and symptoms.



Shutterstock.com/gorillaimages

Figure 6.12 An allergist will conduct tests to determine if you have a food allergy.

Food 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. These reactions may take several hours or even days to appear. The body reacts only when a food chemical (natural or added) builds up in sufficient quantities to cause a reaction.

Diagnosis

Food intolerances are also difficult to diagnose, as limited reliable testing is available. Coeliac disease and lactose intolerance can be tested for, but other intolerances can only be identified using an elimination or diagnostic diet. An elimination diet involves removing foods from the diet that are suspected of causing issues. The foods are later individually reintroduced so that if any symptoms return the culprit can be identified.



Dairy and dairy products



Gluten



Caffeine



Preservatives

Figure 6.13 Common sources of food intolerance

What's the difference?

It is sometimes hard to distinguish between a food allergy and a food intolerance, based on the symptoms alone. In most cases, if someone suffers from a food allergy the symptoms appear soon after that food has been consumed. Symptoms caused by intolerances may appear quickly, but are more likely to develop 12–24 hours later. Food intolerances are often linked to the amount of food consumed, with a certain threshold needing to be reached before a reaction occurs.

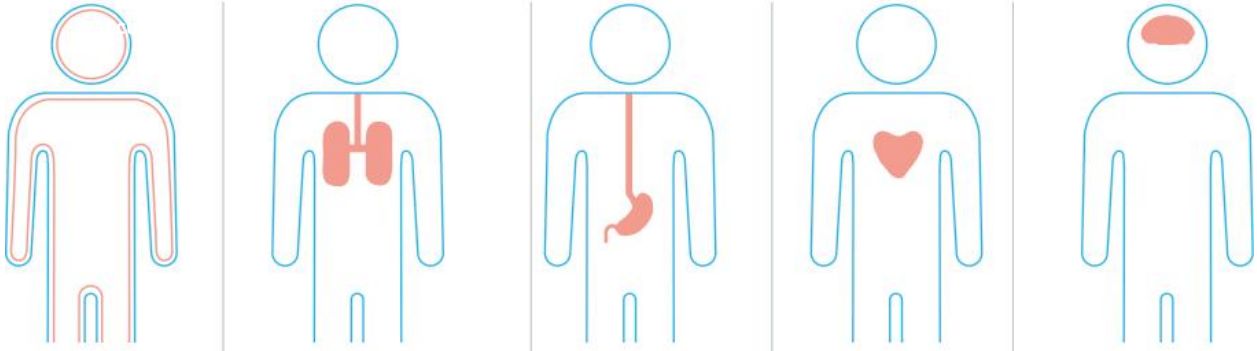
Food allergies may trigger a severe allergic reaction that needs urgent medical attention – this is known as anaphylaxis. An injection of adrenaline is needed to treat the allergic reaction.

How to administer an EpiPen



Figure 6.14 The symptoms of food intolerance

Table 6.1 The symptoms of anaphylaxis

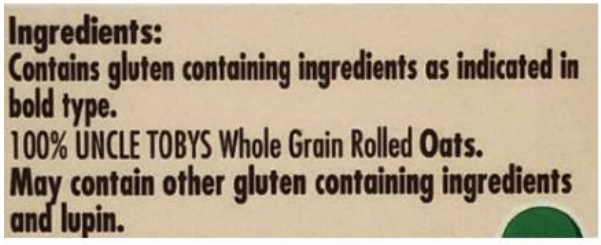


Skin	Respiratory	Gastrointestinal	Cardiovascular	Neurological
Hives, swelling, itching, warmth, redness	Coughing, wheezing, shortness of breath, chest pain or tightness, throat tightness, trouble swallowing, hoarse voice, nasal congestion or hay fever-like symptoms (sneezing or runny or itchy nose; red, itchy or watery eyes)	Nausea Stomach pain or cramps, vomiting, diarrhoea	Dizziness/ lightheadedness, pale/blue colour, weak pulse, fainting, shock, loss of consciousness	Anxiety, feeling of 'impending doom' (feeling that something really bad is about to happen), headache
				Other
				Uterine cramps

Impact of food allergies and intolerances on food choices

Food allergies and intolerances are on the rise. For some people, foods can cause distressing, even dangerous, reactions or chronic ill health. Others, for lifestyle reasons, simply choose to avoid particular foods and ingredients. Food allergies affect about 1 per cent of adults and 10 per cent of children, although some children outgrow their allergies. Food intolerances are much more common – in fact, it is estimated that up to 20 per cent of the world's population may have a food intolerance.

If you have a food allergy or intolerance, it may mean you eliminate certain foods from your diet. It is important to make sure you are replacing these foods with other alternatives, so that you have a balanced diet and are not missing out on any important nutrients.



In Australia, food manufacturers must state on food labels if these common allergens are present in food products. When purchasing food, people with known allergies and intolerances, such as gluten or peanuts, should check food labels carefully for allergens. Those suffering from allergies need to be familiar with all the food terms associated with their specific allergy. For example, if they are allergic to milk protein, they need to avoid all foods made from milk, including cheese, yoghurt and cream. They must also avoid all foods that contain whey, casein, caseinate, non-fat milk solids, lactoglobulin, cow's milk protein, nougat, curds, sodium caseinate or lactalbumin. They must also look carefully at butter, margarine, ice-cream, cakes, puddings, sorbet, breads, soups, vegetables with sauces, and more! Labels should be checked even if the product has been purchased before, as product recipes can change.

Figure 6.15 Allergy warnings must be clearly given on all food labels in Australia. You can usually find an allergy warning below or near the ingredients list.

HANDS-ON

FOODS FOR ALLERGIES AND INTOLERANCES

PURPOSE

To investigate the range of ready-made products available in supermarkets for those suffering allergies and intolerances.

ACTIVITIES

1. Purchase a variety of foods aimed at people with specific allergies and intolerances and the ordinary unaltered equivalent product.
2. Prepare the foods according to the instructions provided.
3. Conduct a blind taste testing of the two products to see if your class members can pick the difference.
4. Draw a table to record your results. Include columns for cost, preparation time, cooking time, appearance, taste and your overall preference.

QUESTIONS

1. Comment on any difference in price between the two products.
2. Discuss the differences in the way the two products are prepared and cooked.
3. Identify the differences in taste and appearance.
4. Do you prefer the 'specific foods' or the regular range? Explain your answer.
5. Investigate other products available to those with allergies and intolerances.

FOOD IN FOCUS

FOOD ALLERGIES AND INTOLERANCES

PURPOSE

To discuss how a person's food choices are affected by food allergies and intolerances.

Grieving mother's petition for changes to allergen labelling laws

A mother haunted by the fatal allergic reaction of her nine-year-old daughter has started an online petition calling for changes to Australia's allergen labelling laws.

Isabel Marrero in March [2018] died from a severe allergic reaction when eating the wrong Cadbury's biscuit.

Her mum Helen thought she had bought Isabel her favourite Cadbury's Chocolate Chip Cookies with 'choc centre', but given the similarity of the packaging, she had accidentally picked up the Cadbury's 'soft centre', which contained an egg allergen.

Both biscuits have purple packaging, the same lettering and no visible allergen warning on the front of the packet.

Cadbury's said after the Melbourne girl's death it would change the packaging, though because the biscuits were made overseas the new versions would not appear on shelves until 2019.

Source: Australian Food News www.ausfoodnews.com.au

In Australia the Food Standards Code requires businesses to declare allergens on product labels – but it doesn't say how or where. And there are no requirements to inform customers if they alter the product.

Food Standards Australia New Zealand (FSANZ) is working towards making allergen declarations clearer so that consumers can have greater confidence in getting the information they need to make informed and safe food choices.

QUESTIONS

1. Identify the cause of Isabel Marrero's death.
2. Why did this incident occur?
3. How did Cadbury respond to this tragedy?
4. Explain why it is important always to check information on a food label if you suffer from allergies.
5. Identify the governing body responsible for food labels in Australia.
6. What is FSANZ doing to prevent deaths like this one happening again in the future?



Mark Fergus

Figure 6.16 Cadbury's soft centre chocolate chip cookies and choc centre chocolate chip cookies before the change in design.

PRACTITIONER FOCUS

EMILY SANDERS (RYVES): THE HILLI GOAT – NORFOLK ISLAND



iStock/Getty Images Plus/tracielouise

Until a few years ago Emily had never seen a goat. There were none on Norfolk Island, 1400 km off the east coast of Australia, where she grew up.

But after watching a documentary about goat's cheese farming, the one-time flight attendant and wedding photographer was convinced she had found what she wanted to do with her life.

Ryves left the island with a dream of becoming a cheesemaker. She travelled around various places studying cheese making and goat farming, to prepare and learn the processes involved for her own venture. One highlight of her training was working with Carla and Ann Marie at renowned Holy Goat in Victoria. Emily returned to Norfolk to establish herself at the forefront of artisanal food production on the island and with hard work, trial and error Emily developed her own secret recipes for using goat's milk.

Goat's milk has less lactose and a slightly different protein structure than cow's milk. These subtle shifts actually make a big difference: Even people who are allergic to cow's milk can usually drink goat's milk without issue.

Emily now earns a living making cheese – including marinated with rosemary, garlic and thyme and cheese with crushed walnuts with local honey – which she sells at the Saturday morning farmer's markets and which feature on the menu of local restaurants. She also makes a wholesome skincare range which combines her own goats' milk with locally produced bee products.

QUESTIONS

1 Discuss the reasons Emily decided to become a cheese maker.
2 Outline the way Emily learnt to make cheese and other goat's milk products.
3 Why is goat's milk suitable for some people with allergies?
4 Describe the products Emily produces at Hilli Goat Farm.
5 Where does Emily sell her produce?

Hilli Goat Farm on Instagram



UNIT REVIEW

LOOKING BACK

1 Identify the main causes and symptoms of an allergic reaction, and describe how it is treated.
2 Describe the role of an allergist.
3 How does a food intolerance differ from a food allergy?
4 Discuss ways allergies and intolerances can be diagnosed correctly.
5 What is anaphylaxis, and how is it treated?

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 Find out what your school policy is for students with severe food allergies.
8 Plan a day's menu suitable for a teenager with an allergy to milk and gluten. Explain whether you found this task difficult.

TAKING IT FURTHER

9 Design an information pamphlet for parents whose child has an 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.

Nutritionally modified foods

Nutritionally modified foods are foods that have been altered in some way to improve their nutritional characteristics. This is usually done by altering traditional ingredients found in certain foods. Ingredients such as fats and sugars may be removed or reduced while, others such as iron, calcium or fibre are added. Some examples include reduced-fat yoghurt, fat-free chips, low-sodium sauces, high-fibre bread and sugar-free lollies. Modifying foods in this way may change the appearance, flavour and mouth-feel of the end product. Nutritional modification can occur during:

- the primary production of the food (e.g. breeding of livestock to produce lean meat)
- the processing of the food (e.g. milk can be altered to be fat-free)
- preparation for retail sale (e.g. protein powder can be added to fresh fruit juice).

Nutrients can be lost during processing. Foods that have nutrients added back to them are known as 'enriched' foods. Wheat flour, for example, may have folic acid, riboflavin and iron added back in after processing. This is intended to restore the flour's original vitamin levels.

If nutrients are added to a food that does not have them occuring naturally, then that food is known as a 'fortified' food product. Fortification can be used to supplement nutrients lacking in typical diets. In Australia, folic acid is being added to bread-making flour to help reduce the incidence of neural tube defects in pregnancy. Iodine is also added to bread to address the re-emergence of iodine deficiency in the general population. Other examples of fortified foods include:

- milk fortified with vitamin D, a nutrient that helps the body absorb the calcium and phosphorus in milk
- fruit juices fortified with calcium
- breakfast cereals with added fibre.

The role of nutritionally modified foods

Nutritional modifications are targeted towards meeting the requirements of individuals with specific food and dietary needs. Some examples of these modifications include:

- low kilojoule
- low fat, salt and/or sugar
- high fibre
- gluten free.

HANDS-ON

MODIFIED FOODS

PURPOSE

To investigate the role of nutritionally modified foods in meeting the requirements of individuals.

ACTIVITY

Copy and complete the following table by identifying specific examples of foods that have been modified to meet the listed health concerns.

Health concern	Modified foods	Specific product examples (use words and/or pictures)
Obesity	Low-fat or reduced foods (e.g. milk, cheese, youghurt) Low-carbohydrate foods (e.g. low-kilojoule/diet food such as soft drinks, muesli bars, shakes)	
Heart disease	Low-fat foods (e.g. yoghurt) Salt-reduced foods (e.g. tinned soup) Added antioxidant foods (e.g. margarine with omega-3) High-fibre foods (e.g. wholegrain pasta)	
Osteoporosis	Calcium fortification (e.g. orange juice with calcium) Vitamin D enriched (e.g. cereals)	
Anaemia	Iron fortification (e.g. iron-enriched breads, orange juice with added iron)	

>

HANDS-ON

Health concern	Modified foods	Specific product examples (use words and/or pictures)
Diabetes	Low-sugar foods (e.g. soft drinks) Low-kilojoule/diet foods (e.g. diet jelly) Low-glycemic index foods	
Hypertension	Salt-reduced foods (e.g. cheese) High-fibre foods (e.g. bread with added fibre)	
Food intolerance	Gluten-free foods (e.g. pasta, biscuits) Lactose-free foods (e.g. milk) Nut-free foods (e.g. biscuits and chocolate)	

UNIT REVIEW

LOOKING BACK

1 Define the term 'nutritionally modified foods'.
2 Identify the stage of the food production process when nutritional modifications are made.
3 Describe the difference between enriched foods and fortified foods.
4 Give examples of foods that have been nutritionally modified for specific purposes and explain why these changes were made.

FOR YOU TO DO

5 Make a list of all the salty foods you eat during the next week and over the weekend. How could you cut down your salt intake?

TAKING IT FURTHER

6 Investigate specialist food products that are targeted towards meeting the requirements of the sick and/or elderly.
7 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.
8 Explore products that are targeted towards athletes. Assess their nutritional value.

Nestlé Health Sciences

Support networks

Australians with specific food needs don't have to struggle with their diet on their own. There are services that exist to provide support for people living with specific dietary requirements.

Sufferers can educate themselves through reading and research – journals, podcasts and scientific publications are now easily accessible online.

There are numerous private organisations and government agencies that provide support for people with specific dietary needs. Your GP, local community health centre, and industry bodies such as the Dietitians Association of Australia are all good places to start when looking for this type of support.

Other bodies provide support for certain conditions. They are generally contactable by phone and have their own online support and social media networks. Some of these organisations also have face-to-face meetings to support those in need and those who may be caring for someone who needs a specific diet.

Support networks

Support network	Specific need
Coeliac Australia	Coeliac disease
Heart Foundation	Heart disease
Diabetes Australia	Diabetes
Butterfly Foundation	Eating disorders
Australian Institute of Sport	Elite athletes
Australian Society of Clinical Immunology and Allergy	Allergies
Australian Vegetarian Society	Vegetarians

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Luca Prodigo Photography/www.lucaprodigo-ed.com



LYNDI COHEN: THE NUDE NUTRITIONIST

Lyndi Cohen is an accredited practising dietitian with a Bachelor of Nutrition & Dietetics from the University of Newcastle.

She is a food-loving dietitian with a fad-free approach to healthy living. She is all about stripping back nutrition misinformation and making healthy eating simple again.

A rocky relationship with food led Lyndi to study nutrition, and she made it her mission to help others who feel let down by diets and want to make peace with their body.

Lindi loves what she does every day as a key support person and nutrition consultant. Her interests include product development, public speaking, content creation, communication, nutrient profiling, public speaking, recipe development, food photography and social media.

Her food philosophy is focused on eating more wholefoods, mindful eating and cooking skills. In fact, she believes you can be healthy without cutting out whole food groups, counting calories or following restrictive meal plans.

'As a dietitian, I don't believe you have to miss out on the foods you love to be healthy. Eating well is about filling up on plenty of fresh, healthy food and eating mindfully,' says Lyndi.

Lyndi's success includes regular TV appearances, a popular blog, a successful eBook and more than 93 000 followers on Instagram. She is also an ambassador for Jamie Oliver's Food Revolution program.



QUESTIONS

1. Why do you think Lyndi Cohen does not believe in diets?
2. What is Lyndi's food philosophy?
3. What sort of roles does Lyndi take on as a nutrition consultant?
4. Explain how a dietitian such as Lyndi can help people to have a good understanding of what they are eating.
5. How could Lyndi and others like her be of support to those who have specific dietary needs?
6. How do you think a strong social media presence has helped Lyndi pass on her message?



UNIT REVIEW

LOOKING BACK

1 List the ways that people who suffer from nutrition-related disorders may educate themselves about their disorder.
2 Where can people with specific dietary needs find support?
3 What is the best way to contact these support agencies?
4 Outline the type of support people with specific dietary needs could expect to receive from these groups.

FOR YOU TO DO

5 Investigate the types of groups that provide support for those with specific dietary needs.

TAKING IT FURTHER

6 Choose one of these support groups to find out more about and answer the following questions.
   a What is its primary focus?
   b Describe the type of support it offers to people with this specific dietary need.
   c What programs or initiatives does it have to help people with this specific dietary need?

Share your findings with the class.

Chapter review

LOOKING BACK

1 List three different types of dietary restrictions people may have and provide an example of each.
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 List five examples of when a person may require a modified diet to meet a specific 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 for the health of our society.
9 Identify foods that could be added to recipes to replace salt.
10 Discuss how modification can assist in managing people's specific dietary needs.
11 Describe how a person's health status or lifestyle affects their food choices. Provide examples of when this may occur.
12 Explain how educating people with specific needs in appropriate food selection influences the health system in your state or territory.

FOR YOU TO DO

13 Investigate the dietary requirements of one religion and discuss the implications for shopping.
14 Develop a one-day eating plan for a vegetarian of your choice. Give reasons for the foods selected.
15 Design and produce an Instagram story to promote one high-fibre product available at your local supermarket. Explain the benefits of purchasing and consuming this product.
16 Select one group with a diet-related specific need. Define the disorder, identify its symptoms, explain how it can be prevented and discuss possible treatment options. Present this information as an infographic. When completed, display it in your classroom.
17 Visit the Kids Health weblink 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'.


Kids Health

18 Create a mind map to summarise this chapter. Use a highlighter pen to identify one new concept you have learnt that could lead to changes in the choices you make when shopping for food products.
19 Develop a menu to be served at a gala dinner for the first 'space tourists' on their first night in space. Justify your choices.

TAKING IT FURTHER

20 Investigate a 'specific need' not mentioned in this chapter that may influence the food selection for that group of people.
21 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.
22 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.
23 Design a menu for one week to show a 15-year-old male how to reduce his chances of developing diabetes.
24 Design a menu for one week to help a 21-year-old female who suffers from coeliac disease.
25 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.

Recipe	Techniques	Equipment	Dietary considerations
Cricket carrot cake 	Blending Baking Icing	Measuring equipment Cake or muffin tin Bowl Blender Spoon Pallet knife Cooling rack	
Hot cross buns 	Kneading Piping Glazing	Measuring equipment Jug Bowl Knife Tray Snap lock bag – for piping Pastry brush	V
Butter-less butter chicken 	Steaming	Measuring equipment Board Knife Frypan Saucepan	GF
Moroccan chicken and roast vegetable salad 	Slicing Dicing	Measuring equipment Board Knife Oven tray Saucepan Fork Jug	GF
Vegetarian sausage rolls 	Glazing	Measuring equipment Food processor Knife Oven tray	V
Energy balls 	Food processing	Measuring equipment Food processor Tray	Vg DF
Watermelon pizza 		Measuring equipment Board Knife Bowl Spoon Knife	V GF
Chocolate apple muffins 	Grating	Measuring equipment Muffin pan Bowl Spoon Cooling rack	Vg DF GF

KEY

V = vegetarian VO = vegetarian option GF = gluten free Vg = vegan DF = dairy free

Note: All recipes are nut free.

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RECIPE



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Cricket carrot cake

Cricket powder is available online or at some IGA supermarkets.

Once you get over the 'yuk' factor, consider this: a report produced by the Food and Agriculture Organization of the United Nations notes that edible insects such as crickets are high in fibre and amino acids.

Preparation time 15 minutes **Cooking time** 20–30 minutes **Serves** 8–12

INGREDIENTS

¼ cup cricket powder
1 cup buckwheat flour
2 cups almond meal
2 teaspoons baking powder
½ cup coconut oil or rice bran oil
¾ cup water
2 medium carrots, roughly chopped
1 cup pitted dates

Chocolate ganache (optional)

2 cups coconut cream
1 cup cacao powder
½ cup pitted dates

METHOD

1. Preheat oven to 170 °C. Line cake tin or a 12-hole muffin pan. with baking paper.
2. In a large bowl, combine cricket powder, flour, almond meal and baking powder.
3. In a high-speed blender, combine remaining ingredients and blend to form a paste.
4. Add the paste to the dry ingredients and mix well.
5. Pour into lined pan and smooth out using the back of a spoon.
6. Bake for 25 minutes or until golden. Reduce time to 10–15 minute if making individual muffins.
7. Allow the cake to completely cool before icing, if desired, and serving.

Chocolate ganache

1. Blend all ingredients until mix becomes smooth.
2. Allow the mixture to set in the fridge for a couple of hours and then spread the ganache on top of the cake.

QUESTIONS

1. Describe the way you felt when you found out you were using insects in this recipe.
2. Did it taste the way you thought it would?
3. Would you try it again?

RECIPE

Hot cross buns

A hot cross bun is a spiced sweet bun made with currants or raisins, marked with a cross on the top, and traditionally eaten by Christians on Good Friday leading up to Easter.

Preparation time 60 minutes **Cooking time** 20–30 minutes **Makes** 16

INGREDIENTS

- 2 x 7 g sachets dried yeast
- 1¼ cups milk, warmed
- ¼ cup caster sugar
- 4 cups plain flour
- 1 teaspoon ground cinnamon
- 1 teaspoon ground mixed spice
- 1 teaspoon salt
- 60 g butter
- 1 cup sultanas
- 2 eggs
- ⅓ cup self-raising flour
- Apricot jam, warmed and sieved, for brushing

TIP: For a less traditional bun substitute the sultanas for chocolate chips and pipe the crosses using melted chocolate.

METHOD

1. Whisk yeast, milk and caster sugar until the sugar dissolves.
2. Set aside for 10 minutes.
3. Sift plain flour with cinnamon, mixed spice and salt into a large bowl.
4. Use your fingertips to rub in butter.
5. Stir in sultanas, eggs and yeast mixture.
6. Turn dough onto floured surface. Knead for 5 minutes.
7. Put in large greased bowl. Cover and leave in warm spot for 45 minutes.
8. Punch down. Knead until smooth. Shape into 16 balls.
9. Put into 30 cm x 20 cm greased baking tray. Set aside for 15 minutes.
10. Preheat oven to 200 °C. Combine self-raising flour and ¼ cup water and place into a small snap lock bag for piping.
11. Pipe crosses onto the buns.
12. Bake for 10 minutes.
13. Reduce oven temperature to 180 °C and bake for a further 15 minutes.
14. While warm, brush buns with jam.

QUESTIONS

1. Identify the factors that make these buns rise.
2. Why does the dough need time to rise?
3. Discuss the role of kneading in this recipe.
4. What does the cross on the top of these buns represent?
5. Research some other types of breads used to celebrate different occasions in other religions.



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RECIPE



Mark Fergus

Butter-less butter chicken

Coronary heart disease is Australia's biggest killer. Here is a healthier version of a classic Indian dish.

Preparation time 20 minutes **Cooking time** 20 minutes **Serves** 2

INGREDIENTS

½ tablespoon canola oil

1 onion, finely diced

2 garlic cloves, crushed

1 cm grated fresh ginger

1 tablespoon no added salt tomato paste

2 teaspoons cumin

2 teaspoons garam masala

2 teaspoons brown sugar

¼ teaspoon dried chilli flakes

¼ teaspoon turmeric

1 skinless chicken breast fillet, trimmed of all visible fat, sliced

200 g no added salt diced tomatoes

½ cup reduced-fat thick natural yoghurt

2 tablespoons water

100 g green beans, trimmed and steamed

Coriander sprigs, to garnish

½ tablespoon toasted flaked almonds, to garnish

1 cup cooked basmati rice, to serve

METHOD

1. Prepare ingredients.
2. Heat oil in a deep non-stick frying pan over medium heat. Add onion and cook for 10 minutes. Add garlic and ginger and cook 2 minutes. Add tomato paste and cook 1 minute.
3. Reduce heat to low and stir in the cumin, garam masala, brown sugar, chilli flakes and turmeric. Add chicken. Cook, stirring, for 2–3 minutes.
4. Add the tomatoes, yoghurt and water, stir to combine. Bring to the boil, then reduce heat to low and cook, uncovered, for 15–20 minutes or until the chicken is cooked and the sauce has thickened.
5. Serve with cooked basmati rice and the steamed beans. Garnish with coriander sprigs and toasted flaked almonds.

QUESTIONS

1. Why would this recipe be suitable for someone with a heart condition?
2. Discuss why low-salt products have been recommended.
3. Suggest a dessert that would be suitable to serve to a patient with a heart condition.

TIP: Beans can be steamed in a steamer basket or saucepan over a pan on the stove, or in the microwave.

RECIPE

Moroccan chicken and roast vegetable salad

Preparation time 30 minutes **Cooking time** 30 minutes **Serves** 2

INGREDIENTS

1 small chicken breast
½ cup sweet potato or pumpkin, diced
½ small red capsicum, sliced
1 carrot, diced
1 small zucchini, sliced
½ cup baby spinach leaves
¼ cup canned chickpeas
1 tablespoon oil (to cook chicken and vegetables)
1 tablespoon Moroccan spice mix (cumin, coriander, cinnamon and ginger)
¼ cup quinoa, dry, rinsed
½ cup water
½ teaspoon turmeric
Black pepper, to taste

Salad dressing

1 teaspoon smoked paprika
2 tablespoons orange juice
2 teaspoons olive oil
Zest of 1 orange

TIP: Use microwavable quinoa or brown rice to save time.

METHOD

1. Preheat oven to 200 °C and line a large baking tray with baking paper.
2. Place diced vegetables on baking tray and drizzle with olive oil (season with cracked black pepper if desired), then bake in oven for 30 minutes or until vegetables are soft and golden.
3. Add water and turmeric to dry quinoa and cook in a saucepan on a low-moderate heat for 12–15 minutes, stirring occasionally.
4. Cover and stand for a further 5 minutes and then fluff quinoa with a fork.
5. Combine orange juice, orange zest, smoked paprika and olive oil in a small jug and set aside.
6. Heat oil in a non-stick frypan and cook chicken until lightly browned.
7. Add Moroccan spice mix and chickpeas and cook for a further 2–3 minutes until fragrant.
8. Add roasted vegetables, quinoa and baby spinach leaves to the cooked chicken and stir until spinach leaves wilt slightly.
9. Add salad dressing and stir to combine.

QUESTIONS

1. What is a low-FODMAP diet?
2. Investigate the types of foods that have a low FODMAP rating.
3. Suggest other meals that could be eaten by those following this type of diet.



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RECIPE



Mark Fergus

Vegetarian sausage rolls

This is a twist on an old favourite – can you tell they have no meat?

Preparation time 15 minutes **Cooking time** 25–30 minutes **Makes** 30

INGREDIENTS

1 cup low-fat cottage cheese
½ cup pecans (or walnuts)
2 eggs
1 onion, chopped
1 tablespoon soy sauce
1 cup quick-cooking oats
½ cup dry breadcrumbs
Salt and pepper
3 sheets puff pastry
1 tablespoon milk

METHOD

1. Preheat oven to 200 °C.
2. Place cottage cheese, pecans, eggs, onion and soy sauce in food processor and process until fine.
3. Transfer mixture to large bowl, add oats, breadcrumbs and seasoning. Mix well.
4. Cut pastry sheets in half, spoon mixture down edge of each half.
5. Brush other edge with milk. Roll to enclose filling with pastry. Repeat with remaining pastry sheets.
6. Cut each roll into 5 even lengths. Place on lightly greased oven tray, glaze with milk and prick with fork.
7. Bake for 10–15 minutes or until crisp and golden.

QUESTIONS

1. Identify the nutrients found in this recipe.
2. What is the main source of protein?
3. Design a range of unique sausage roll flavours.

RECIPE

Energy balls

Athletes, especially those with busy schedules, sometimes have trouble taking in enough fuel and protein to match the intensity of their workouts. Energy bites are a quick and tasty way to meet nutritional needs before or after a workout and require almost no prep time. They are totally customisable and can be altered to suit each individual's tastes and preferences.

Preparation time 5 minutes **Cooking time** nil **Makes** 10–12

INGREDIENTS

1 cup pitted dates, soaked and drained if dry

1½ tablespoons coconut oil

½ cup dried blueberries/ cranberries

½ cup rolled oats

1 tablespoon shredded coconut

Coconut, ground flax, chia seeds and hemp seeds for rolling

TIP: Add a little protein powder to increase the protein content of these balls. Vary the flavours by adding different fruits to your mix or introducing some nuts and seeds.

METHOD

1. Use a food processor to **pulse** dates until soft and broken down.
2. Add coconut oil, berries, rolled oats and shredded coconut, and process until everything comes together and forms a ball.
3. Remove dough from processor.
4. Use your hands to form the dough into smaller bite-sized balls.
5. Roll balls in desired toppings and store in an airtight container in the refrigerator or freezer.

QUESTIONS

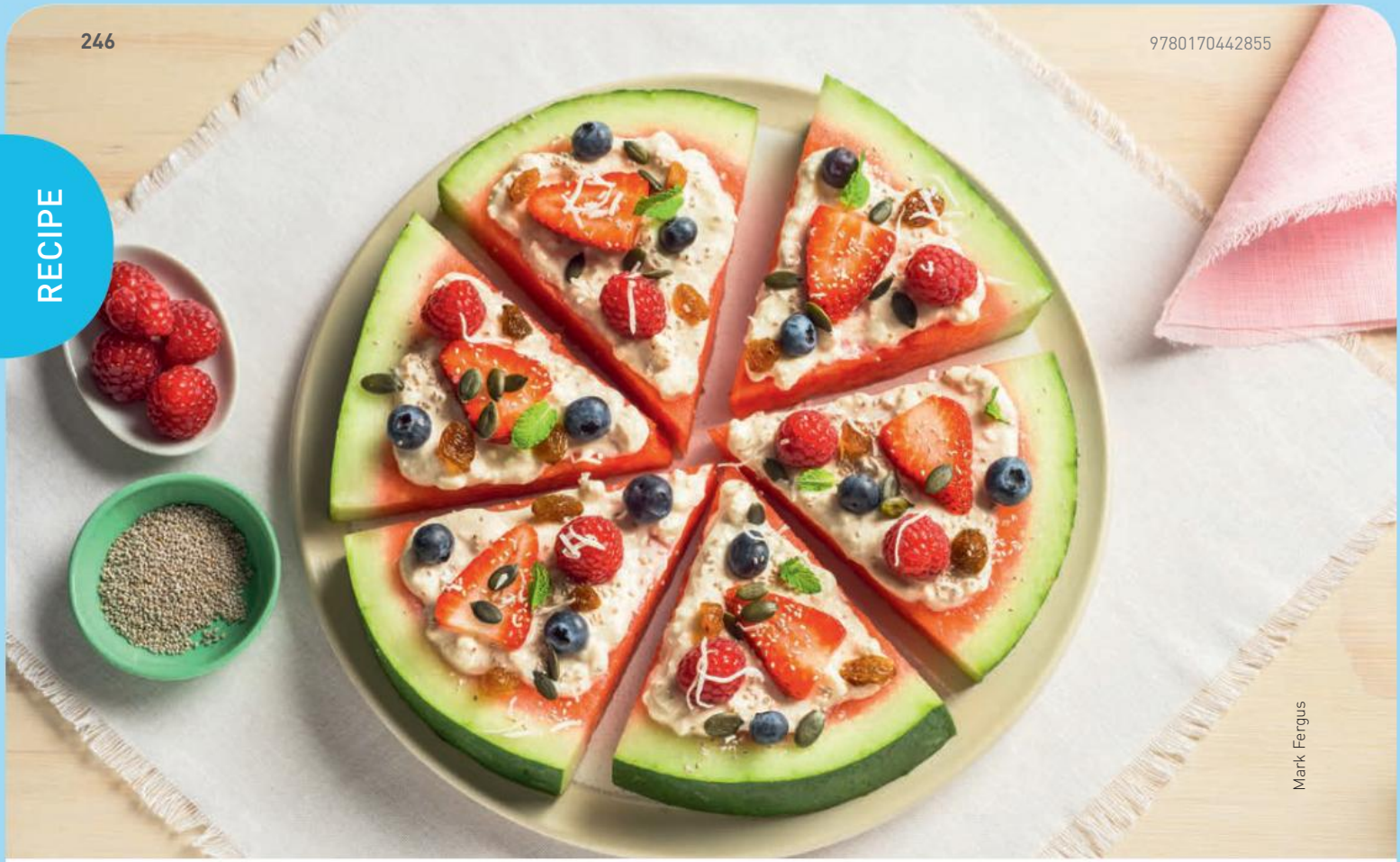
1. When would these types of energy bites be useful in your day?
2. Suggest other ingredients you could add to customise this recipe.
3. What other types of snack would be good for athletes? Why?



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RECIPE



Mark Fergus

Watermelon pizza

Making food look fun can encourage children to eat and enjoy it. Cute designs, shapes and faces will make fruit and vegetables seem like a fun option for lunch, dinner or a snack!

Preparation time 10 minutes **Cooking time** nil **Serves** 6

INGREDIENTS

⅓ cup cottage cheese

1 tablespoon Greek-style yoghurt

½ teaspoon honey

⅓ teaspoon cinnamon

6 x 2 cm-thick wedges of watermelon

1 x 125 g punnet of raspberries (or frozen)

6 strawberries, hulled, sliced

1 x 125 g punnet of blueberries (or frozen)

2 teaspoons sultanas

1 teaspoon chia seeds or sunflower seeds

1 tablespoon pumpkin seeds

1 tablespoon shredded coconut

Fresh mint to garnish

METHOD

1. Mix cottage cheese, yoghurt, honey and cinnamon in a bowl until smooth.
2. Spread mixture over watermelon slices.
3. Arrange in a circle to make a pizza shape and scatter with berries, sultanas, seeds, coconut and mint to serve.

QUESTIONS

1. What other fruit could be used in this recipe?
2. Make a list of other 'tricks' that might be used to help disguise fruits and vegetables for children.
3. Design a dish that makes vegetables more appealing to a child.

RECIPE

Chocolate apple muffins

Food allergies can limit some food choices, but these easy muffins are perfect for lunchboxes for all the family, especially those who are unable to tolerate gluten, dairy or egg.

Preparation time 30 minutes **Cooking time** 15 minutes **Makes** 12

INGREDIENTS

1½ cups gluten-free plain flour
¼ cup cocoa
1 teaspoon bicarbonate of soda
½ teaspoon salt
1 teaspoon ground cinnamon
¾ cup raw caster sugar
⅓ cup vegetable oil
3 teaspoons white vinegar
1 teaspoon vanilla extract
1¼ cups water
1 medium granny smith apple, peeled, grated (You'll need ½ cup grated apple. Squeeze out as much liquid as possible.)

METHOD

1. Preheat oven to 180 °C.
2. Line each hole of a 12-hole, ⅓-cup-capacity muffin pan with paper cases.
3. Combine flour, cocoa, bicarb, salt and cinnamon into a bowl. Stir in caster sugar.
4. Whisk oil, vinegar, vanilla and 1¼ cups water a large jug.
5. Add to flour mixture. Whisk until smooth and combined.
6. Stir in apple.
7. Divide mixture among prepared pan holes.
8. Bake for 15 minutes or until tops spring back when lightly pressed. Stand in pan for 5 minutes. Transfer to a wire rack to cool.

QUESTIONS

1. Discuss why allergies may limit food choices.
2. Why is it important to preheat the oven when baking?
3. Design a lunchbox for a child who is dairy and lactose intolerant.



Mark Fergus

CHAPTER 7



Food for special occasions

FOCUS AREA:

Many of the significant events in our lives are celebrated with family and friends and often revolve around food. In fact, many foods can be associated with special occasions throughout the world. The reasons for celebrating are many and varied, but inevitably, whether the occasion is a small-scale social gathering or a larger, more extravagant event, food is the focus. No matter how big or small the occasion, it will involve some food planning and preparation, and at all times the food must be kept safe for consumption and look great.



CHAPTER CONTENT

In this chapter you will:

outline the historical significance of food

explore the reasons for celebrating with food

investigate the significance of food in various cultures around the world

design, plan and prepare food items for special occasions

demonstrate
- knowledge of the correct equipment and techniques to use in food preparation
- how to prepare food safely and hygienically

investigate
- factors to consider when planning menus for special occasions
- the importance of food presentation and service for special occasions

devise workflow plans to assist you in the safe and hygienic preparation of food for special occasions.

Pre-test quiz

RECIPES
- Basic butter cake
- Brazilian chocolate caramels (brigadeiros)
- Chicken and corn party pies
- Chinese New Year noodles
- French onion soup
- Marinated steak with soft tacos
- Matzo ball soup
- Vienna cream icing

FOOD FACTS

In Armenia, the traditional Christmas Eve meal consists of fried fish, lettuce and spinach.

In the USA, baseball fans gobble up 26 million hot dogs every baseball season! Some say hot dogs were first created and sold by Germans living in the USA as early as 1890.

Latkes are crispy fried potato cakes traditionally eaten during Hanukkah. The consumption of fried foods during this time reflects the biblical significance of oil in the Jewish religion. These treats are usually served with a side of sweet apple sauce.

Norfolk Island, an external Australian territory, recognises Thanksgiving as a public holiday.

September 16 is National Guacamole Day! This yummy and nutritious snack is made from avocados.

Pizza is the most widely Instagrammed food, directly ahead of steak and sushi.

The Aztecs may be known for their love of chocolate, but according to the International Cocoa Organization they also used cocoa beans as currency and to pay their taxes.

World Food Day is celebrated around the world on 16 October in honour of the date of the founding of the Food and Agriculture Organization of the United Nations in 1945.

FOOD WORDS

Christianity religion based on the teachings of Jesus of Nazareth

colonisation a process by which a central system of power dominates the surrounding land and its components

deforestation the removal of a forest or stand of trees, usually for commercial purposes (e.g. to use the land for farming)

food presentation the art of modifying, processing, arranging or decorating food to enhance its aesthetic appeal

garnishing the art of decorating food or drinks to make them visually appealing and appetising

globalisation the process by which the world is becoming increasingly interconnected as a result of massively increased trade and cultural exchange

indigenous ethnic groups who are the original settlers of a given region, also known as first peoples, aboriginal peoples or native peoples

Islam religion based on the words and philosophy of the prophet Mohammed

Judaism religion based on the holy book of the Torah and the teaching surrounding it

menu a list of foods or a combination of foods and drinks that will be served for a specific occasion

New World a name for North, Central and South America used during the time of first exploration and colonisation of this area by Europeans

portion specific size, shape and amount of food to be served; to measure or divide foods into pre-determined quantities

resource something that human society attaches value to due to its usefulness

Historical significance of food

Without food there would be no history. In every era, across time and across borders, the unfolding of history has been intimately tied to the need for food, the production and trade of food, and the culture of food. Food feeds the soul, fuels the body, affects the environment, inspires artists, influences politics and impacts just about every part of our lives. Early agricultural societies formed around the production of food; they developed social structures that allowed some people to focus on farming and others to work outside of agriculture, eventually leading to social classes and the concentration of power around those who controlled access to food. Eating together or eating a similar cuisine binds families, cultures and states together, while food taboos and other beliefs draw distinctions between strangers.

Food has been the foundation of international trading networks – from wine to olive oil to salt to spices. The quest for spices and exotic foodstuffs led to the European discovery of the **New World**, as well as to the connecting of the entire globe through trade.

As discussed in Chapter 1, the cuisine of Australia reflects its history. European **colonisation** saw the introduction of European ingredients and cooking styles to Australia. Later in the 20th century, the influx of immigrants from many foreign nations created a rich diversity in food choices. As the world becomes more globalised, it is easier to learn about and access cuisines from different countries and cultures.

HANDS-ON

PURPOSE

Outline the significance of food throughout history.

Life was not always easy for the early explorers. For example, Ferdinand Magellan, who was the first explorer to sail around the world, feared his crew would starve when they ran out of food on their voyage.



Figure 7.1 Magellan's route around the world. Once he left Spain, Magellan set sail for the Canary Islands and then Brazil. He travelled down the coast of South America until he discovered the passage, now known as the Strait of Magellan, between the Atlantic and Pacific oceans. He continued to Guam and then the Philippines, where he was killed in battle. What was left of the expedition sailed to Brunei in Borneo and through the Molucca Islands and Timor before crossing the Indian Ocean, hugging the Cape of Good Hope and returning to Spain.

ACTIVITY

Pretend that you are planning your own voyage around the world in Magellan's time, following his path.

1. How much food would you pack for the trip? (Keep in mind that food spoils and you will need room for other supplies and people.)
2. What kinds of food would you bring?
3. Make a travel guide of places along the route where you would stop to visit and get more food.
4. Research and write a brief paragraph explaining what each place is like, what sights you would see, and what foods you would expect to get there.

   Hint: Try using a shared Google map and complete this as a collaborative group task.

CHRISTOPHER COLUMBUS


Shutterstock.com/Everett Historical

Italian explorer Christopher Columbus (1451–1506) is famed for his 1492 'discovery' of the 'New World' of the Americas on board his ship *Santa Maria.*

Although Columbus did not technically discover North America, he was the first European to explore the archipelago known as the Bahamas and other islands in that region. He may not have been the first person ever to step foot on the land, but his voyage started the European exploration and colonisation of the continent.

The Bahamas was indeed a whole new world for Europeans like Columbus. The native culture and foods were both strange and surprising to the explorer and his crew. Beans, squash, maize and new types of game and seafood were all commodities that were enjoyed and brought back to Europe. This was the start of a converged food culture. On his subsequent voyages, Columbus went further south to Central and South America, further immersing himself in the gourmet delights of this region.

The 'Columbian Exchange' (Table 7.1) is the reason why there are now tomatoes in Italy, oranges in Florida, chillis in Thailand and India, chocolate in Belgium and sweet potatoes in China. Columbus's voyages, and those of the explorers, plunderers and adventurers who followed after him, distributed the foods of the New World around the globe, revolutionising diets, fostering population growth and creating new economic markets. No matter where in the world people lived then, they started to experience new foods after Columbus returned to Europe, forever changing the global food landscape.



Table 7.1 The Columbian Exchange moved commodities, people and diseases across the Atlantic Ocean

Americas to Europe, Africa and Asia					
Cacao bean	Squash	Tobacco	Sweet potato	Peppers	
Pineapple	Pumpkin	Turkey	Avocado	Beans	
Peanut	Potato	Tomato	Corn	Vanilla	

Europe, Africa, Asia to Americas				
Coffee bean	Peach, pear	Olive	Onion	
Banana	Citrus fruits	Honey bee	Sugar cane	

Diseases	Livestock	Grains
• Smallpox • Influenza • Typhus • Measles • Malaria • Diphtheria • Whooping cough	• Cattle • Sheep • Pig • Horse	• Wheat • Rice • Barley • Oats

QUESTIONS

1 Who was Christopher Columbus and what did he do?
2 Describe the diet of the native peoples in the New World. How do you think this would have differed from what was being eaten in Europe at that time?
3 Assess how Columbus's journey changed the global food landscape.
4 Compile a list of foods you eat today that were 'discovered' by Columbus.
5 Debate which commodity introduced to the New World by the Columbian Exchange was the best. Which was the worst?

PRACTITIONER FOCUS

UNIT REVIEW

LOOKING BACK

1 Describe how food and history are linked.
2 Discuss why and how early agricultural societies were formed.
3 Historically, why was food significant in world trading networks?

FOR YOU TO DO

4 European interest in trade was increased by the Crusades. What were the Crusades and how did they influence trade?
5 Investigate the 'spice routes'. What were they and how did they help shape history?
6 Design a timeline to outline some of the key historical food events throughout world history.

TAKING IT FURTHER

7 Find out about some of the other early explorers (e.g. Marco Polo, Captain James Cook) who were responsible for early global food trade. What did they discover and how is it relevant to us today?

Cultural significance of foods around the world

There are almost 200 countries in the world today, and every country has its own traditional food. Food is part of every country's culture and is an important part of any celebration. It is what makes countries unique. Food helps to form the identity of groups of people and can be used to strengthen and unite communities. Around the world, food is used in celebrations such as weddings, birthdays, religious festivals and the start of a new year. Each country and culture use food to celebrate in unique and special ways.

International indigenous peoples

Food has been at the centre of indigenous cultures for millions of years. Indigenous peoples have a long history of food systems and traditions depending on the traditional knowledge of their unique local ecosystems. According to the United Nations, an estimated 370 million people, representing more than 5000 different cultures across 90 countries, identify as indigenous.

Indigenous diets differ around the world; however, as a rule they are nutritious, varied, and reflect the local environment and resources. For instance, the Canadian Inuits include caribou (reindeer), cold water fish and seals in their menus, while the tribal peoples of eastern India focus on dishes based on exotic herbs, greens and vegetables.

In fact, the myriad indigenous groups around the globe focus on maximising the nutrient potential of the staple foods they gather, prepare and consume. Some examples of indigenous tribes include the Aché who are nomadic hunter-gatherers found in eastern Paraguay, the Maasai pastoralists in southern Kenya and northern Tanzania, the millet-farming Kondh agriculturalists in eastern India, the Sámi of Scandinavia, and fishing and herding groups such as the Inuit in northern Canada.

Traditionally, indigenous groups follow sustainable food practices and show a great deal of respect for their natural environment. Tribes are knowledgeable and only take from the land what they need, managing their lands well and conserving precious resources such as water and wood in order to protect and nurture the biodiversity of their homelands. For example, Native American elders historically planned seven generations ahead when creating food systems. Each generation was taught through stories, dance and music that it was their responsibility to ensure the survival of all those who would follow.

The disruption of traditional lifestyles due to colonisation, globalisation and deforestation has meant that some of this historical knowledge and connection has been lost. However, around the world there is a growing awareness of the importance of these minority cultures and a quest to understand the knowledge available from these long-evolved cultures and patterns of living in local ecosystems.



Getty Images/E+/brittak

Figure 7.2 A Maasai pastoralist looking after his cattle

FOOD IN FOCUS

CULTURAL SIGNIFICANCE OF FOODS

PURPOSE

To investigate the significance of foods to cultures around the world.

The strawberry

The strawberry (sometimes referred to as the 'heart berry', because of its shape) is an important food and medicine in many indigenous groups of North America. Its notable heart shape has inspired many myths, legends and stories.

In these groups, many believe that the heart berry and its plant have much to teach us. Indigenous elders believe that the heart berry is connected to the strawberry plant in the same way that the human heart is connected to all the organs and parts of the human body. The heart berry is reminiscent of reconciliation and teaches people how to maintain heartfelt relationships in families and communities.

Because they are excellent sources of vitamin C, the berry and the leaves of the plant have traditionally been used to treat digestive problems, skin issues and to strengthen the uterus during and following pregnancy.

ACTIVITY

Try this simple recipe for a traditional strawberry drink.

INGREDIENTS

¼ cup crushed or pureed strawberries
1 cup water
Sugar or honey to taste
Snow (or ice)

METHOD

1. Rinse berries and remove the leaf tops.
2. Use a grinding stone to chop and crush to a smooth pulp.
3. Mix the crushed strawberries and water in a jug.
4. Pour over snow.
5. Serve with sugar or honey on the side to be sweetened to personal taste.

QUESTIONS

1. Discuss the reasons strawberries are significant to indigenous cultures in North America.
2. Outline the teachings that can be learnt from this fruit.
3. Compare this traditional recipe to cold beverages that we prepare today.
4. How could you change this recipe to use more modern techniques?

French cuisine

French cuisine is arguably the most revered on earth; indeed, the very word 'cuisine' is French.

The French believe food to be sacred and place emphasis on the rituals they follow when preparing and eating their cuisine. Selecting fresh ingredients of the best quality that have been treated with reverence and respect is of the utmost importance. No matter the occasion, the table is laid with care and no phones, watches or even clocks are permitted at the table. The celebration of eating is not only about the food, but also reflects the company each meal is shared with.

French cuisine varies widely based on the region, but fresh fruits, vegetables, meats, fish and cheese are common ingredients that are used nationally. Some popular food items include:

- croissant – a flaky buttery pastry that is typically consumed for breakfast with butter and jam
- croque monsieur – a toasted ham sandwich topped with cheese
- coq au vin – a chicken stew with wine, lardons, baby onions and mushrooms
- bouillabaisse – a fish stew, originating from Marseille, which can vary depending upon the fish available
- crème brulee – a dessert with a custard base and hard caramel top.


Getty Images/iStock Unreleased/Stieglitz

Figure 7.3 Croissants are one of France's many famous food exports.

France has many national celebrations and shares some of these, including Christmas, Easter, Halloween and Eid, with the rest of the world. France also has its own national festivals such as Bastille Day and May Day.

Korean cuisine

Korean food is one of the world's healthiest cuisines. It is unique, colourful and packed with flavour, and emphasises cooking meats and vegetables simply. Many of the foods and customs that are seen in Korea today originated in the complex regimens of royal cuisine and the ancient courts. Careful consideration is given to colour and texture, along with temperature and spiciness, to achieve a pleasing balance between taste and presentation.


iStock/Getty Images Plus/undefined undefined

Figure 7.4 Hansik is traditionally served as a communal meal in Korea.

Hansik is a traditional Korean cuisine that is tasty and healthy due to the cooking methods used. These meals include boiled rice, side dishes and soups that accompany dishes typically made from seafood, vegetables and/or meat. Fermented foods such as kimchi (fermented cabbage), ganjang (soy sauce), doenjang (soybean paste) and gochujang (Korean chili paste) are also key components.

An important part of Korean food culture is not just the dishes themselves, but the way they are eaten. Sharing is essential, with large main platters and many smaller side dishes on the table, from which everyone helps themselves in communal meals.

Traditional Korean holidays reflect the influence of the seasons, rural agricultural life, and the religions of Buddhism and Confucianism.

The most celebrated traditional holiday in Korea is Seollal (Lunar New Year's Day), which marks the first day of the Korean lunar calendar. This day is traditionally about paying respect to elders and involves ancestral rites including the exchange of well wishes and *Sebae*, a traditional ceremony to honour one's elders. *Charye* is another ceremony that serves as a memorial to ancestors that is practised in a *sadang* or transitional shrine. Foods enjoyed on this day include tteokguk, a soup made with sliced rice cakes, believed to bring good health, long life and good harvest. Other foods eaten on the holiday include a variety of jeon (pancake-like dishes), tteok (rice cake), bulgogi, galbi (grilled marinated beef), sikhye (fermented rice drink) and sujeonggwa (a traditional sweet Korean beverage).

Vietnamese cuisine

Vietnamese cuisine is fragrant, dynamic and diverse, offering a diversity of dishes that are aromatic and subtle yet have a complex range of flavours. The food of Vietnam is all about yin and yang, and aims to find the perfect balance of each of the five taste elements of sweet (earth), salty (water), bitter (fire), sour (wood) and spicy (metal). These elements further influence a dish's colours, textures and nutritional content – all of which aim to create a culinary experience that provides a balance that is beneficial for the body, mind and spirit.

Vietnamese cuisine is known for using fish sauce, soy sauce, rice, fresh fruits and vegetables, and herbs and spices including lemongrass and lime. Throughout the country there are distinct regional differences; however, there are some common features. The emphasis is always on serving food that is as fresh as possible. Vegetables are usually eaten raw; or, if cooked, they are only briefly boiled or stir-fried. Fish is the most common source of protein and is prepared in a variety of ways: steamed, sautéed or fried; while other meats such as pork, chicken or prawns are generally lightly cooked. Herbs and vegetables are essential components of most Vietnamese dishes and are used in abundance. Broths and soup-based dishes are common across all regions of the country, and colourful condiments often accompany a meal.

The national dish of Vietnam is pho, which is a noodle soup traditionally made from beef stock but may also be made from chicken or pork stock. The broth is served over noodles, fresh herbs such as coriander, mint and basil, bean sprouts, and sliced meat or fish balls. It is garnished with chili, lime wedges and additional herbs you can add yourself. Pho is typically consumed for breakfast and lunch and varies in different regions of the country.



Shutterstock.com/Ratov Maxim

Figure 7.5 Vietnamese cuisine uses fresh ingredients, lots of herbs and vegetables, and a minimum of dairy and oil products.

Vietnam has a long history of invasion and colonisation, so it is no surprise that its cuisine incorporates aspects of several other cultures. The banh mi sandwich is an example of an iconic Vietnamese dish that brings together several cultural traditions all in one crispy bun. A golden French baguette (introduced to Vietnam by French colonists in the late 19th century) is filled with pork pâté, Chinese char siu (barbecued pork), American hamburger meat, mayonnaise, and a mix of Vietnamese herbs and chili sauces. They are sold by street vendors throughout the country.

Tet, the Vietnamese New Year, was originally celebrated by farmers to thank the gods for the arrival of spring. It is the most important celebration of Vietnamese culture and is mindful of the connection between humans and their natural and spiritual world. It is a colourful time when families come together to celebrate, and the streets are decorated with flowers, lanterns and lights. The traditional celebratory meal consists of four dishes: giò (Vietnamese sausage), ninh (stew), nem (spring rolls) and mọc (meatballs).

HANDS-ON

CLASS FOOD EXPO

PURPOSE

Design, plan and prepare food items for special occasions around the world.

ACTIVITY

1 In groups of three or four, identify a country for investigation.
2 Develop an understanding about the culture of the country (e.g. location, customs, celebrations, music, costume or traditional dress, people, lifestyle, language).
3 Devise a plan for preparing food from the country of choice. This could include inviting parents to assist in food preparation and serving.
4 Develop a food order list and costing of ingredients.
5 Prepare and present your food and showcase your chosen culture at the class expo.
6 Promote the event and your chosen country (e.g. school newsletter, posters, school intranet or website, SRC or recess and lunchtime town criers, or at the school assembly).

UNIT REVIEW

LOOKING BACK

1 Explain why food is significant to different cultures around the world.
2 Discuss, using examples, the connection that international indigenous cultures have with food.
3 Assess the reasons that indigenous food knowledge is being lost around the globe.
4 Explain why food is so important to the French people.
5 Give some examples of well-known French foods.
6 Outline the reasons why Korean cuisine is considered healthy.
7 Describe Hansik.
8 What foods are associated with Seollal?
9 Describe some of the flavours you would expect to find in Vietnamese cuisine.
10 Describe the Vietnamese dish *pho*.
11 List the five elements considered important in food preparation in the Asian tradition.

FOR YOU TO DO

12 Investigate diversity and celebrations across the globe. Research a celebration within a specific culture.
- How often does your chosen celebration occur?
- Who takes part in the celebration?
- Explain the tradition and history of this celebration (i.e. what customs are observed). Is there a special song, dance or performance that takes place? Do people fast or feast? How long has this been an important part of the culture that you are researching?
- What kinds of food are traditionally prepared and eaten?
- How important is food to the celebration?
- Locate or create a recipe for one of those foods.

13 Design a healthy takeaway based on your favourite food culture. Prepare and present your dish in class.

TAKING IT FURTHER

14 Invite parents with various cultural backgrounds to prepare and share food used in traditional celebrations with the class and provide more information about the celebration or other aspects of their culture (e.g. music, dress, customs).

Reasons for celebrating with food

Through much of human history, food was scarce; it sometimes took great effort to find and prepare a meal. This led to foods that were hard to procure or prepare being saved for consumption on special occasions and established the ties between celebrations and food. This mindset is still reflected in modern times where (for the majority) food is plentiful, but more expensive and delicious foods continue to be reserved for special meals.

Humans eat good food to celebrate everything: holidays, weddings, birthdays, harvests, seasons, meetings, housewarmings, anniversaries, visits from relatives, visits from strangers, even funerals. These celebrations vary throughout the world, but the

one thing they all have in common is that food is often the central focus. The reasons for these celebrations may depend on a range of factors.

HANDS-ON

GIVE ONE, GET ONE

PURPOSE

To explore different reasons for special occasions.

ACTIVITY

1. Write down three special occasions that you and your family celebrate throughout the year.
2. Consider the main reasons you mark these occasions. What foods do you associate with these events?
3. Move around the room and share your occasions with other class members, writing down any additional celebrations that others may have that you do not. Ask them why they celebrate that occasion.
4. Try to identify the foods that each person associates with the celebration. Are they all the same?
5. Explain why you think there may be differences.

Social reasons

Our society is obsessed with food, and we have incorporated eating and drinking into most of the social activities that we pursue. Social gatherings are rarely without meals, drinks and refreshments present. We use food to show people that we care about them. Food is used as a gift that everyone can understand and enjoy. Having food present at a gathering puts people at ease and creates a positive and welcoming atmosphere.

Social celebrations can be either formal or informal and may be planned events like a wedding or an unplanned, impromptu catch-up with friends. In Australia they are often informal or casual, which is reflected in the popularity of barbecues and picnics.

Food is almost always shared. People tend to eat together, with mealtimes being events when the whole family or settlement or village comes together. The sharing of a meal embodies values of hospitality, friendship, sacrifice and compassion. It is a universal medium that crosses cultures and times to help create bonds, provides an opportunity to talk with others, and is a chance for teaching and learning as well as a way of expressing gratitude.

FOOD IN FOCUS

MEALS ON WHEELS

PURPOSE

To explore social reasons for celebrating with food.

Meals on Wheels is a name familiar to Australians and is at the heart of many communities. It represents helping hands, teamwork and looking out for each other. It is all about people in the community joining forces to help others.

While age and disability may reduce some people's capacity to get out and about, Meals on Wheels helps make it possible for them to continue to live in their own home, where most are happiest, and maintain their independence. Delivery of nutritious meals, social interaction and a friendly check of a client's wellbeing by Meals on Wheels volunteers can help people live the life they choose.

Many recipients comment that their meal delivery and visit is the highlight of their day. For some this may be the only social interaction they experience on a regular basis. Meals on Wheels helps people who are without close family to celebrate special days such as their birthday and Christmas by delivering some extra cheer during these special periods.

From its inception over 60 years ago, Meals on Wheels has grown to become a driving force of care in the community. In the course of a year, over 14.8 million meals are delivered by more than 78 700 volunteers to about 53 000 recipients Australia-wide in cities, regional and rural areas. Of these, about 4.5 million meals are delivered by 35 000 volunteers in NSW each year.

>

While the tradition and values of Meals on Wheels remain true to its origins, a focus on engaging people of all ages from all walks of life is unfolding and bringing renewed energy, ideas and vision to help the organisation continue to provide a vital service and meet the needs of the community.

Source: https://nswmealsonwheels.org.au/About

QUESTIONS

1. What is Meals on Wheels, and what does the organisation do?
2. Why do people need this service?
3. How can this service contribute to the social wellbeing of the recipients?
4. How long has Meals on Wheels been in operation?
5. Describe the way this organisation is changing.
6. Find out how you could volunteer your time to help with a service such as this one.



Newspix/Shane Bell

Figure 7.6 Meal deliveries are so much more than just a meal. It's an opportunity to have a chat and check everything is OK.

Religious reasons

The nine largest religions collectively observe more than a hundred holidays throughout the year. In fact, while you are reading this, somewhere in the world a meal, ritual or offering is being prepared in religious observance. Food forms a central part of festivals and celebrations in many of the world's major faiths.

The following are some religious festivals in which food has an important role.

Ramadan

Ramadan is celebrated by Muslims in the ninth month of the Islamic lunar calendar.

It is believed that the beginnings of the Qur'an, the holy book of Islam, were revealed to the Prophet Muhammad during this month. Throughout Ramadan, Muslims abstain from eating and drinking between sunrise and sunset. Just prior to sunrise, to help prepare for the daily fast, a meal called *suhoor* takes place. Vegetables and fruits, tea, yoghurt, dates, and foods that offer lasting sustenance such as beans and lentils are consumed. Another meal, *iftar*, is eaten after sunset. 'Eid ul-Fitr' – which means the 'festival of fast-breaking' – occurs at the end of Ramadan.

During Eid ul-Fitr, Muslims may break their fast by eating traditional dishes such as beef rendang, a spicy beef dish made with coconut; tagine, a slow-cooked stew of meat and/or vegetables; klaicha, a date-filled pastry; biryani, a mixed rice dish of meat and spices, and sago dishes.

Diwali

Diwali is the five-day Festival of Lights celebrated by Hindus, Sikhs and Jains that acknowledges new beginnings and symbolises the triumph of good

over evil. Many Hindus believe it honours Laksmi, the goddess of fortune, prosperity and generosity. Based on the lunar calendar, the festival occurs sometime around October or November. Diwali is an atmospheric event involving colourful displays of lights, decorations and fireworks – particularly firecrackers. During Diwali, families and friends share sweets and gifts and provide food and goods to those in need. Foods eaten include sweets called mithai and sheera, kheer (a milky pudding) and gulab jamun (Indian doughnuts soaked in syrup), as well as savoury dishes such as vegetarian curries and samosas.



Shutterstock.com/viennetta

Figure 7.7 Laddoos and kheers are staples on the Diwali sweets table, while samosas, aloo tikkis and kebabs are also favourites during this celebration.

Christmas

Christmas is an annual Christian celebration that commemorates the birth of Jesus. It is a time to reflect upon peace, love, generosity and family, and as such is also celebrated by many non-Christians. One of the most important aspects of Christmas around the world is spending time with family and friends, sharing meals and exchanging gifts. Traditional Christmas meals are made up of roasted meat (e.g. turkey or pork) and vegetables with all the trimmings. This is followed by Christmas pudding with a rich brandy custard, Christmas cake and mince tarts. In countries like Australia, a more contemporary Christmas meal featuring cold baked ham, seafood and salads has also become popular.

Hanukkah

Hanukkah, also known as the Festival of Lights in Judaism, is an eight-night celebration that remembers the Jewish people's struggle for religious freedom. The celebration includes lighting the candles of the Hanukiah on each day of the holiday, playing with the dreidel (spinning top), eating latkes (potato pancakes) and exchanging Hanukkah gelt (chocolate coins covered in foil).

Fried foods such as latkes and sufganiyot (jelly-filled doughnuts) are eaten to remember the flame that burned for eight days even though there was not an ample amount of oil.



Getty Images/E+/TheCrimsonMonkey

Figure 7.8 Foods are often fried in oil during Hanukkah.

FOOD IN FOCUS

RELIGIOUS FOOD RITUALS

PURPOSE

To explore the food rituals and ceremonies associated with world religions.

Use the images below and the internet or other resources available to you to discover the food rituals of various religious groups.







Clockwise from top left: Shutterstock.com/ Nina Firsova/LeonP/KawaiiS

QUESTIONS

1. View each of the images. What do you see? What do you think? What do you wonder?
2. Investigate three food rituals (these or others) celebrated by different religious groups from around the world. Find out what foods are associated with each celebration and explore any special rituals that may occur.
3. Discuss the similarities and differences between the various rituals you have observed.
4. Examine how these rituals are similar to or different from those practised by your own family and friends.
5. Each of the events featured in the photos uses a different type of bread: Easter bread, unleavened bread and lavash. Find out more about each of these breads and identify their religious significance.
6. Many other breads exist around the world. Look at Figure 7.9 and identify the different types of breads associated with different countries.

WS
See, think, wonder

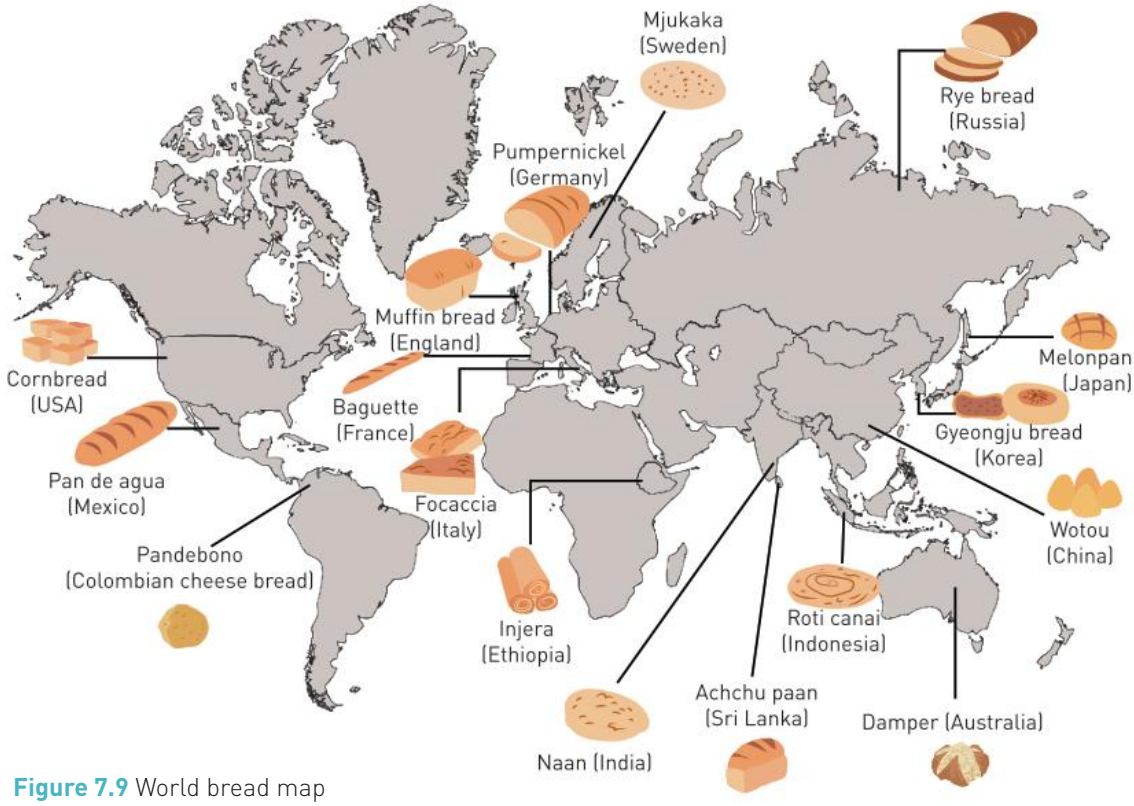


Figure 7.9 World bread map

Historical reasons

Every country, community and family, regardless of its size, has a history of which it can be proud. Cultural festivities allow the younger generations to gain an appreciation of history, and give the senior generation an opportunity to renew its bonds with the past. Some events celebrated historically include Carnivale, Thanksgiving, Halloween and Day of the Dead. All of these special occasions have traditional foods and drinks associated with them.

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 at Gallipoli in Turkey in 1915. Women baked these biscuits to raise funds for the war effort, ingeniously using golden syrup as a binder at a time when eggs were in short supply. Today, people still bake Anzac biscuits and use them in a variety of interesting and innovative ways.



iStock/Getty Images Plus/pamspix

Figure 7.10 Biscuits similar to these were sent to soldiers abroad because the ingredients did not spoil easily.

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.

La Tomatina, Buñol, Valencia, Spain

La Tomatina is a food fight festival held on the last Wednesday of August each year in the town of Buñol, near to Valencia, in Spain, and is linked to the harvest season. The tomato fight of La Tomatina has been a tradition in Buñol since about 1944 or 1945. However, no one is entirely sure of the origin of this world-famous event! Thousands of people make their way from all corners of the world to fight in this 'world's biggest food fight' where more than one hundred metric tons of over-ripe tomatoes are thrown in the streets.



Shutterstock.com/Iakov Filimonov

Figure 7.11 La Tomatina: the food fight to end all food fights!

HANDS-ON

CELEBRATING BIRTHDAYS

PURPOSE

To explore reasons for celebrating with food by decorating a birthday cake..

A birthday is recognised around the world as the anniversary of the birth of a person, but the way birthdays are celebrated varies widely. It is believed that birthday celebrations began with the ancient Egyptians, who celebrated birthdays of the Pharaohs. Ancient Romans were the first civilisation to celebrate family and friends' birthdays together, and the Germans added the cake. Now birthday cakes are a historical tradition in many places.

MATERIALS

The recipes for a basic butter cake on page 280 and Vienna cream icing on page 287
Pen and paper for planning your design
icing and decoration ingredients

>



ACTIVITY

1 Design your birthday cake. Select a theme, appropriate colours and ingredients, then draw your design and show your teacher.
2 Once your design has been approved, create a shopping list/food order. Remember to include all the ingredients that you will need to decorate your cake.
3 Collect materials that will add to your cake display, such as a tablecloth, party hats and streamers.
4 Make the cake in one practical lesson and decorate it in the next practical class. Display and photograph your cake.
5 Evaluate your final cake – did it turn out the way you thought it would?
6 Did the cake taste as good as or better than it looked? Explain how this may have affected what people thought of your final product.
7 Look at the other cakes that are presented and complete the activities below.

Remember to use appropriate and hygienic handling techniques when preparing your design.

QUESTIONS

1 Describe how your cake was displayed.
2 What other methods and materials did students use to display their cakes?
3 List the decorations that were used.
4 Discuss the features that worked well on the cakes presented.
5 What areas need to be improved in your own cake and in others?
6 Find out how birthdays are celebrated in different parts of the world.



UNIT REVIEW

LOOKING BACK

1 How and why is food used for celebrations?
2 Why is food used as a form of social currency?
3 Explain the importance of sharing food.
4 Discuss the differences between formal and informal celebrations.
5 Why do you think Australians enjoy picnics and barbecues?
6 Outline three religious events where food is an important element.
7 Give some examples of celebrations that have a historical background.

FOR YOU TO DO

8 Create a menu that you would serve to your friends for a movie night at your home. Ensure the food reflects the likes and dislikes of the social group your menu is aimed towards.
9 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.
10 Find out about Chinese New Year. What foods are associated with this celebration?
11 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.

TAKING IT FURTHER

12 Design, plan and prepare food items for special occasions, such as:
- a child's birthday party
- NAIDOC celebrations
- a small afternoon tea for your grandparents' friends
- a large-scale school fundraising event.

13 **a** Use a shared Google world map (or a hard copy on a notice board) to compile a gastronomic travel guide for world travel. Each student in the class needs to investigate a different country and event.
- Use a pin and a description box to mark significant food events celebrated in different countries.
- Include the name of the event, the time of the year it is celebrated, the main reason for the celebration and a brief description of the foods associated with the event. Also attach an image to your pin.
- Report your findings back to your class.

b Using the class investigation, choose your top 10 events to compile into your own travel journal. Imagine you have participated in these events and write a travel diary entry to describe your experience.

Menu planning for special occasions

Great parties don't just happen! Even the simplest occasion requires some thought. From creation to execution and everything in between, planning and catering for any special occasion involves several key elements. Whether you are planning to feed two close friends, 20 of your extended family or several hundred people you do not know, the success of the occasion will be influenced by how well you plan. In today's 'foodie culture', what you serve and how you serve it sends a message to your guests.

A menu is a list of foods or a combination of foods and drinks that will be served for a specific occasion. Designing a menu for any special occasion should be a fun and exciting task, but it is also a potential turning point for the success of your event – no matter what the occasion, guests remember the food! Your menu tells people what to expect from an event. Is it formal or casual? Festive or serious? Is it unique and exciting and something attendees can look forward to?

Plan your strategy behind each menu, including food and beverages. Your aim is to deliver a visible, positive emotion with every plate, bowl or glass served to your guests. Menu planning is both an art and a science: an art in the skilful blending of colours, textures and flavours; and a science in the wise choice of food for optimum nutrition and digestion. Developing a great menu for a special occasion requires a lot of thought and consideration, but the payoff can be especially rewarding. Do not be afraid to experiment and expand your horizons as you create menus for your own special occasions.

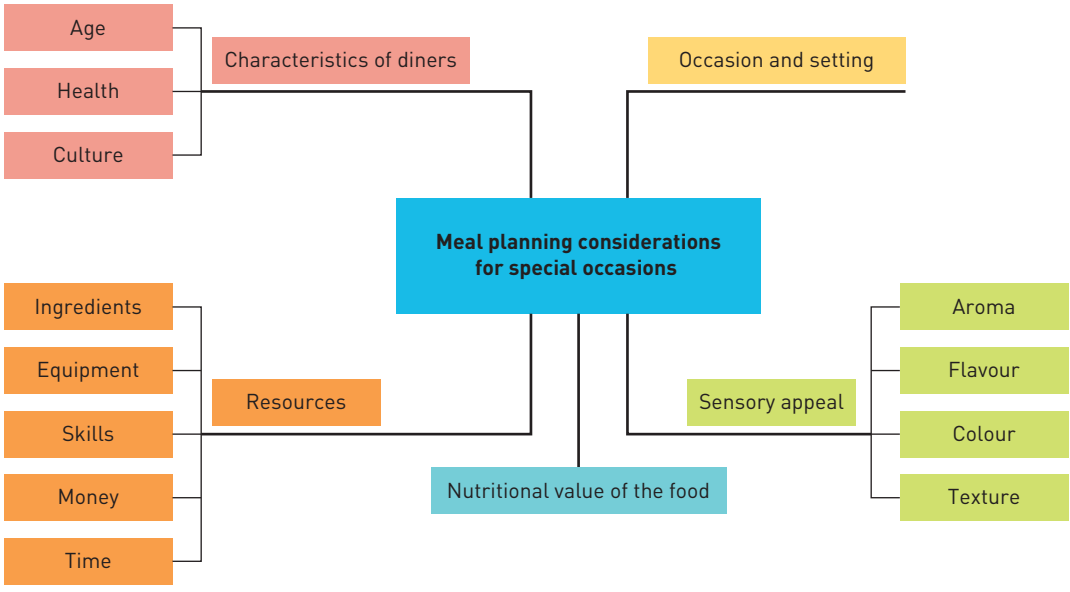


Figure 7.12 Meal planning considerations for special occasions

When planning a party, get the basics down first:

- Who is the party for (business, family, friends)?
- What is the reason for the party (theme, birthday, special occasion)?
- When is the party?
- Where is the party going to be held?
- How many people are you inviting?
- What type of party is it (brunch, lunch, dinner, hors d'oeuvres, dessert, buffet, sit-down meal)?

The most memorable gatherings aren't always the ones with the biggest food displays, the boldest centrepieces or the loudest bands. Despite Pinterest-perfect pressure and a dizzying number of options, hosts can still make a statement by following some basic event-planning rules.

Nutritional value

Celebrations are exciting! They are also great opportunities to promote a healthy lifestyle, provide a consistent message, have fun, be creative and create excitement around nutritious choices. 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 'only sometimes' section of the Australian Guide to Healthy Eating or '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. Items served at any occasion should consist of a balance of foods from the five food groups. Table 7.2 sets out some healthy snack and beverage ideas.

Australian Guide to Healthy Eating

Table 7.2 Healthy snacks and beverages

Beverages	Fruits and veggies	Wholegrains	Proteins
Water	Fresh fruit – whole, sliced or in a salad	Wholegrain crackers, pretzels or cereal bars	Bliss balls
100% fruit juice with no added sugar	Fresh vegetables – sticks for dipping or in a salad	A wholemeal English muffin topped with fruit, ricotta or nut butter	Nut or seed butter (serve with fruit or wholegrain crackers)
Herbal tea	Canned fruit or fruit cups (in water, 100% fruit juice or light syrup)	Popcorn (air-popped and with no added butter or salt)	A handful of nuts or seeds
Fruit smoothies (made with frozen fruit with no added sugar and fat-free or low-fat yoghurt)	Frozen fruit or fruit cups (in water, 100% fruit juice or light syrup)	Cracker biscuits	Trail mix made of nuts or seeds and dried fruit with no added sugar
Sparkling water with lemon, mint, cucumbers or similar added	Banana 'ice-cream' (frozen banana that has been pureed)	Baked wholegrain tortilla chips with salsa, guacamole or bean dip	Low-fat cheese (serve with fruit or wholegrain crackers) or low-fat yoghurt (serve by itself for with fruit)
Fat-free or low-fat milk	Dried fruit with no added sugar	Rice cakes (choose brown rice)	Hummus (serve with vegetables or wholegrain crackers)

Icons (L–R): Shutterstock.com/Promotion King/AVIcon/HN Works/AVIcon



iStock/Getty Images Plus/Halfpoint

Figure 7.13 Party food can be fun, tasty and healthy.

Occasion and setting

The type of occasion you are holding an event for is very important when selecting a menu. You want to be sure your food matches the ambiance of the occasion. 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, it would be problematic to serve a bowl of pumpkin soup at a stand-up cocktail party on a summer harbour cruise. If guests are at a picnic and sitting on the grass, then portable finger foods would be suitable, but a tub of

frozen gelato would be ruined without a freezer. A children's birthday party is more suited to a beach or park than a formal sit-down venue, and foods served should be healthy and fun.



Alamy Stock Photo/Edd Westmacott

Figure 7.14 Informal outdoor setting



Shutterstock.com/David Tadevosian

Figure 7.15 Formal indoor event

Sometimes, the inspiration for a special menu will be the event itself – an Australia Day beach barbecue or Sunday brunch for Mother's Day. Requests for special menu items such as celebration cakes for weddings and anniversaries may also influence menu planning. A professional dinner party, a formal banquet or an elegant occasion such as a wedding may require upscale fare. On the other hand, for an informal book club meeting or backyard get-together, more casual meals would be appropriate. Event themes may also influence the style of food you provide, the drinks, the dress code and even the venue – all of which you will need to consider in your overall budget.

When selecting the menu, the time of year should play a large part in determining food and beverages. Seasonal local foods should be included in any menu. Incorporate freshly caught seafood or regionally grown and produced goods such as bread and cheese to reflect the location and to ensure the freshest possible ingredients are used. The time of day and duration of the meal is also an important consideration for menu planning. Choose the meal type and menu options appropriate for the timing and duration of the event. Consider the common event meal examples: set out in Table 7.3

Table 7.3 Menu options for different events

Duration	Event	Menu options
30 minutes	Business lunch	Lunch boxes or sandwich platters
1 hour	Casual conference lunch or dinner	Buffet service adds variety
1–2 hours	Networking opportunity prior to dinner	Cocktail reception finger food
2 hours +	Formal or presentation dinner	A plated sit-down meal service

There are also many part to consider when choosing your event venue. Not only does commercial event room hire take up a huge proportion of your budget, but the venue also has to tick a lot of boxes that you might not have contemplated, including capacity, location and decor. Consider the tone you are aiming for in your event. A casual outdoor event allows for a less formal presentation, where guests will be able to enjoy walking around and socialising with others.



Shutterstock.com/Davisaurus Rex

Figure 7.16 Grazing tables like this one are great for more informal occasions and are especially good for outdoor functions.



iStock/Getty Images Plus/SergioZacchi

Figure 7.17 Silver service is usually reserved for formal occasions.

Characteristics of diners

The tastes and dietary requirements of your guests should also be a consideration when designing a menu. This may determine whether you choose an informal, casual option or a more formal approach. Allergies, intolerances, and other special dietary and religious considerations, such as a guest who is a vegan or coeliac, should also be investigated where possible. Good planning will help to ensure that the needs of all your guests can be met.

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 be served 'pigs in blankets', while children at a birthday party would be unimpressed by pâté and caviar. Elderly people may have difficulty eating 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 portions are also a factor that requires consideration when age is concerned. Children consume a much smaller quantity of food compared to an adult male while younger adults and adolescent girls tend to pick at food rather than heartily devour a large meal. If you have a sporting crowd, they usually eat well.

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 bread, flour, breadcrumbs or pasta. If the event is only offering pizza and pasta, then what would you eat?

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 cultural groups. 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.

Resources

A resource is something which human society attaches value to due to its usefulness. When planning a special occasion, resources that may be useful in the smooth planning of an event may include food ingredients, equipment, skills, budget and time.

Ingredients

When planning a menu, the host must consider the ingredients to be used. Ingredients:

- should be in season to ensure that they are reasonably priced
- should be of high quality, so they 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. Examples include 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, such as 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 their degree of difficulty. 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.

Skills in the area of food safety and hygiene are also particularly vital when planning a menu for a special occasion. Points to remember include:

- Take food out of the fridge just before serving. If people are grazing over a long period, it is best to put out smaller quantities and replenish them once they have run out.
- Provide serving utensils so that people don't have to use their fingers.
- If you are serving hot food, ensure it stays hot while it is being.
- When the party is over, if food has been unrefrigerated for more than 1½ hours, it will have to go in the bin. See 'Your Food Tech toolkit' pages xvi–xvii for food preparation dos and don'ts.

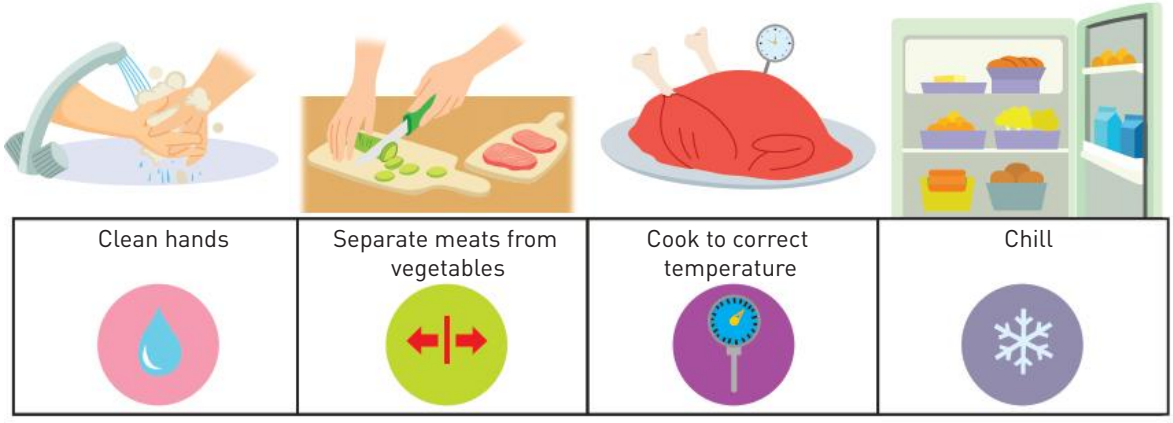


Figure 7.18 Four steps to food safety while preparing a menu for a special occasion

Budget

When planning a menu, the host should have a budget and select ingredients that fit within that budget. For example, if the budget is limited, it would be unacceptable to serve Beluga caviar. 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 must pay more money for employees to stay overtime, and their business will certainly not succeed.



iStock/Getty Images Plus/mr_Prof

Figure 7.19 Beluga caviar – the roe of the beluga sturgeon (now critically endangered) – is the most expensive food item in the world!

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.

Workflow plans

A workflow plan is an ideal way to make sure you make the most of your time. This plan puts you in control of your entire event planning process from start to finish. You can allocate jobs for several weeks beforehand, right up until the time of the event.

During an event, a workflow plan will enable specific tasks to be completed in a set order in the designated time frame. Workflow plans act as a guide to check that all tasks are completed in an efficient and timely manner. A good plan will consider the:

- time frame available for preparation
- variety of foods to be prepared and served
- number of helpers available during the occasion
- equipment and tools available
- number of guests needing to be served
- desired service time for each course
- presentation of the food
- cleaning requirements.

HANDS-ON

WORKFLOW PLANNING

PURPOSE

To devise a workflow plan for use in practical classes.

ACTIVITY

1 Work in pairs to design a two-course meal suitable for a small dinner party.
2 Use the template below to help you develop a workflow plan for the preparation of this menu during a practical lesson in class.

QUESTIONS

1 How did this workflow plan help you during this lesson?
2 Identify the ways the plan may be improved for the future.
3 Explain how this plan may change if only one person was preparing the meal.

WS Workflow plan

Step	Task	Time	Equipment/utensils	Task allocation
1				
2				

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 10 people is very different from organising an event for hundreds of guests. Planning 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, however, a rough guess or estimate is not suitable. Every caterer follows a set of guidelines similar to those shown in Table 7.3. A host must consider the factors listed when planning a menu.

Table 7.4 Caterer's quantity guide

Type of event	Approximate number of 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 g) a small handful of chips (40–50 g) 10 mL serving of dipping sauce	Finger food such as hors d'oeuvres, canapés, nuts, chips, cocktail frankfurts, champagne and mineral water
Lunch or dinner party	150 g 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 tea	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

HANDS-ON



CLASS BUFFET

PURPOSE

To prepare food items for a special occasion.

ACTIVITY

As a class, organise a lunch buffet to celebrate an upcoming special occasion (someone's birthday, graduation, or the next public holiday).

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. Decide on a guest list and send out invitations.
3. Establish suitable quantities for each recipe selected. Try not to prepare too much food. Your teacher will be able to guide you.
4. Construct a food order and include the date on which the event will be held.
5. 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.
6. Organise the layout of food and the decorations needed for the day. Each person can bring something to make the event special.
7. Design and produce the menu.

QUESTIONS

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? How was it stored?
4. Should you have had more of any foods?
5. Were all the recipes successful?
6. How could you improve the buffet if you were to do it again?

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The Gourmet Chef



THE GOURMET CHEF

Owned and operated by chefs Shane Rudd and David Heaysman, The Gourmet Chef is a catering operation specialising in remote location catering. It operates in the regions of Mildura, Broken Hill, Swan Hill, Riverland and Barossa Valley in New South Wales, South Australia and Victoria and organises large- and small-scale events.

The Gourmet Chef applies a contemporary approach to catering requirements and has gained recognition as an innovative event and corporate caterer. The company is passionate about serving fresh, innovative and contemporary food in any location. The head chefs understand the Australian environment and place special emphasis on quality local produce where appropriate.

Shane and David believe that the menu of an event needs to be creative and reflect the personality and requirements of the host. The foods served should be designed to enhance the ambiance of the event. The company has menus for all kinds of occasions and budgets and can customise dishes to suit. The innovative menus include the traditional set menus, buffet or the new style finger food menus that are becoming more popular for casual relaxed dining with a touch of class. All venues, even remote places such as film shoots and mining sites, can be adapted to suit – the company is fully self-sufficient with mobile kitchens that allow for catering to up to 1000 people.

Shane and David believe that planning for an event is the critical ingredient in any successful special occasion. They work to share the host's vision for the event and to be creative so that the final occasion is both memorable and enjoyable.

Source: Adapted from http://www.thegourmetchef.com.au/



The Gourmet Chef

PRACTITIONER FOCUS

QUESTIONS

1 Outline the specialty of this catering company.
2 Define the passion driving the success of this company.
3 Assess why it is important for the chefs to understand the Australian environment.
4 Describe the styles of menus available for functions through this operator.
5 List the types of venues in which this company operates.
6 What do Shane and David believe to be the most vital ingredient for any successful special occasion?



UNIT REVIEW

LOOKING BACK

1 Define the term 'menu' and explain its importance in planning for a special event.
2 Why is menu planning considered to be both an art and a science?
3 Discuss how menus for special occasions can be used to promote good nutritional choices.
4 Make a list of 10 foods you could provide at a function that promote good nutrition.
5 Why is it important for the food to match the ambiance of any occasion? Use examples to support your answers.
6 Assess how an event theme may impact on the menu design.
7 Why is it important to consider the age, health and culture of those attending your function?
8 Outline the resources that may be useful in the smooth planning of an event.
9 How does the size of the event affect the menu planning?
10 What type of food would not be appropriate to serve at a function for 250 people? Why?

FOR YOU TO DO

11 Read through the following situations, then select one event from the list and prepare one part of your menu in class with a partner.

a *Australia Day celebration:* This is to be an informal celebration held in a local recreation area, such as a park overlooking Sydney Harbour. Eighteen guests of all ages will be attending.
- Design a suitable invitation.
- Plan an appropriate menu.
- 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.
- Design a suitable room and table decorations. (Draw these.)
- Plan an appropriate menu.
- Justify your menu choices.

c *Christmas lunch:* This is to be an informal celebration for 30 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.
- Describe the location.
- Plan an appropriate menu.
- Identify menu items that may use a convenience food and give details.
- Justify your menu choices for those guests 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.
- Describe the location and type of celebration.
- Design and display an appropriate menu.
- 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.
- Describe the location.
- Plan an appropriate menu.
- Justify your menu choices.
- List problems that may occur when serving food in this situation.

TAKING IT FURTHER

12 Design your own guidelines for selecting and preparing food for special occasions.
13 Find two recipes that may be suitable to use at an awards dinner for 250 people during NAIDOC celebration. Display these for the class to see and justify why they are suitable.
14 Design and make a cake for a designated special occasion (e.g. a child's birthday cake).

Food presentation and service for special occasions

Food presentation and service will vary, depending on the event. Formal dining at a restaurant will be different from at a buffet or a catered wedding reception, which will be different from a picnic or a beach barbecue. Today's partygoer expects more than the traditional banquet food of years past, and hosts want to create a unique experience for their guests that is reflected in everything from the invitation, decor and flowers, to the food they serve. Attendees want amazing Instagram-worthy food displays AND exquisite tastes AND great service. If you want people to notice your food and to count it as part of a memorable experience, you need to give them a WOW! moment and those come not only from their tastebuds but from their eyes as well.

Food presentation

It is said that 'we eat with our eyes first', so creating a lasting first impression is the key to getting guests not only to try the food, but to love it, share it and talk about it. Food presentation is the art of modifying, processing, arranging or decorating food to enhance its aesthetic appeal. No matter how food is presented and served – a silver service plated meal or a help yourself buffet – it needs to make your guests want to eat it. A meal needs to be visually appealing, aromatic and appetising.

With Twitter, Snapchat, food blogs, and Aunt Noelene sharing last night's entree on Facebook, food presentation really does matter. That's not to say it was not important before, but now the look of food travels at the speed of Instagram. Creative food presentation ideas are those in which there is a balance of colours, textures and shapes. When presenting foods for a special occasion, you should follow these rules:

- Keep it simple – don't make it more complicated than it needs to be – less is more.
- Experiment and have fun with your food. Don't take food too seriously – instead, think of the dish or bowl as a canvas where you can be as creative as you want.
- Use social media to keep up with new trends and innovations.
- Pay attention to detail.
- Dress up the table – make it add to the visual appeal of the occasion.
- Be odd. Don't be strange, but things generally look more interesting when they are in sets of odd numbers, rather than even numbers.
- Choose interesting plates and serving vessels, and don't overfill them. Make sure there are no messy spills or drips. Maybe try some edible vessels!
- Think vertically – adding height can make a plate or table look more interesting. By layering or stacking ingredients, you can give the display more depth.
- Get your guests interacting with the food – a self-service bar or a grazing table is ideal for this.
- Serve hot foods hot and cold foods cold.

Garnishing and decorating techniques

A garnish is an item used to embellish a food or beverage, making it more visually appealing and appetising. It is usually made of a simple edible ingredients such as chopped vegetables or herbs that complement or add interest to the dish. A decoration is generally used on a dessert or cocktail. Examples include edible flowers, chocolate curls and citrus knots. The garnish or decoration should provide a finishing touch to your dish and be quick and easy to apply.

Examples of easy garnishes and decorations are shown in Table 7.5.

Table 7.5 Garnishes

			
Finely chopped herbs sprinkled over or around a plate add interest and appeal to a dish.	Use citrus fruits such as oranges or lemons to cut out strips, wedges and twists. These can be used for drinks, fish items or desserts.	Carrots sliced with a peeler into long strips can be left in freezing cold water for an hour or two to curl. They can also be grated, sliced round or shredded. A carrot rose can be used to decorate a salad platter. This technique can also be used with other ingredients, such as tomatoes.	Crispy croutons are great for soups, or one larger cheesy crouton also works well. Alternatively, drizzle some olive oil or cream into soups in a pretty shape. Shredded cooked crispy bacon bits are also fun to sprinkle over salads if guests have no cultural aversion to pork products.
			
Fanning fruits, such as strawberries or avocados, can add a little beauty to any dish.	Chocolate can be curled, grated, melted or made into shards to add height, texture and interest to a dessert.	Make use of different coloured syrups, sauces and chutneys to add a hint of colour to dull or bland-looking food.	Edible flowers are brightly coloured and fresh tasting, and can add a new dimension to sweet or savoury dishes.

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Bottom row (L–R): iStock/Getty Images Plus/ozgurdonmaz; Shutterstock.com/Viktor1; iStock/Getty Images Plus/subjug; Shutterstock.com/DronG

HANDS-ON

FOOD PRESENTATION

PURPOSE

Investigate the importance of food presentation.

ACTIVITY

Work as a class to create a series of flip cards that will help to enhance your food products using a variety of edible garnishes.

1 Gather a selection of edible fruits, vegetables and flowers suitable to use as garnishes.
2 Use the internet to research the types of garnishes you could make with what you must use.
3 Design and make each garnish.
4 Take a series of photos to show the steps you took to achieve your final product.
5 Present these photos as a photo story with step-by-step instructions.
6 Compile the ideas into a class garnishing flip book.

QUESTIONS

1 Investigate and describe current trends in food presentation.
2 Discuss your favorite style of food presentation.

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Hyde Street Cakes



SOPHIE HYDE: HYDE STREET CAKES

Sophie owes her success as the owner, creator, baker and decorator of Hyde Street Cakes to her creativity, persistence and courage to pursue her passion. While still at school she built a small business in her suburban home, making celebration cakes for family and friends. Sophie has no formal culinary or art training and is mostly self-taught from trial and error, numerous books, and YouTube videos.

Gaining some basics in food technology at school, Sophie quickly realised that she had a unique ability to design and create cakes. She became motivated to perfect her piping skills and to master techniques like icing three-tiered cakes or making chocolate shards. Any occasion was an excuse to bake somebody a cake just so she could practise and refine her skills. Eventually, people started asking her to make cakes for special occasions – and were happy to pay!

Sophie gains her inspiration from other cake artists (such as Katherine Sabbath and Cakes by Cliff) she follows on social media. She herself on tailoring each design to reflect her customers' individual needs, personality and event theme. Sophie believes cakes are front and centre at all of life's happiest occasions. Cakes should be the 'hit of the party' to be displayed, adored and then devoured! They must be equally as delicious as they are beautiful.

'The best part about what I do is seeing people's reactions when they first receive their cake. There are no limits to cake artistry and I love thinking outside the box. Just when I believe I've seen it all, someone comes up with something even more exciting and innovative.'

ACTIVITIES

1 What types of cakes does Sophie make?
2 How did Sophie begin her business?
3 Where did Sophie learn her trade?
4 How has she improved her skills?
5 What does Sophie love about making celebration cakes?
6 Discuss the skills you think are important to have when starting up a new business.
7 Imagine you were helping Sophie develop a new type of cake. Describe what your masterpiece would look like.



Food service

The food service style is an important part of how your event will flow, so it is essential that you pick the right service style for your special occasion. The type of service will vary, depending on the event. Formal dining in a restaurant requires a different service style from a buffet or a picnic. The following are popular service options for special occasions.

Plated sit-down service

This is a traditional, elegant, formal style of service where each individual course is served to guests seated at a table. Each meal is delivered separately by a waiter, and often a choice is provided between two alternatives. Sometimes, in a less formal setting, the main part of the meal is already on the plate and extras such as vegetables are served on platters and shared around the table. Plated service is commonly used for weddings, staff Christmas parties, large gala dinners and school formals.

Silver service is a variation of plated service that is used in fine-dining establishments. In this instance, the empty plate is placed on the table and a waiter transfers food from a serving dish to each guest's plate using a silver fork and spoon, always from the diner's left. Gueridon service (also known as 'trolley service') takes this style of service to another level as food is prepared or cooked at the table and served using full silver service techniques.

Buffet service

A buffet is a less formal style of service where guests are usually seated but need to plate their own meal from a central display. A traditional buffet is set up so that guests can file past large serving platters or bain-maries of hot and cold food, helping themselves to each dish. In some venues a chef or waiter may be stationed along the buffet to serve the guests as they move past. This style of service is popular for working lunches, conferences, corporate hospitality events and casual barbecues.

The table buffet is becoming a popular way of serving guests at weddings, intimate corporate events or staff parties. For this style of service, the meal is served on large platters in the middle of the table and guests help themselves. It is also known as 'family service'.

Station-style service

Food stations are also growing in popularity as a service style for functions. They are usually used in conjunction with a cocktail service and are ideal for long cocktail events such as weddings and Christmas parties. Food stations are set up like a buffet where guests make their way to where the food is laid out and help themselves. There may be a taco station, a dumpling station, and even a dessert or lolly bar. The food is usually bite-sized, allowing the guests to pick it up with their fingers and move away. This style of service allows for a more creative presentation of a menu and gives the guests an opportunity to interact with the food.

Cocktail-style service

This is a stand-up type of service where guests can be more social and mingle while food and drinks are served to them by wait staff moving around the venue. The food served is usually bite-sized and comes in various combinations of hot and cold menu items. This service is most commonly used in circumstances where people need to circulate among themselves, such as at networking events, product launches, Christmas parties and weddings.

Outdoor picnic

In Australia, picnics are a popular way to celebrate a special occasion with family and friends. Gourmet picnic services are a growing trend around the globe!



Row 1: Shutterstock.com/Monkey Business Images; Shutterstock.com/Rawpixel.com.
Row 2: iStock/Getty Images Plus/ruslanshramko; iStock/Getty Images Plus/MNStudio.
Row 3: Alamy Stock Photo/Ian Shaw

Figure 7.20 The style of food service is an important consideration for any special occasion

UNIT REVIEW

LOOKING BACK

1 Why are food presentation and service important elements of a special occasion?
2 Describe, using examples, five tips or guidelines that should be followed when presenting foods.
3 Define the term 'garnish'.
4 Evaluate the different types of service used for different special events.

FOR YOU TO DO

5 Find a range of images that you consider present food well. Explain what elements of each image you particularly like.
6 Find a range of images that present foods poorly. Justify your opinions.
7 Prepare and present a two-course meal suitable for a special celebration.
8 Evaluate the service style used at a special event you have attended.

TAKING IT FURTHER

9 Investigate the role of a food stylist in the presentation of foods for special events.
10 Research how lighting, sounds and smells can influence the environment of a special event.

CAREER PROFILE:
EVENTS MANAGEMENT



Imagine being part of a team that organises events for 300, 3 000 or even 30 000 people ... or creating something that doesn't yet exist ... or turning your hobby into a successful career.

It takes all types of people, with all kinds of skills, to create an event.

There's the event planner or organiser who oversees the overall planning and delivery of the event, the marketers who promote the event, the experiential creatives, the tech and AV specialists who produce the show, the tradespeople who build the physical spaces, the safety and security crew who keep us safe onsite, and there are teams who work behind the scenes in accounting and finance, HR and administration. [Not to mention the food service and catering staff who oversee the menus, food styling, presentation and, of course service of food and beverages for an event.]

There are many pathways to help make that first step easy.

Formal qualifications through university in any discipline will open the doors to a world of opportunity in the sector. Some of the professions in demand include:

- marketing and communications
- accounting and finance
- business
- IT and engineering.

There are specialised TAFE courses in event management that will give you a broad introduction to career opportunities and entry level qualifications into the sector. Other courses also provide relevant skills for the sector. Some of the careers available through TAFE education include:

- event operations and planning
- graphic design and creative production
- IT – event technology, programming, business and information systems, data analyst
- administration.

Traineeships and trade apprenticeships provide hands-on training and skills development in a range of career opportunities relevant to exhibitions and events. They include:

- event staging and AV – lighting technicians
- hospitality – restaurant managers, chefs
- trades – carpentry, electricians, construction
- transport and logistics.

Volunteer programs will get you a foot in the door and the opportunity to gain on-the-job skills in any area that interests you.

Source: Exhibition & Event Association of Australasia

QUESTIONS

1 What is the role of an event planner?
2 Explain why presentation is such an important aspect of an event – both of the venue and of the food and beverages served.
3 What other types of jobs are involved in organising a special event?
4 Discuss three pathways you could take to enter this industry.
5 How do traineeships and apprenticeships differ from university degrees?
6 How can you be a part of this industry now?

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Chapter review

LOOKING BACK

1 Without food, there would be no history – explain what this means.
2 How was what we eat today influenced by the early explorers? Give examples to support your answer.
3 **a** List some examples of Indigenous cultures found around the world.
b Why is it important to preserve the traditions and customs of these unique cultures?
4 Discuss why food is important in French culture.
5 Give examples of fermented foods that feature in the Korean diet.
6 Examine the fundamental features of Vietnamese food.
7 Give an example of a social reason for celebrating with food.
8 Summarise three religious celebrations that are associated with special foods.
9 Identify two historical events that we celebrate with food.
10 Outline three things that need to be considered when planning a menu for a special event.
11 Describe how a birthday party for a 5-year-old boy might differ from one planned for his 70-year-old grandmother.
12 Outline five basic food hygiene and safety rules when preparing food for special occasions.
13 Refer to the caterers' quantity guide in this chapter and list the number of food items per person that should be served at a morning or afternoon tea.
14 Evaluate the importance of food presentation and service for a special occasion.

FOR YOU TO DO

15 Create a recipe card for your favourite special occasion food. Prepare and make this dish in a class practical and compare it to others in your class. What are the similarities and differences between the dishes?
16 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.
17 Plan a 16th-birthday party celebration. Choose a location, design a suitable menu and justify your choices.
18 Develop a resource to help young mums understand why nutritional value is important when planning meals for special occasions.
19 Generate a range of strategies for teaching new employees about the benefits of using a workflow plan. Explain why it is helpful and how it saves time.
20 Design a comic strip to be published in your school newsletter reminding the community about food safety and handling rules for special occasions.
21 Experiment further with a range of food decorations and garnishes.

TAKING IT FURTHER

22 Investigate how pho differs throughout Vietnam. Account for these differences.
23 Research three significant food festivals that occur around the world. Why are these days celebrated and what are the foods associated with each?
24 Explore the different ways Christmas is celebrated around the world.
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.
26 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 menu for a special occasion such as Christmas or Mother's Day. Then design a menu for one of these occasions and justify your choices for each food.

Recipe	Techniques	Equipment	Dietary considerations
Basic butter cake 	Creaming	Measuring equipment Cake tin Electric beater or wooden spoon Bowl	V
Brazilian chocolate caramels (brigadeiros) 	Greasing and lining tin	Measuring equipment Saucepan Spoon Tray	V
Chicken and corn party pies 		Measuring equipment Knife Board Baking tray Bowl Spoon Round pastry cutter (or glass)	
Chinese New Year noodles 	Stir-frying	Measuring equipment Board Knife Wok Spoon	V
French onion soup 	Grilling	Measuring equipment Board Knife Saucepan Ladle	VO
Marinated steak with soft tacos 	Marinating	Measuring equipment Board Knife Bowl Spoon Non-stick frypan Egg lift	
Matzo ball soup 	Boiling simmering	Measuring equipment Board Knife Bowl Saucepan Spoon Ladle	
Vienna cream icing 	Piping	Measuring equipment Bowl Electric beater or wooden spoon	V GF

KEY

V = vegetarian VO = vegetarian option GF = gluten free VgO = vegan option

Note: All recipes are nut free.

Note: In the Chinese New Year noodles recipe we use spring onions. To clarify, the recipe uses the thin, white onion with the long, green leaves. You may know these as shallots.

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RECIPE


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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.

Preparation time 20 minutes **Cooking time** 40–50 minutes **Makes** 1 cake

INGREDIENTS

125 g butter
½ cup caster sugar
½ teaspoon vanilla essence
2 eggs
1½ cups self-raising flour
⅓ cup milk

TIP: Allow the cake to cool completely before turning it out of the tin, to prevent it from sticking.

METHOD

1. Preheat oven to 180 °C. Grease and line a 20-centimetre cake tin with baking paper.
2. Beat the butter and sugar using an electric beater or wooden spoon until light and creamy. Add the vanilla essence and beat until fluffy.
3. Add the 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.

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. Describe how you can tell if the cake is cooked.
4. Find another type of icing that may be suitable for this cake-decorating activity.

RECIPE

Brazilian chocolate caramels (brigadeiros)

Brigadeiros are a rich, chewy caramel treat traditionally enjoyed in Brazil. They are a significant part of Brazilian culture and are considered a national icon. These sweet treats are served during many celebrations, including birthday parties, family gatherings and reunions.

Preparation time 20 minutes **Cooking time** 10 minutes **Makes** 10–12

INGREDIENTS

- 3 tablespoons sweetened cocoa powder
- 1 tablespoon salted butter
- 395 g tin sweetened condensed milk
- Sprinkles or nuts to coat

TIP: This mixture is best rolled cold.

METHOD

1. Place the cocoa powder, butter and condensed milk in a saucepan over medium heat and cook, stirring constantly, for 10 minutes or until mixture starts to come away from sides of the pan.
2. Remove from heat and allow to cool. When cool enough to handle, using your hands, shape mixture into walnut-sized balls.
3. Roll in chocolate sprinkles (or coating of your choice), then place in patty cases.
4. Eat immediately or refrigerate until ready to serve. You can store the balls in an airtight container in the fridge for up to 1 week.

QUESTIONS

1. Why do you think this simple dessert is a national icon?
2. Discuss the importance of stirring constantly.
3. Outline some special treats you associate with particular celebrations.



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RECIPE



Mark Fergus

Chicken and corn party pies

Try a healthier alternative to traditional party pies.

Preparation time 15 minutes **Cooking time** 20 minutes **Makes** 8

INGREDIENTS

½ cup chopped cooked chicken
1 × 125 g can creamed corn
1 green onion, thinly sliced
¼ cup grated reduced-fat tasty cheese
16 slices wholemeal bread
Olive oil cooking spray

TIP: You can make fresh breadcrumbs using the bread off-cuts. Process bread in food processer or blender and place in a snaplock bag. Freeze for later use.

METHOD

1. Preheat oven to 200 °C.
2. Lightly grease or line a large baking tray.
3. Place chicken, corn, onion and cheese in a bowl. Season with pepper. Stir to combine.
4. Using a 9 cm round cutter, cut 1 round from the centre of each bread slice.
5. Spoon 1 heaped tablespoon of chicken mixture in the centre of 1 round. Top with another round. Using your fingertips, pinch edges together to seal.
6. Place on baking tray. Repeat with remaining chicken mixture and bread rounds. Spray with oil. Season with pepper.
7. Bake for 20 minutes or until golden and crisp. Serve.

QUESTIONS

1. Suggest ways you can use your leftover bread crusts to save on food waste.
2. Why is wholemeal bread a good choice for this recipe?
3. How is this a healthier alternative to traditional party pies?
4. Why is it important to preheat an oven?

RECIPE

Chinese New Year noodles

Partake in the joy of Chinese New Year with a feast of auspicious foods known to bring good luck. Shiitake mushrooms are associated with the realisation of wishes, while noodles represent longevity; the longer the noodle, the longer your life.

Preparation time 25 minutes **Cooking time** 15 minutes **Serves** 2

INGREDIENTS

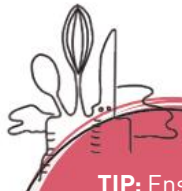
150 g ramen noodles
1 teaspoon peanut oil
75 g shiitake mushrooms, trimmed and sliced
75 g oyster mushrooms, halved if large
2 spring onions, trimmed, cut into 4 cm lengths
½ bunch broccolini, trimmed, stems halved lengthways
75 g sugar snap peas, trimmed
50 g frozen podded edamame
100 g red cabbage, thinly shredded
2 tablespoons kecap manis
1 garlic clove, crushed
2 cm piece ginger, peeled, finely grated
1 tablespoon rice wine vinegar
½ tablespoon soy sauce
Sliced long fresh red chili, to serve

METHOD

1. Cook the noodles in a saucepan of boiling water for 3 minutes. Drain and set aside.
2. Heat oil in a wok over medium-high heat.
3. Add the mushrooms and spring onions and stir-fry for 3 minutes.
4. Add the broccolini, sugar snap peas and edamame, and stir-fry for 2 minutes.
5. Add the cabbage and stir-fry for 2 minutes, adding a tablespoon of water.
6. Combine the kecap manis, garlic, ginger, vinegar and soy sauce. Add to wok with the noodles and stir-fry for 2 minutes or until combined and heated through.
7. Divide the noodles among serving bowls. Top with chili.

QUESTIONS

1. Identify the ingredients that are associated with good luck.
2. Describe the difference between the shiitake mushroom and the oyster mushroom.
3. Why should the wok be hot before adding any ingredients?
4. Describe the technique of stir-frying.



TIP: Ensure the wok is hot before stir-frying, so that vegetables such as mushrooms don't stew and release their juices.



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RECIPE



French onion soup

In France, and cities around the world, on 14 July each year people celebrate the storming of the Bastille during the French Revolution. It was around this time – the 18th century – that a soup known today as French onion soup became widely popular in France. It was a flavoursome dish that was affordable for all.

Preparation time 15 minutes **Cooking time** 20 minutes **Serves** 2

INGREDIENTS

20 g unsalted butter
½ teaspoon olive oil
2 large onions (about 500 g), sliced
2 teaspoons brown sugar
1 tablespoon brandy (optional)
1½ cups chicken stock
1 tablespoon balsamic vinegar
1 bay leaf
1 thyme sprig
2 thick slices sourdough bread
1 garlic clove, halved
½ cup grated gruyere cheese

METHOD

1. Melt the butter with the oil in a large saucepan over medium-low heat.
2. Add the onion, sugar and 1 teaspoon salt and cook, stirring occasionally, for 20 minutes or until golden and caramelised.
3. Add the brandy, then increase heat to medium-high and cook for 1–2 minutes until liquid is almost evaporated.
4. Add the chicken stock, balsamic and herbs, bring to a simmer, then reduce heat to low.
5. Cook for 10–15 minutes, stirring occasionally, until thickened.
6. Meanwhile, preheat the grill to high.
7. Grill bread on both sides until golden. Rub one side of each slice with garlic, top with cheese, then grill for a further 1–2 minutes until the cheese has melted.
8. Divide toasts among 2 soup bowls, then ladle over the soup and serve.

QUESTIONS

1. What is gruyere cheese and why is it used in this recipe?
2. Why is it important to preheat the grill?
3. Identify other soups associated with cultures around the world.

Marinated steak with soft tacos

RECIPE

Dating back to pre-Hispanic times, one Mexican tradition known as *Día de los Muertos* (Day of the Dead) is a colourful celebration of death and the continuation of life. On this day, families make an altar and decorate it with paper, candles, flowers and food offerings, such as the traditional pan de muerto, sugar skulls and the favourite dishes of their deceased loved ones. Tacos are often featured on this day.

Preparation time 20 minutes **Cooking time** 20 minutes **Serves** 4

INGREDIENTS

Marinade

1 tablespoon fresh oregano leaves (or 1 teaspoon dried)
1 garlic clove, crushed
½ teaspoon ground cumin
1 tablespoon taco seasoning mix
1 tablespoon olive oil
½ lemon, juiced
400 g beef rump steak, trimmed and sliced

Tortillas

2 cups plain flour, plus extra for dusting
Pinch salt
¾ cup warm water
2 tablespoons olive oil

Salad

½ red onion, cut into thin wedges
½ red capsicum, cut into thin strips
½ avocado
1 red chili (optional)
1 tomato
Mixed lettuce

To serve

¼ cup sour cream

QUESTIONS

1 Define the term 'marinate'.
2 What is the main role of marination in cooking?
3 Identify the acid used to help tenderise the meat in this recipe.
4 Why is it important to rest the meat before serving?
5 Challenge: try mass producing this recipe for your whole class. Work as a team and scale the recipe portions up to make sure there is enough for everyone. Set up workstations and teams to ensure the results are of a high quality.

METHOD

1 Place chopped oregano, garlic, cumin, oil, taco seasoning and 1 tablespoon of lemon juice in a small bowl. Stir to combine.
2 Add thinly sliced beef steak to **marinate**. Turn to coat. Cover and refrigerate for 30 minutes, if time permits.
3 Meanwhile, prepare and cook tortillas. See method below.
4 Prepare salad ingredients. You may pan-fry the onion and capsicum if desired.
5 Heat a non-stick frypan over medium-high heat. Cook steak for 2–3 minutes for medium or until cooked to your liking. Remove to a plate. Cover and rest for 5 minutes.
6 Assemble as desired. Be creative!

Tortillas

1 In a large bowl, combine flour and salt. Stir in water and oil to form a dough.
2 Turn onto a floured surface; knead 10–12 times, adding a little flour or water if needed. Rest for 10 minutes.
3 Divide dough into eight portions. On a lightly floured surface, roll each portion into equal portioned circles.
4 In a large non-stick frypan, cook tortilla over medium heat for 1 minute on each side or until lightly browned.
5 Keep warm.

TIP: Do not overcook the meat, as it will be tough.



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RECIPE

Matzo ball soup

This dish is traditionally served during Seder, the Jewish ceremonial dinner held on the first night of Passover. The ceremony is about remembering Jewish history, and much of the food served is deeply symbolic. Matzo represents the unleavened bread the Jews ate while fleeing Egypt, for example, and horseradish is a symbol for the bitterness of slavery.

Preparation time 20 minutes **Cooking time** 10 minutes **Serves** 2

INGREDIENTS

Matzo balls

2 eggs, lightly beaten

½ cup coarse matzo meal

2 tablespoons sparkling water

30 mL schmalz or chicken fat, melted

¼ tsp kosher salt

Pepper to season

Broth

1 litre homemade or good-quality chicken stock

1 parsnip, peeled, finely chopped

1 carrot, peeled, finely chopped

Dill sprigs or flat-leaf parsley leaves, to serve

TIP: Matzo meal is made by finely grinding matzo crackers into a breadcrumb-like consistency. Schmalz is poultry fat skimmed from stock and is available from selected delis. Substitute rendered chicken fat or vegetable oil.

METHOD

Matzo balls

1. Place eggs, matzo meal, water, schmalz, and salt and pepper in a bowl. Combine to form a dough. Cover with plastic wrap and refrigerate if possible. (Overnight is best.)
2. Roll the matzo mixture into 6 golf ball-size balls.
3. Bring a large saucepan of water to the boil. Gently drop balls into the pan of boiling water.
4. Reduce heat to medium-high and cook for 25 minutes or until the matzo balls have almost doubled in size and are cooked through.
5. Drain, then transfer matzo balls to a plate and cover with foil to keep warm.

Broth

1. Place stock, parsnips and carrots in a large saucepan and bring to the boil.
2. Reduce the heat to medium and simmer for 15 minutes or until vegetables are tender.
3. Ladle the broth into warmed bowls, add 3 matzo balls to each bowl and scatter over dill sprigs to serve.

QUESTIONS

1. Identify the religious significance of this meal.
2. What is matzo?
3. What is schmalz?
4. Outline the other dishes traditionally served during Jewish Seder.
5. Discuss the difference between boiling and simmering.



Mark Fergus

RECIPE

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 g butter, at room temperature
1½ cups sifted icing sugar
2 tablespoons milk
Food colouring (optional)

TIP 1: You can achieve a variety of effects with your final icing by using icing tips to pipe on the icing.

TIP 2: For a smooth finish, dip palette knife in boiling water and wipe dry. Run hot knife over icing in long strokes.

METHOD

1. Beat the butter with an electric mixer or wooden spoon 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. Why is it important to add the milk gradually to this recipe?
2. Why should your cakes be cold before applying the icing?
3. Describe your favourite tip or trick for icing the perfect cake.



Mark Fergus



CHAPTER 8

FOCUS AREA:

Food trends

Food patterns constantly evolve. Australians eat different types of foods now than they did in the past. When and where we eat, and how food is presented, has also changed and will continue to do so. In this chapter you will investigate current food trends and the influences behind them. You will also have the opportunity to prepare and present foods that reflect current trends.



CHAPTER CONTENT

In this chapter you will:

discuss
- current trends around food
- issues of food sustainability

investigate
- new technologies being used in the food industry
- trends related to the presentation and styling of food

assess how the media promotes food styling and photography

design, plan, prepare and present food that appeals to today's consumers and reflects food trends – you will specifically style food to be photographed

demonstrate
- knowledge of the correct equipment and techniques to use in food preparation
- how to prepare food safely and hygienically.

Pre-test quiz

RECIPES
- Sweet potato and spinach salad
- Mango chia pudding
- Café-style mini banana bread
- Hawaiian salmon poke bowl
- Lentil bolognese
- Seared scallops with pea puree and prosciutto crisps
- Wattleseed ice-cream
- Retro sweet mushroom tarts

FOOD FACTS

One reason why chefs began garnishing plates with herbs such as parsley and mint is because the herbs freshen breath and aid digestion. The herb garnish was something you nibbled after you finished eating.

Margaret Fulton was one of Australia's first celebrity chefs. Her cooking segments on television and her 1968 cookbook introduced Anglo-Australians to non-British recipes such as spaghetti bolognese.

There are around 5000 native food species available in Australia.

Kangaroo meat is sustainably sourced. Only around 3 per cent of the total harvestable kangaroo population is used for meat production.

In 2016, France became the first country in the world to implement laws cracking down on food waste. Supermarkets are required to donate any unsold food to charities or for animal feed.

Food and beverage production is Australia's largest manufacturing industry.

Purple carrots used to be more popular than orange carrots. These heirloom carrots have made a recent comeback.

An increasing number of cafés and restaurants grow their own herbs and vegetables in order to source fresh produce.

The macadamia nut is a native Australian food. In 1882, William Herbert Purvis gathered macadamia nuts from the Mount Bauple region in Queensland and took them to Hawaii's Big Island. There, he turned them into seedlings that later made Hawaii famous for its macadamia production.

Les Hiddins, a retired Australian soldier, conducted research to identify foods that could sustain soldiers stationed in the northern Australian outback. In the 1980s this research resulted in the television series *The Bush Tucker Man*, which introduced Australians to native ingredients.

The egg carton was invented in 1911 by Canadian newspaper editor Joseph Coyle who used recycled paper as the material. His design has stood the test of time and has changed little since its invention.

Judges on cooking shows usually eat the food cold. This is because the professional food stylists need time to make the food look good for the camera.

FOOD WORDS

biodiversity diversity among and within plant and animal species in an environment

ethical avoiding activities or organisations that do harm to people, animals or the environment

food miles unit of measurement of the fuel used to transport food

food trend a widespread change in food preferences

food waste edible food that is discarded or lost uneaten

halal permissible or lawful in traditional Islamic law; relating to meat from animals that have been slaughtered in accordance with Islamic law

local produce food that is sold and consumed within 160 kilometres from the place it was grown.

mindful eating paying attention to what, why, how and when you are eating

natural resources materials or substances occurring in nature that can be exploited for economic gain (includes water, land and energy)

taboo social or religious custom prohibiting or restricting a particular practice

tradition the transmission of customs or beliefs from generation to generation

value-added products raw agricultural products that have been modified or enhanced so that they have a higher market value (consumer appeal) and/or a longer shelf life

Current trends in food

A food trend is born when there is a widespread change in food preferences.

At the start of a year, news stories commonly predict the top food trends or 'in foods' for the upcoming year. Some food trends are short-lived fads, such as rainbow cakes, doughnut walls and turmeric lattes. Food trends that prove to be more long-lasting gain momentum over time until they become a part of our lifestyle. Extra virgin olive oil, for example, was a 1970s new food trend, promoted by celebrity chefs for its flavour, but over time it has become a pantry staple.

Trends are not just individual foods; they can be types of cuisines, methods of cookery, food philosophies or patterns of eating. Trends can be influenced by a range of factors, such as technology, pop culture and the economy. The environment and health issues are major influences on current food trends.



Alamy Stock Photo/Hilke Maunder

Figure 8.1 Restaurant gardens are a developing trend as chefs can easily access fresh ingredients, such as herbs, with zero food miles.

Local produce and food miles

'Local produce' generally refers to food that is sold and consumed within 160 kilometres (100 miles) from the place it was grown. The trend towards local produce is due to an increased awareness of the environmental impact of transporting food over long distances, known as food miles. The belief is that if you buy and consume food close to where it is grown, it will be fresher, tastier and more environmentally friendly, as it gets from the paddock to the plate faster. This reduces waste and requires fewer fossil fuels for packaging, temperature control and transportation. Food produced in other countries may also have lower environmental and employment standards compared to Australia. While there is a push to reduce food miles, it must also be remembered that the export of Australian fresh produce, such as meats, fish and milk, significantly contributes to the Australian economy.

To reduce food miles, it is best to buy local produce that is in season. It is also important to read labels. Country-of-origin labelling is compulsory for all fresh and packaged foods sold by retailers in Australia and indicates if the food was grown, produced, made or packed in Australia or another country. A food can only claim it is 'Grown in Australia' or 'Produced in Australia' if it contains exclusively Australian ingredients.



Source: Australia Competition & Consumer Commission CC BY 3.0 AU licence

Figure 8.2 Only products that are grown mostly in Australia can carry the kangaroo logo on food labels.

Farmers' markets

Buying local produce helps to support local farmers and producers and allows people to know more about the food they eat. As a result, there has been a dramatic rise in the number of farmers' markets in both urban and rural areas in Australia, at which local small-scale producers sell directly to consumers. Foods sold include fresh primary foods, such as fruit and vegetables, meats, seafood and eggs, as well as products made from local produce, such as jams and gourmet sausages. Much of the produce is in season, organic or free-range, and there are opportunities to purchase heirloom and exotic varieties of foods.

Bush tucker foods

More native ingredients are being incorporated into food dishes and food products such as cooking sauces, salad dressings, dry rubs, chutneys, preserves and teas. Bush tomatoes, Davidson's plums, native thyme, mountain pepper, riberries, quandong, lemon myrtle, finger limes, wattleseed and native honey are becoming familiar ingredients in Australian cuisine. Even the range of native protein sources on menus is expanding, with wallaby, crocodile, emu and green ants growing in popularity along with more established indigenous sources of protein, such as barramundi and kangaroo. For more information on bush tucker, see Chapter 1.

Food waste

Food waste occurs when edible food is discarded or goes uneaten. Food waste is a problem both globally and in Australia. According to food rescue organisations, enough food is produced to feed everyone in the world, yet hunger remains a major world problem. Rescuing food that would otherwise go to waste from those who have an excess and supplying it to those who need it may help to reduce world hunger.

FoodWise

Food waste is also a contributor to greenhouse gases, which cause levels of carbon dioxide in the atmosphere to rise and warm the Earth's surface, with potential harmful effects on ecosystems, biodiversity and human life.

In Australia, about a third of fruit and vegetables grown do not reach the consumer. Often perfectly good produce is discarded on the farm because their appearance does not meet the standards met by food retailers and manufacturers.



Sustainable Table sustainabletable.org.au/Do Something! FoodWise

Figure 8.3 Australian food wastage facts. Summarise how and why we should reduce food waste.

Some strategies being implemented by farmers to reduce such food wastage include selling the produce at farmers' markets, feeding it to livestock or producing compost. Farmers are also turning some excess crops or 'ugly' fruits and vegetables into powders, or into non-food products such as moisturising creams. Research and development into biomaterials is also seeing some food waste turned into building materials or bioga, which can be used to generate electricity.

While significant amounts of food wastage occurs during the production and manufacturing of food, about two-thirds of food waste is generated by the food service industry (e.g. restaurants), food retail outlets (e.g. supermarkets) and in the home. To reduce food wastage, supermarkets are now selling some less-than-perfect-looking fruits and vegetables and donating excess food to food rescue organisations such as Oz Harvest and SecondBite. Consumers are also being educated about the importance of reducing food wastage and are encouraged to buy and store food wisely and to compost.

FOOD IN FOCUS

PURPOSE

To discuss current trends in combating food wastage.

SecondBite

In Australia, we throw away an unbelievable amount of perfectly edible food every day.

At the same time, more than 1 million Australians regularly find themselves unable to afford to feed themselves or their families. The reasons behind this are complicated, but in short: we throw good food away while people go hungry.

In 2005, Ian and Simone Carson decided they should do something to help and so they established SecondBite as a food rescue organisation. With only a few volunteers they collected fresh edible food donations from commercial food outlets and delivered it to local groups who ran food programs for the disadvantaged.

Today, SecondBite operates nationally with warehouses across Australia. Its fleet of trucks and vans collects surplus food from farmers, wholesalers, restaurants, caterers and supermarkets such as Coles. At the warehouse, the food is redistributed to local support groups, all free of charge.

Currently, over 1300 support groups in Australia are receiving food from SecondBite. How the rescued food is used depends on the food programs offered by the support group. Most of the food is prepared into healthy meals or included in food hampers. Some organisations use the food for cooking classes, so that the disadvantaged learn skills in cooking. Others, such as some high schools in Tasmania, prepare food supplied to them from SecondBite and turn them into frozen meals that SecondBite collects and then redistributes to local charities.

In an effort to reduce diet-related diseases, SecondBite only collects fresh, high-quality foods. Ninety-five per cent of the food it collects and redistributes is nutritious and 75 per cent of it is fresh fruit and vegetables.

Source: Adapted from secondbite.org/about/

ACTIVITIES

1. In one sentence, describe what SecondBite does to reduce food wastage.
2. Where does SecondBite collect its food supplies?
3. Give examples of how community groups use food donated by SecondBite.
4. What type of food does SecondBite collect?
5. Discuss the benefits, to both the environment and the individual, of rescuing food.

Mindful eating

Mindful eating is a recent trend that involves listening to your body and paying attention to what, why, how and when you are eating. It involves taking the time to focus on eating so that we eat only when we are physically hungry and stop when we are full. Mindful eating is not a specific diet but, rather, a food philosophy. The belief is that mindful eating can help to avoid overeating from practices such as:

- emotional eating; for example, turning to food when bored, lonely, angry, sad or anxious
- eating while undertaking activities; for example, it is easy to eat more than you planned when watching television
- eating all the food on a plate because we have been encouraged to finish our meals.



Figure 8.4 Some mindful eating techniques

Value-added products

Value-added products are raw agricultural products that have been modified or enhanced so that they have a higher market value (consumer appeal) and/or a longer shelf life.

Some examples of value-added foods include:

- packaged, peeled and sliced vegetables, such as sliced mushrooms, peeled and cut corn cobs, cubed pumpkin and coleslaw mix
- premade meat kebab and kofta skewers, rissoles, meatballs and hamburger patties
- crumbed chicken and rolled chicken roasts
- slow-roasted meats
- prewashed and torn lettuce and superfood mixes
- yoghurts with pureed fruits
- freshly squeezed juices
- fresh pasta and pasta sauces
- fresh-food meal kits.

Consumers are often willing to pay more for a value-added product if it better suits their needs for convenience, nutrition, variety or quality. They need, however, to consider carefully if the time they save is worth the extra expense, as value-added products may be more than double the cost of buying the loose product. Another issue is that many value-added products are packaged in plastic that may end up in landfill. Producers and retailers provide value-added products because they are a good way of using stock and increasing sales.

HANDS-ON

IS THE VALUE WORTH THE PRICE?

PURPOSE

To discuss value-added foods.

ACTIVITIES

Examine the graph.

1 Which fresh vegetable had the most mark-up in price when it was cut and packaged?
2 Which vegetable is the cheapest to buy if you were to buy it loose?
3 Who do you think makes the most money from value-added fresh and vegetables – farmers or food manufacturers?
Justify your response based on the graph.
4 Use a stopwatch to time the preparation required to prep (wash, peel, slice and package) 100 g of two or more of the vegetables listed on the graph.
5 Discuss advantages and disadvantages for buying pre-cut, value-added vegetables.



Figure 8.5 How much extra do you pay for pre-cut vegetables?



Shutterstock.com/designs by Jack

Figure 8.6 Meal kits are a growing value-added food trend among busy professionals, parents and individuals who are looking for the perfect blend of healthy options and convenient cooking methods for their diets.

Dietary trends

People may choose to follow a specific diet for health reasons, because of their personal belief system, because they do not enjoy eating certain foods, or because they are allergic to or intolerant of certain foods. Regardless of the reason for following dietary trends, it is advisable to still follow the Australian Guide to Healthy Eating, which provides a broad selection of foods and appropriate portion sizes needed for good health.

Gluten-free/wheat-free diet

Some people must have a strict gluten-free diet because they have coeliac disease. Sufferers of this disease have an abnormal reaction to gluten, causing inflammation and damage to the villi (finger-like structures) in their bowel. Gluten is a protein found in some grains, including wheat, barley and rye. People who do not have the disease may still have a gluten sensitivity or intolerance and find that having a gluten-free diet reduces digestive issues such as gut pain, bloating and diarrhoea. Many people become aware of their body's reaction to wheat after following the low-FODMAP diet, a short-term elimination diet that omits certain carbohydrate foods to identify which are causing negative effects on the gut. Whether people can have non-coeliac gluten sensitivity or whether their symptoms are caused by something else (e.g. fermenting sugars) is still being debated by the medical profession. On a wheat-free diet, products such as pasta, bread and flour made from wheat are commonly replaced by products made from other grains, such as pasta made from rice or pulses, breads made from rye and oats, and flours made from corn.

Paleo diet

Another recent dietary trend has been the Paleo diet, which is based on foods similar to what may have been eaten during the Paleolithic era, which dates from approximately 2.5 million to 10 000 years ago.

A Paleo diet typically includes lean meats, fish, fruits, vegetables, nuts and seeds – foods that in the past could be obtained by hunting and gathering. A Paleo diet excludes dairy products, legumes and grains. The theory is that these foods have been consumed relatively recently in the timeframe of human evolution (farming emerged about 10 000 years ago, but humans have been around for a lot longer than that) and farmed foods have developed so rapidly our bodies have not had time to adapt to them, making them a contributing factor to the prevalence of obesity, diabetes and heart disease today.

Plant-based diets

A plant-based diet is based on foods derived from plants, including vegetables, wholegrains, legumes, nuts, seeds and fruits, with few or no animal products.

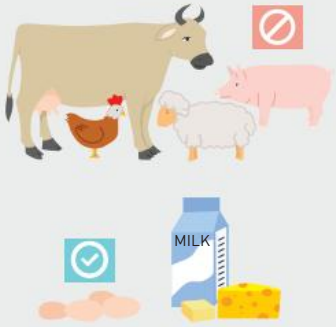
Several religious groups follow a plant-based diet according to their beliefs, as do certain cultural groups, such as those around the Mediterranean Sea, mostly as a result of a long history of limited land and funds to produce and purchase meat. Today, plant-based diets are increasingly being adopted by a wide variety of individuals around the world as people turn towards non-dairy alternatives, such as almond milk, and have meat-free days.

People are choosing a plant-based diet for a variety of reasons, including health, affordability and taste, but increasingly it is because of animal welfare and environmental reasons. Animal food production uses a lot more fertile land, fresh water and energy, and emits far more greenhouse gases, than plant production. Well-planned plant food diets can support healthy living, although vegans do need to ensure they attain enough iron, protein and vitamin B12.

Types of plant-based diets include:

- vegetarian – excludes meat, poultry and seafood, but includes dairy foods and eggs
- vegan – excludes all animal products, including honey, dairy products and eggs
- pescatarian – excludes red meat and poultry, but includes fish and shellfish
- semi-vegetarian (or flexitarian) – occasionally includes meat, poultry and fish.

Table 8.1 Veganism and vegetarianism (both plant-based diets) are significant dietary trends, but what is the difference between them?

Vegetarian	Vegan
Lacto-ovo-vegetarians avoid all animal flesh but do consume dairy and egg products. 	Do not consume or wear any animal or animal-derived products.  
Lacto-vegetarians avoid animal flesh and eggs but do consume dairy products. 	
Ovo-vegetarians avoid all animal products except eggs. 	

FOOD IN FOCUS

FOOD TRENDS

PURPOSE

To discuss a current food trend.

Big gains to be had in value-added vegetables

The health benefits of vegetables have been known for hundreds of years, yet only 6 per cent of Australians are consuming adequate quantities of vegetables daily. This fact motivated Michael Vorrasi, a hydroponic leafy vegetable producer, to apply for a scholarship to travel different countries to explore opportunities for developing innovative value-added vegetable products that would appeal to consumers and boost vegetable consumption.

'In the United Kingdom,' he said, 'I talked to a company ... who have developed a cauliflower rice product with a shelf-life of up to one year ... The success of the product has seen [the company] look to further grow their offering through an improved taste profile, flavour mixes and recipes'.

Mr Vorrasi also explored consumer desire for ethical and sustainably produced foods. He looked at how value-adding processes could reduce the amount of food waste generated by producers and retailers.

In the USA and UK, up to 20 per cent of vegetables were rejected by retailers based on their imperfect appearance and were ending up as waste, despite often being identical in nutritional value and taste to those accepted by stores. Increasingly, innovative producers are turning these imperfect vegetables into desirable value-added products. For instance, second-grade lettuce is being shredded and packaged specifically for fast-food outlets and other retailers who do not require a supermarket grade product.

Mr Vorrasi's research shows that for value-adding processes to be successful, they have to

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come from an understanding of the customer's needs and desires.

Mr Vorrasi remarked 'It's an exciting time in the vegetable industry, as we see a growing desire amongst the population to increase their vegetable consumption.

The ability to harness the opportunity will come down to the vegetables we grow and the way we adapt and change in line with consumer preferences.'

Source: Adapted from 'Big gains to be had in value-added vegetables, says Nuffield Scholar', *Good Fruit & Vegetables*, 16 May 2018/Nuffield Australia



Mark Fergus

Figure 8.7 Value-added food products often save consumers time and provide variety in their diets.

ACTIVITIES

1 Brainstorm and name three examples of leafy vegetables.
2 Research the definition of the term 'hydroponic'. What do you think would be advantages of growing vegetables hydroponically?
3 What value-added cauliflower product did Michael Vorrasi find being sold in the UK? Suggest why this product has appealed to consumers.
4 How was second-grade lettuce turned into a value-added product? What advantages does this product have for fast-food outlets and for farmers?
5 Suggest current dietary trends that may contribute to the desire for the population to increase their vegetable consumption.
6 Describe a value-added vegetable product you would like to have available in supermarkets. Give reasons why.

UNIT REVIEW

LOOKING BACK

1 In relation to food trends, define these terms:
- local produce
- food waste
- mindful eating
- value-added products.

2 What does the kangaroo logo indicate on country-of-origin labelling?
3 Give two examples of emotional eating.
4 Suggest two techniques to implement when mindfully eating.
5 Outline three statistics about food wastage in Australia.
6 Outline four reasons why food wastage occurs.
7 Briefly explain the impact of food waste on the environment.
8 List four examples of value-added food products and explain why the products are attractive to consumers.
9 Explain the difference between a vegan diet and vegetarian diet.

FOR YOU TO DO

10 You notice that milk in the refrigerator is close to its use-by date. To avoid food wastage, suggest a recipe that can help to use at least 250 mL of milk.
11 Suggest a recipe for using some boiled/steamed rice left over from last night's dinner.
12 Research the location of your local farmers' market.

TAKING IT FURTHER

13 Find a recipe for a vegan cake. Make and evaluate it.
14 Find a calendar listing the seasons for fruits and vegetables grown in your local area. What foods are in season now?

Food sustainability

Sustainability aims to avoid the depletion of the Earth's natural resources so that we meet our present needs, without compromising the ability of future generations to meet their needs.

Our food choices have a major effect on sustainability. A sustainable food is grown or produced with consideration of its health, environmental and social impacts. This includes where the food was made, the materials it was made from, how it is packaged, and the consumption of energy used to produce the food.

Traditional Aboriginal and Torres Strait Islander practices

The idea that we should protect our environment is a relatively new concept in most Western civilisations. For over 60 000 years, Aboriginal and Torres Strait Islander peoples had great respect for their land because it supplied their food and supported their existence. While they did not farm in the same manner as agricultural societies in other parts of the world, they possessed detailed knowledge of food cultivation, production and processing. This information was passed down from elders and through Dreaming stories, which guided people to protect their environment so that resources were not depleted.

Aboriginal people were semi-nomadic, moving in a regular cycle over a defined territory. They knew when to move to particular areas and where they could collect foods in season. At the same time each year, they would return to an area and because they only hunted or gathered enough food for what was needed, the food supply had time to be replenished. Larger animals were more highly valued, giving smaller animals a chance to grow. Even when fishing, small fish were thrown back. Many groups also had a totem animal that was forbidden from being used as food. It is theorised that these totem animals may have been in danger of extinction so they were protected.

With their extensive knowledge of the land, Aboriginal people used controlled firestick farming practices where they deliberately burnt selected areas of vegetation.

The fires would:

- expose game by removing undergrowth, making them visible and easier to hunt
- encourage the growth of lush grass and young shoots that would bring birds, herbivores and marsupials to graze or forage among the fresh regrowth
- suppress weed growth
- burn off the tough covering of the seeds of many native plants to make them ready for germination when the rains arrived.

Archaeological evidence also suggests that in some Aboriginal communities dams were built to hold rainwater, diverting the water towards fruit-bearing plants, and agricultural practices were used to ensure a steady supply of food. Aboriginal people valued their environment and did not waste resources. For instance, they would use every part of an animal, either for food or to make things such as clothing, baskets, tools and weapons. Today there is a re-emergence of the land management practices used by Aboriginal and Torres Strait Islanders as non-Indigenous people have become more open to utilising Indigenous expertise. Across Australia there are a number of groups that work with farmers and Indigenous people, encouraging them to work together to share knowledge and manage the land.



Alamy Stock Photo/Penny Tweedie

Figure 8.8 Firestick farming

Management of resources

Any food item grown, produced or manufactured uses natural resources such as water, land and energy. In order to preserve the environment, it is important to manage these resources.

Land

Fertile soils provide the conditions needed for optimum plant growth. The soil should be high in nutrients, provide good drainage, have a pH of between 5 and 6, and be rich in organic matter, including healthy microorganisms. With increasing global demands for food, animal feed (fodder) and timber forest products, it has become very important to manage forests, pastures or grasslands so that land remains fertile and soil degradation and desertification is prevented. Composting is an important tool in preventing soil degradation. Compost is decomposed organic material, such as leaves, grass clippings and kitchen waste. It provides many essential nutrients for plant growth, which makes it an excellent fertiliser. Compost also improves soil structure so that soil can easily hold the correct amount of moisture, nutrients and air.

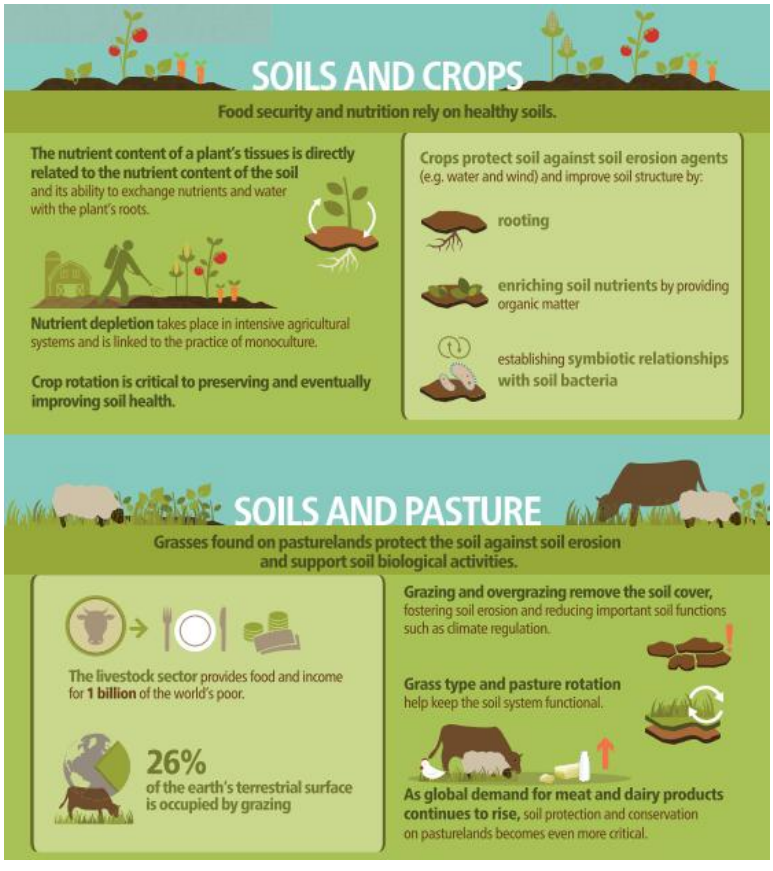
There has also been a trend towards organic farming in an effort to maintain soil fertility. This involves growing and nurturing crops without the use of synthetic-based fertilisers and pesticides. Furthermore, more products such as cocoa, coffee, tea and palm oil are being sourced from companies that do not cut down forests. Rainforests are home to 50 per cent of the world's plants and animals and produce 20 per cent of the oxygen we need to breathe. Deforestation can affect wildlife, ecosystems, weather patterns and even the climate.

Water

A large amount of water is used in the food industry. For instance, water is used for:

- growing plants, feeding livestock and fish farming
- washing food and as an ingredient in the preparation and manufacturing of food products
- cleaning equipment and food premises
- cooking, heating and cooling foods in food processing.

The processing of food uses more water than any other Australian industry and, as a result, the Australian food industry is investigating different ways to use water more efficiently. For instance, farmers are improving irrigation systems and placing timers on watering systems, as well as using recycled water to feed crops.



© FAO 2015 'Soils are the foundation for vegetation' (infographic); http://www.fao.org/resources/infographics/infographics-details/en/c/325860/ ACCESSED August 2018

Figure 8.9 The importance of land management

© FAO 2009 'How much water is needed to produce...?' (infographic); http://www.fao.org/resources/infographics/infographics-details/en/c/218877/ACCESSED August 2018



Figure 8.10 The more a food is processed, the more water is used.

Energy

The food industry uses a lot of energy. For instance, power in the form of electricity and fuel is used for:

- storing foods (refrigeration and freezing)
- preparing and cooking foods
- powering equipment
- lighting, heating, cooling and cleaning premises
- transporting products
- running computer systems.

Strategies being used by the food industry to reduce energy include:

- installing controllers to automatically switch off equipment when not in use
- ensuring seals around doors, windows, refrigerators, freezers and cool rooms are well maintained
- installing automatic door closers and training staff to be energy efficient
- upgrading equipment to the most energy efficient
- installing solar panels where feasible
- installing sensor and LED lighting
- reducing food miles.

Farm management practices

Farmers work the land to gain an income, but they also have a responsibility to preserve the land for future generations. Key sustainable farming practices have emerged over decades of science and practice.

Crop rotation

Growing the same crop in the same place for many years in a row heavily depletes the soil of nutrients. It also causes soil erosion and reduces crop yield.

With crop rotation, different types of crops are planted in the same area in sequenced seasons. This way a crop that leaches the soil of one kind of nutrient is followed during the next growing season by a dissimilar crop that returns that nutrient to the soil or draws a different ratio of nutrients. In addition, crop rotation prevents the build-up of pathogens and pests and can improve soil structure because of the varied root structures of the crops.

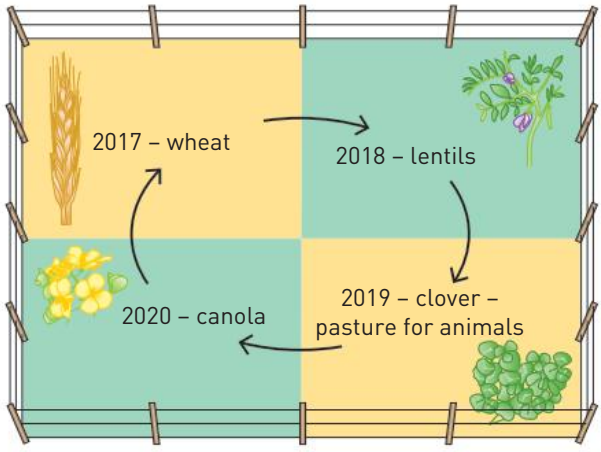


Figure 8.11 Crop rotation

Biodiversity

Biodiversity is the existence of a wide variety of plant and animal species living in their natural environment. Farm management practices aimed at achieving biodiversity include:

- farming both crops and animals, with the animals providing manure to fertilise crops and the crops providing animal feed
- using trees to provide shade and shelter to protect crops and animals, while also potentially offering additional income (e.g. from their fruit)
- reducing the use of chemicals (e.g. it has been found that organic farming results in larger and more diverse populations of butterflies, soil microbes, beetles and earthworms).

Ethical treatment of animals

As part of the trend towards food transparency, consumers want to know not only where their food comes from, but also how animals raised for food are raised. An animal raised in an ethical manner has received clean water, enough space, nutritious feed and quiet handling. It is also believed that animals raised humanely are tastier than those confined in small cages or raised on factory farms.

Concern for the ethical treatment of animals has resulted in an increase in:

- cage-free and free-range eggs
- free-range chicken
- free-range pork
- grass-fed beef
- organic farming
- antibiotic- and hormone-free animal feeds
- sustainable fishing practices
- plant-based diets
- vegetarian and vegan options on menus.



Alamy Stock Photo/Carolyn Jenkins

Figure 8.12 Under Australian Consumer Laws, producers of eggs that are labelled as 'free-range' must allow the hens to roam outdoors during daylight hours to forage and not exceed a stock density of 10 000 hens per hectare.

FOOD IN FOCUS

FOOD SUSTAINABILITY

PURPOSE

To discuss issues surrounding food sustainability.

Soul Origin

Soul Origin is an Australian-owned quick service restaurant. The first store opened in 2011, and now franchised stores can be found in many food courts in NSW and expanding throughout Australia.

The franchise's motto, 'Feed your soul', is a prompt for mindful eating. The menu offers a range of healthy breakfast and lunch options, with everything prepared fresh on-site. Their product range includes wraps, sandwiches, salads, paninis, seasonal soups, coffee and sweets, as well as catering packages for functions such as kids' parties.

They offer a diverse range of ingredients; from macha to kale to pomegranate to chicken schnitzel. They also offer a range of milks, including soy and almond.

The company states their food is 'a nutritious, fresh offer you can eat every day'. The cooks prepare some ingredients, such as chicken, rice and pasta, in the central production kitchen. Other menu items, such as the salads, are put together instore with fresh ingredients from local providores.

Sustainability is a big focus of the company: 'We want to leave the place in as good a shape as we found it when we go.' A lot of their stores use recycled timber in the fit-outs and they use paper cups and biodegradable plastic lids. The containers are bamboo, because they need to be strong and maintain the temperature of the food, and they have biodegradable eco lids.

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ACTIVITIES

1 In groups, discuss the sustainability practices of Soul Origin. Consider food miles, food waste and recycling.

2 Research the menu at Soul Origin and plan, prepare and present a dish that could be added to the menu.



UNIT REVIEW

LOOKING BACK

1 Explain why it is important to live sustainably.
2 Give reasons why firestick farming was used by Aboriginal communities.
3 Explain why it is important to maintain healthy soils.
4 Which require more water to produce: processed or unprocessed foods?
5 Which require more water for their production into foods: plant or animal products?
6 Give two examples on how energy is used in the production of food.
7 Define crop rotation.
8 Define biodiversity.
9 Define organic farming.
10 Describe how animals should be treated ethically.

FOR YOU TO DO

11 Give reasons why orange juice uses more water to produce than an orange.
12 Find a package for a food that claims that animals have been treated ethically. What does the claim state, and where on the package does the claim appear? Give reasons for placing this claim on a food package.
13 Find a package for a food that claims that the food has been produced sustainably. What does the claim state, and where on the package does the claim appear? Give reasons for placing this claim on a food package.
14 Produce a simple fact sheet on how to compost kitchen scraps that can be printed in the school newsletter.

TAKING IT FURTHER

15 Examine a menu that includes indigenous ingredients. Identify the indigenous ingredients and explain why they are sustainable.
16 Visit a venue that practises sustainable farming. Debate the reasons why not every farmer uses sustainable farming practices.

Emerging technologies in the food industry

Emerging technology is new technology that is currently being developed or will be developed within the next five to 10 years. New technologies in the food industry are helping to create more sustainable and higher-quality food products as well as more efficient food production processes.

Packaging innovations

Roughly 60 per cent of packaging materials in Australia is recycled. The remaining packaging materials ends up in landfills where they can take thousands of years to disintegrate completely, releasing toxic gases in the process.

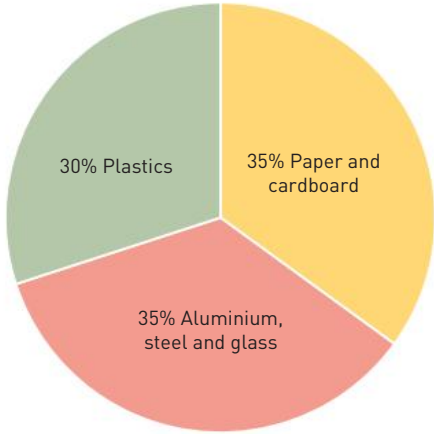


Figure 8.13 Percentages of packaging materials used in Australia

Paper, steel and glass are easily recycled; however, plastics are not as easily recycled. When metals or paper are combined with plastics, recycling of the package becomes even more difficult. For instance, a typical chip bag is made up of multiple layers of foil and plastic (also called laminate). The packaging is preferred by the food industry as it is lightweight, easy to label and occupies less space on the shelves; however, there is no technology available to separate the layers in order to recycle these bags. As a result, they end up in landfill. The production of plastic and metal also uses an extensive amount of non-renewable resources such as petroleum and electricity that is still largely generated by burning fossil fuels.

Today, plastic packaging, particularly for the food service and catering industry, is being replaced by more environmentally friendly materials. Bamboo, cornstarch, sugarcane pulp/bagasse (a byproduct from sugar extraction) and wood fibre/cellulose (a waste product of the paper and forestry industries) are all biodegradable organic materials that can be moulded easily into containers and in most cases can withstand warmth and moisture.



Alamy Stock Photo/Hyderabad

Figure 8.14 Edible cutlery, made from a mixture of sorghum, rice and wheat, is an alternative to plastic.

Edible food packaging is a particularly innovative form of packaging that is currently being developed. Food ingredients such as milk proteins (casein), seaweed, jellies, apple juice and tomatoes are formed into thin wrappers to cling to and protect food. Interestingly, beeswax wraps, an old-fashioned technique, has become a trendy way to replace plastic cling wrap.

Food packaging such as cans and sachets that can self-heat or self-cool their food contents without the use of external power are another current development in food packaging. These packages use mechanical or chemical reactions to heat or cool the foods. They are particularly useful for military operations, during natural disasters, or whenever conventional cooking is not available.



Alamy Stock Photo/studiomode

Figure 8.15 Self-heating coffee in a can



Inductive Intelligence, inductiveintelligence.com

Figure 8.16 This smart heatable packaging technology taps the energy readily available from a wireless phone charger.

HANDS-ON

MAKING BEESWAX WRAP

PURPOSE

To investigate and produce a trending form of food packaging.

MATERIALS

100% cotton fabric squares (cut a few different sizes)
1 cup grated beeswax
50 g powdered gum rosin (pine resin)
2 tablespoons jojoba oil
Iron; an old towel or blanket
A few sheets of greaseproof paper
Wire cooling rack

ACTIVITY

1. Lay down the towel and heat up the iron.
2. Place a few sheets of greaseproof paper onto the towel, then lay one of your cotton squares on top of this.
3. Evenly sprinkle your beeswax, gum rosin and jojoba oil over the cotton square, ensuring that you go to the edges.
4. Place a few more sheets of greaseproof paper back on top of the wax and cotton square and then iron over it.
5. Peel back the paper to check that the wax is evenly melted. You may need to sprinkle more on for even coverage and then replace the paper and iron again.

>

6 Peel the wax-infused cotton square off the greaseproof paper and let it cool and set on a wire rack.

Use as you would cling wrap, but don't use them it on dairy or meat products as they may leave harmful bacteria on the wrap. Wash wraps in cold or lukewarm water with a mild soap. If the wax is wearing away after a few months, you can simply sprinkle on another layer and repeat the ironing process to make them brand-new again.

Source: Bindi Donnelly



Getty Images/Portland Press Herald

QUESTIONS

1 Why are beeswax wrappers not suitable for dairy or meat products?

2 Explain at least three benefits of using beeswax wrappers.

Robots

A robot is a machine that can do the work of a person and that works automatically or is controlled by a computer. Many tasks in food production cannot be easily performed by computers. For instance, it is difficult for computers to sort fruit because of their variable sizes. Consumers are also desiring more artisanal products, which are products produced traditionally and with care by human hands on a much smaller scale than industrial farming and mass food production. Increasingly, however, robotic applications are being developed and integrated into food production because they can:

- increase productivity, due to their speed and ability to operate for long periods
- improve quality, due to their accuracy
- save labour costs
- reduce the risk of injury to workers from hazardous or repetitive tasks
- prevent contamination, as robots make it easier to maintain hygiene standards.

Robots are designed with sensors and manipulators to perform roles such as:

- cleaning and sorting foods
- blending and mixing ingredients
- filling food containers or pie cases
- cutting foods such as meats
- controlling cooking and storage processes such as baking and chilling
- picking and placing food products onto trays or packages, or feeding them into other machinery
- assessing food quality and discarding those products that do not meet standards
- packaging and palletising food for transport.



Shutterstock.com/asharkyu

Figure 8.17 Robots can help to ensure food quality and improve productivity

Manufacturing processes

Food manufacturing involves processing raw ingredients into food products.

Australian food manufacturers are particularly focusing on technologies that can assist to produce high-quality nutritious food products, reduce food waste and develop food products for export.

Extrusion

Food manufacturers are increasingly using extrusion processes in developing new foods products. An extruding machine basically grinds all the ingredients into a consistency that can be moulded into a shape; it is then usually steamed to cook the food and retain the shape.

The extrusion process has long been used to make pasta, snack foods, breakfast cereal and confectionery. Today, however, it is being used to make healthier products such as snack foods and pastas made from pulses, and breakfast cereals made from ancient grains.

It is also helping to increase the range of gluten-free products and to turn soybeans, which contain complete protein, into textured vegetable protein (TVP), which can be turned into meat substitutes for many vegetarian and vegan products.

Extrusion is also helping to reduce food waste. For instance, canola meal, a byproduct from canola oil processing, contains around 40 per cent dietary fibre and 40 per cent protein and is now being extruded to make nutritious foods. Similarly, the waste products of chicken, seafood and beef processing are being transformed to make protein ingredients for protein shakes.



Shutterstock.com/M.ALEX

Figure 8.18 Pasta-extruding machine

Freeze-drying

In comparison to other forms of drying, freeze-drying is a relatively recent method of preservation. It involves rapidly freezing a food, vacuuming out about 98 per cent of the water content and then sealing the food in an airtight container. Instant coffee was one of the first freeze-dried products. Today, many fruits, vegetables, meats, eggs and food flavourings are freeze-dried and used as ingredients in various products. It is particularly useful for using up excess stocks of fruits and vegetables, to avoid food wastage.

Due to dehydration, freeze-dried foods have many advantages. The food is very lightweight, requires no refrigeration, has a long shelf life, and is less prone to contamination from yeast and harmful bacteria. As freeze-drying causes very little damage to the structure of the food, the food retains much of its colour, shape, texture and flavour when it is prepared for consumption by reintroducing water.

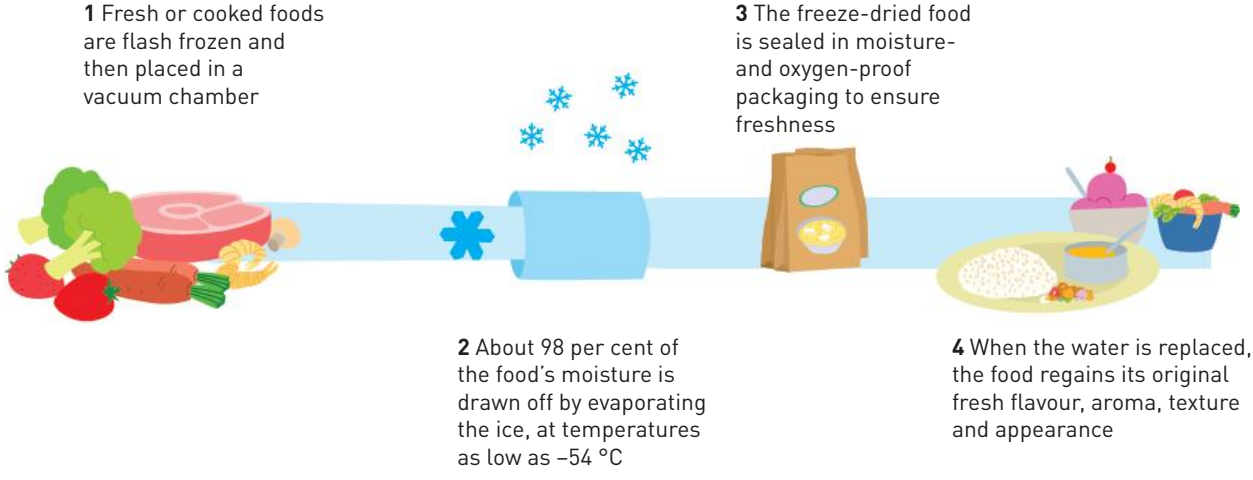


Figure 8.19 The process of freeze-drying

FOOD IN FOCUS

EMERGING FOOD TECHNOLOGIES

PURPOSE

To investigate emerging technologies in the food industry.

Broccoli powder reduces vegetable waste and enriches food products

Australian researchers [from the CSIRO and Hort Innovation, a research and development group] have developed a powder made from 'ugly' broccoli they say can be a nutrient-rich add-on for lattes and other products, and prevent less-than-perfect vegetables from being wasted ...

The new product delivers about one serving of broccoli in two tablespoons of the powder.

Besides green lattes, broccoli powder might be useful for adding protein and fibre to soups and smoothies, and it can be used in baking and as a way to get picky children to eat more vegetables, Hort Innovation CEO John Lloyd said ...

Creating powder out of 'ugly' produce ... not only diverts vegetables from the waste stream, but the product could introduce more vitamins, minerals, protein and fiber into the typical diet.

Lloyd noted that the average Australian is still not eating the recommended amount of vegetables daily ...

The convenience factor is also important since some consumers might find it easier to include a powdered form of broccoli or other produce in their diets instead of buying, washing and preparing it at home.

Mary Ann Augustin, CSIRO's lead researcher, said ... the powder is made from whole broccoli, which is pre-treated and dried to keep the natural color, flavor and nutrient composition.

Additional vegetables are being given the powder treatment, such as alfalfa, spinach and kale, and others are likely to follow. Fruit powders are also available, including those made from strawberry, blueberry, açai, goji berry, pomegranate and many others. These products are adaptable to a number of different foods – yogurt, beverages and baked goods among them.

[Augustin] noted powdered broccoli has already been successfully included in extruded snacks.

Source: Siegner, C 2018, 'Broccoli powder reduces vegetable waste and enriches food products', *FoodDive*, 14 June



Shutterstock.com/Alexander Prokopenko

ACTIVITIES

1 Give reasons why it would be useful to turn broccoli into a powder.
2 Identify the preservation method used to turn broccoli into a powder.
3 Give three examples of how broccoli powder can be used.
4 In relation to food processing, investigate another current innovation being developed by the CSRIO. Briefly describe the innovation and its benefits.

CSIRO

3D printed food

3D food printing is like standard 3D printing but uses food material to create edible objects. The 3D object is digitally created using 3D software. The design is then sliced by the computer into different layers. Each of these layers is then printed by a printer, one on top of the other so that you end up with the desired 3D object. The process requires no moulds.

Materials such as sugar pastes, chocolate, pasta and biscuit mixtures have been used to make unusual and intricate designs. The process is time consuming but is excellent for creating novelty food items or intricate designs for cake decorations.



Getty Images/AFP/ROBYN BECK

Figure 8.20 3D printers can be used for to create intricate designs.

Point of sale ordering

Point of sale (POS) systems are checkout locations in business operations where transactions occur between a supplier and a customer. The POS terminal is a computer used as a cash register; however, POS systems can do more than process sales.

In retail stores such as supermarkets a POS system eliminates the need for price tags as the price of a product is linked to its product code. A cashier (or the customer at self-checkouts) scans this code to process a sale. The system also makes it easier to implement changes to prices and incorporate discounts and loyalty schemes. In food service establishments such as fast-food restaurants the POS system allows staff and, at some establishments, customers to place an order, which is then linked to the kitchen for quick preparation and service.

Most systems use touch screens with images to make ordering easier. The computers work out the total costs, avoiding calculation errors. Most also accept a variety of payment options for customers.

For management, POS systems provide valuable data. They help to keep records of all transactions, which in turn helps them to analyse their sales data. They can see, for instance, what menu items are popular and which may need to be removed from menus. POS systems also allow for more efficient stock control, providing alerts to reorder when stock levels are low.



Shutterstock.com/krakow.poland

Figure 8.21 POS systems are becoming very interactive for customers and provide valuable data for business.

UNIT REVIEW

LOOKING BACK

1. Name five materials used for environmentally friendly packaging in the food service and catering industry.
2. Give two examples of when self-heat food packaging would be useful.
3. Define a robot.
4. Give four examples on how robots are used in the food industry.
5. Name four advantages of using robots in food processing.

FOR YOU TO DO

6. Investigate images of freeze-dried foods online and make a list of foods that are currently being freeze-dried. Suggest the benefits of freeze-drying based on the images observed.
7. Sketch a 3D food design you would like to print. Explain the purpose of the design, and describe the colours, size and ingredients that will be used in the design.

TAKING IT FURTHER

8. Visit a food service establishment and ask the manager or staff about the benefits of the POS systems they use.
9. Conduct a taste test of extruded vegetarian meat products such as 'sausages' and 'bacon'. Examine the ingredients used to make the product and then assess its sensory characteristics (i.e. taste, aroma, appearance and texture). How do you think it compares to the meat equivalent?

Trends in food presentation and styling

Food presentation is the art of making a food look good on a plate. Food styling involves preparing a food to be photographed or filmed. As with food trends, how foods are presented and styled changes over time.

Garnishing and decorating

Garnishes and decorations are ingredients that are usually placed last on a dish or drink to make them visually appealing and appetising. In cookery, you generally garnish a savoury dish and decorate a sweet dish.

In the 1970s, a sprig of curly parsley was the most common garnish for savoury dishes, while whipped cream and strawberries were common decorations for desserts. In the 1990s, garnishes became more dramatic, with watercress, dill and flat leaf parsley often used, while desserts were decorated with fruit sauces and spun toffee. Today, garnishes and decorations are integrated into a dish only if they positively contribute to its sensory properties the food – appearance, flavour, texture and aroma. Sprinkled seeds, powders, shaved cheeses, micro herbs, edible flowers, glazes, sauces and dressings are some examples of garnishes used in modern plating.

Garnishes and decorations should be edible, fresh, natural and of good quality. They need to enhance and complement the flavour of the primary ingredient, for instance, a lemon wedge with fish. They also need to have a purpose. A garnish can fill an empty space on a plate, add height to a dish, indicate the main ingredient, and help to provide contrast in the texture, flavour or colour of a dish.



Figure 8.22 The fresh fruit and mint on this dessert adds flavour, texture, colour and height to the berry cheesecake.



Left: Shutterstock.com/Natalia Pyzhova; right: Alamy Stock Photo/Tony Clark

Figure 8.23 The addition of croutons and herbs to this soup adds flavour, texture and colour.

Photography

Food presentation and styling is used when photographing foods for:

- social media
- webpages and food blogs
- recipe books and recipe cards
- magazines and newspapers
- catalogues and billboards
- brochures and leaflets
- posters and framed pictures
- food labels and packages
- menus
- television shows and advertisements.

Tips for food styling and photography

- Shoot in natural light, close to a window, but avoid shooting in harsh sunlight or using a flash.
- Set up on a tabletop for a top-down shot and place the table against a wall for an angled shot. Choose the angle that suits the food; overhead for pizza and soups and side angle for burgers, cakes, drinks and desserts in glasses.
- Coloured papers, wallpaper, printed images, chopping boards and tablecloths make good backgrounds. Bright backgrounds can add colour to bland-looking food but can distract from a colourful dish.
- Position square and rectangular objects such as trays and platters diagonally.
- Choose neutral-coloured crockery (white, black, grey, beige) with a matt finish to avoid light flares and glares. Light colours work best for spring and summer dishes, and dark, earthy neutrals for autumn and winter dishes. You can use traditional plates for some cuisines (e.g. Asian).
- Use no more than four props. Make sure they help tell a story about the dish being served and are smaller than the dish. For instance, a paella can be served in a mini paella pan and garnished with lemon wedges and be photographed on a rustic board or with a small Spanish tile in the background.
- Garnish and decorate simple, plain dishes such as a creamy panna cotta. Use different colours and textures to add interest (e.g. micro herbs, edible flowers, shaving of coconut or chocolate, nuts and seeds). Use the ingredients list in the recipe for inspiration.
- Keep foods looking fresh. Sprayed water can refresh herbs and salad ingredients, while sprayed sugar syrups and oil add shine to foods. Meats are best cooked to medium-rare and look juicier when brushed with their cooking juices.
- Crop a serving plate if it is too big or looks too busy with many ingredients.

9780170442855



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RACHEL EAST:
FOOD CONSULTANT AND FOOD STYLIST

Rachel is a freelance food consultant and food stylist. A large proportion of her work as a food consultant involves working with food companies to develop recipes and serving suggestions for food products the company wants to promote. Her recipes and serving suggestions are then displayed on the food packages, the company's website and social media, as well as on other advertising materials. Photographs of the final dish usually accompany the recipes and serving suggestions, and food companies normally contract professional photographers for this task.

As she is also a food stylist, Rachel prepares and styles the food for the recipe photo shoots. This involves chopping, dicing and partially cooking ingredients and selecting suitable plates, props and backgrounds. Rachel finds plates, bowls and platters of different sizes and heights with neutral colours and subtle textures photograph best.

She works closely with the photographer to ensure the image produced is not only clear but tells a story about the food. Importantly, they need to ensure that the food they are promoting is clearly visible within the dish and that the dish not only looks appealing to eat but also achievable to reproduce by consumers. Rachel usually cuts food such as pies, cakes and tarts to show the ingredients inside. Sometimes she leaves the crumbs behind to create a homely, rustic look.

Rachel limits the use of props and ensures those she does use are not too large, in order to focus on the food. She prefers using vintage cooking utensils, silver cutlery, floral teacups and crystal glasses as they have character and help to create a warm, inviting feel. She also only uses props that are relevant to the recipe; for instance, a rolling pin for a homemade flat bread recipe photo.

Rachel knows that photographers prefer grey, white or blush pink colours as backgrounds when photographing food. Wood grain and marble designs also work in backgrounds, as do fabrics with texture. Shiny surfaces should be avoided as they provide glare.

Food styling is quite time consuming and requires precision. Indeed, Rachel's toolbox contains a range of food styling tools such as knives, scissors, tweezers, scoops, syringes, toothpicks, pins, sieves, scalpels, brushes, tapes and even a blow torch.

The photographer too relies on a range of tools and equipment to get the perfect shot, whether it is in their studio or on location. Their toolkits can contain digital cameras, lenses, flashes, light stands, light boxes, camera tripods and light meters, as well as cables to connect cameras to computer devices in order to photo edit the food.

QUESTIONS

1 Describe the work Rachel East does as a food consultant.
2 Outline her role as a food stylist.
3 Outline Rachel's tips for backgrounds and props to use in food photography.
4 List five tools used by a food stylist.
5 List five pieces of equipment used by a food photographer.
6 Discuss the importance of teamwork in this line of work.
7 Find a food product that includes a recipe and serving suggestion on its label. Assess why each have been included on the label.
8 Research when the term 'serving suggestion' needs to be used on Australian food labels.

PRACTITIONER FOCUS

Plating

Plating is the arrangement of food on a plate.



Classical

The protein at the front of the plate, with vegetables or starches at the back.



Freeform

Food item are arranged in an artistic, abstract style.



Landscape

Foods are usually kept low and long. The food may or may not be in the centre of the plate.



Stacked

Food items are stacked on top of each other, or the main item is leaning against a vegetable bed or side item.

Left to right: iStock/Getty Images Plus/ mphillips007; Shutterstock.com/Jyliana; Shutterstock.com/Ryzhkov Photography; Alamy Stock Photo/ incamerastock

Figure 8.24 Common plating styles

Guidelines for plating food for catering events

Preparation

- Research and sketch ideas.
- Ensure that ingredients vary in colour, texture and shape, while complementing each other in flavour.
- Ensure that all food that is plated is fresh and cooked well.
- Choose the right size plate. About two-thirds of the plate should contain food.
- Choose a plate colour that highlights the food.
- Have all ingredients and equipment ready before plating.
- Do a test plate first.
- Warm plates for hot food to ensure it is served hot.

Placement

- The main ingredient (usually protein) must stand out.
- Place the best-looking side of a food so that it faces the diner.
- Have a focal point. This can be achieved by having one food sitting higher than another or by using a garnish.
- Space on a plate can simplify designs.
- Keep the rim of the plate clear.
- Wipe up spills, grease marks and drips.
- Ensure that portion size and presentation is uniform for all guests.

HANDS-ON

DECORATING AND GARNISHING TECHNIQUES 1

PURPOSE

Demonstrate appropriate selection of equipment and techniques used in food preparation.

MATERIALS

White plates
Strawberry or chocolate topping in a squeeze bottle
Skewers

ACTIVITY

Follow the steps outlined in the figures.



Mark Fergus

Figure 8.25 Pulling a skewer through chocolate sauce dots creates a border of hearts.



Mark Fergus

Figure 8.26 Draw circles of topping on a plate and then use a skewer to produce a spider's web.



Mark Fergus

Figure 8.27 Design your own freehand signature design using melted chocolate in a paper handmade piping bag.

HANDS-ON

DECORATING AND GARNISHING TECHNIQUES 2

PURPOSE

Demonstrate appropriate selection of equipment and techniques used in food preparation.

ACTIVITY

Follow the steps outlined in the figures.

MATERIALS

Chives
Spring onions
Carrots
Cucumbers
Strawberries
Lemon
Paperclips or toothpicks
Vegetable peeler
Iced water
Kitchen scissors
Paring knife

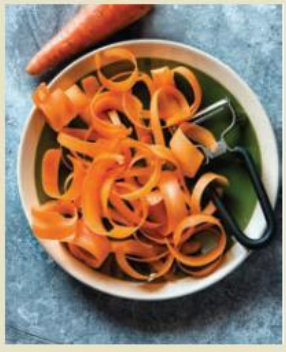


Shutterstock.com/Marie C Fields



Shutterstock.com/pim pic

Figure 8.28 Use kitchen scissors to chop chives and curl spring onions (you may also know this as shallots). Placing the spring onions in iced water will make them curl more easily.



Shutterstock.com/thefoodphotographer



Shutterstock.com/sarsmis

Figure 8.29 Use a vegetable peeler for carrots or cucumbers and then place the peels in iced water to make them curl. Use paperclips or toothpicks to help them to curl in one direction. (Remember to remove them before serving!)



Shutterstock.com/Kovaleva_Ka



Alamy Stock Photo/Cephas Picture Library

Figure 8.30 Use a paring knife to cut a lemon slice almost in half but keeping it intact, then twist it. Slice a strawberry to just above the stem and then spread it to make a fan.

The media and food styling and photography

The media – whether it is print media such as books, magazines or newspapers, or electronic media such as television, the internet and social media – greatly influences food trends.

Celebrity chefs

High media exposure has made some chefs famous. Celebrity chefs such as Jamie Oliver, Gordon Ramsay, Curtis Stone, Kylie Kwong, Adriano Zumbo, Matt Moran, Bill Granger and Luke Nguyen have been influential in promoting trends in food and food presentation. This is because celebrity chefs:

- prepare appealing restaurant-quality dishes that reflect the latest food trends
- challenge viewers to try new ingredients, recipes, cooking methods, presentation techniques and cuisines
- encourage viewers to buy fresh ingredients and to make foods such as ice-cream and fresh pasta from scratch
- are considered experts because they have been recognised for their food creativity
- write cookbooks and articles about food
- promote food and kitchen products.

Social media

'Social media' refers to websites and applications that are designed to allow people to share content quickly, efficiently and in real time. This includes Instagram, Snapchat and Facebook.

People love to share food, and social media is one way of doing this – even if the viewer does not get to eat the food! Before uploading, photos and short videos are often edited to adjust brightness, contrast and saturation to make the food look even better. When food photos go viral, they can change the way we eat. Breakfast, for example, has shifted away from bland-looking cereal and toast to the brunch-worthy smashed avocado on toast and smoothie bowls.

Food trends have also been influenced by professional food bloggers and Instagrammers, with their pristine food styling enticing viewers. Increasingly, food businesses are using social media as a marketing strategy to promote their products. Some have their own social media accounts that they use to attract followers; while some businesses, particularly large food companies, pay food bloggers and influencers to promote their products.

Cooking shows

Cooking shows are very popular. They show viewers the cooking techniques and presentation style of professional chefs and present these in ways that make them seem both achievable and desirable. The shows have helped expand the culinary repertoire of 'ordinary' cooks by showing techniques such as sous vide, tempering chocolate and blowtorching.

Viewers like the competition element used in many reality cooking shows, believing they too can prepare and present food just as well as, if not better than, the home cook contestants. Australians are putting more effort into food presentation because they have been inspired by cooking shows.

Cooking shows have also introduced Australians to more international cuisines, including how food is presented in these cuisines. *Food Safari* (SBS), for example, has presented the cuisines of over 35 cultural groups from within Australia. Some shows combine Australians' love of travel and adventure with their love of food. The host, usually a celebrity chef, travels around a country preparing and presenting their traditional dishes and encouraging viewers to try these foods.

9780170442855

Shutterstock.com/Kathy Hutchins



CURTIS STONE: CELEBRITY CHEF

From a very young age, Curtis Stone loved watching his mum and grandmother cook. He also enjoyed the chef lifestyle of his best mate's dad. These people inspired Curtis to pursue a career in food. When he went to work experience in a commercial kitchen, it cemented his decision to become a chef. He loved the madness of the kitchen: the extreme heat, long hours, sharp objects, crazy people, blood, sweat and tears.

Soon after completing his chef apprenticeship at Melbourne's Savoy Hotel he headed to London, chasing his dream to work for Marco Pierre White, who was one of Britain's most celebrated chefs. Despite knowing of Marco's tough head chef reputation, Curtis asked Marco for a job. This proactive attitude paid off because Curtis started working for Marco at the Grill Room on the same day they met.

After 12 months, Marco opened Mirabelle restaurant and made Curtis chef de partie and soon promoted him to sous chef. That year the restaurant won their first Michelin star. A year later, Curtis was appointed head chef at Marco's Quo Vadis restaurant in London where he was able to explore and incorporate Italian influences into the menu. The following year the restaurant was one of only four Italian restaurants to receive three rosette awards.

It was at that time his media career began. He was approached by a publisher who wanted to include him in a book about London's top chefs. Following this, Curtis did some early morning television work in the UK and soon returned to Australia to co-host the television series *Surfing the Menu* with Ben O'Donoghue. Here Curtis got to travel around Australia and cook foods from local orchards, vineyards, fish farms and paddocks. This experience strengthened his belief in eating locally produced foods. This led him to the USA where he hosted *Take Home Chef* and appeared on shows like *Top Chef Masters*, *The Today Show*, *America's Next Great Restaurant*, *The Biggest Loser*, *Around the World in 80 Plates* and *MasterChef*.

Today he lives in America and runs two fine dining restaurants in LA as well as a restaurant onboard Princess Cruises. His first restaurant was called Maude, after his grandmother. Curtis has written over five cookbooks, has his own range of kitchen products and is an ambassador for Coles Supermarkets.

Curtis's cooking philosophy is to 'keep it simple and cook with naturally produced ingredients just as Mother Nature intended ... Food that is in season just tastes better and you really don't have to do a whole lot to it to make it taste great! It is always less expensive, and chances are it hasn't been artificially treated or travelled halfway across the world to reach your kitchen.'

Source: Adapted from http://www.curtisstone.com/about-curtis

ACTIVITIES

1 Who inspired Curtis Stone to pursue a career as a chef?
2 Identify two chef positions that Curtis has held.
3 What other opportunities has Curtis had during his career?
4 Give reasons why Curtis promotes eating foods that are in season.
5 Assess how Curtis promotes food trends.
6 Visit Curtis's web page and comment on the types of food trends evident.



Curtis Stone

PRACTITIONER FOCUS

UNIT REVIEW

LOOKING BACK

1 Distinguish between food presentation and food styling.
2 What is the role of a garnish or decoration?
3 Give reasons why you would garnish fish with a lemon wedge.
4 List four places where styled photos of food may appear.
5 Compare classical and landscape plating styles.
6 Name four current celebrity chefs.
7 Give two examples of social media that could be used to promote food trends.
8 Give two examples of electronic media that could be used to promote food trends.

FOR YOU TO DO

9 Produce a one-page collection of food garnishing and decorating ideas.
10 Justify why each garnish or decoration may have been used on each of the following foods:
   a a lemon wedge on fried calamari
   b a strawberry fan on vanilla ice-cream
   c croutons on pumpkin soup.
11 Find images of four plating styles.
12 Research a sauce that traditionally accompanies:
   a fish and chips
   b roast beef
   c roast pork
   d spring rolls.
13 Select a photo of a food that has been styled for an advertisement, recipe book, food blog or web page.

Assess:

   a the theme or mood that has been created
   b the styling and photography techniques employed
   c how the styling and photography may influence the viewer.

14 Watch a cooking show. Report the following back to the class:
   - the name of the chef or presenter(s)
   - the name of the dish(es) they prepared
   - how the dish was prepared and what the chef did to make it interesting and appealing.

TAKING IT FURTHER

15 Use a slice of frozen plain cheesecake and plate it in a modern style.
16 In groups, produce a short video demonstrating a simple recipe or recipe hack that can be placed on social media.
   a Find an appropriate recipe.
   b Assign roles to each group member – for example, celebrity chef, host, contestants, camera person, audio technicians and food stylist.
   c Make sure to write and follow a script.

HANDS-ON

INSTA-WORTHY VEGIES

PURPOSE

To style food for photography.

ACTIVITY

Australians are not eating enough vegetables. Prepare and photograph a dish for a school-based campaign that would entice your school community to eat more vegetables.

1 Select a vegetable that is in season.
2 Research and select a suitable recipe that highlights the vegetable as a main ingredient. Take into consideration factors such as equipment, budget and preparation time.
3 Prepare for food practical (e.g. order ingredients).
4 Prepare for the photoshoot with styling props, backgrounds and cameras. Determine a theme (e.g. winter, summer, party, children, breakfast, dessert, etc.)
5 Prepare the recipe.
6 Present, style and photograph the food dish.
7 Edit the shot if necessary (e.g. by cropping it or altering the colour contrast).
8 Share the photo on your school website, or Instagram or Facebook account.

Food photography tips



Shutterstock.com/Syda Productions

Accepting new food trends

There are a number of factors that affect whether individuals will accept and adopt a new food trend.

Personal experiences

Ever wondered why some people love blue cheese or anchovies, but others cannot stand it? One reason is our unique DNA that affects how individuals taste and smell food, but it also depends on how familiar you are with the food and your personal experiences with food.

Bad experiences with food, such as food poisoning or being forced to eat a food, can result in rejecting a particular food no matter how appetising it appears. Good experiences may encourage the adoption of new food trends that may become food habits. For instance, most people are willing to try new chocolate bars because chocolate is often associated with good times. Our food likes and dislikes are difficult to change, but they are not permanent and as we age our taste changes.

Cultural taboos and beliefs

A taboo is an activity that is forbidden based on religious beliefs or morals. An act may be taboo in one culture and not in another.

Australians enjoy foods of many different cultures and are often willing to try new foods. However, there is still resistance to some cultural foods because of taboos and beliefs. For instance, horse meat is sold as pet food in Australia but it is eaten by people in other countries. Insects and insect products such as cricket protein powder are being promoted for their high protein content, yet there is resistance to the thought of eating them by many Australians.

Some examples of food taboos are as follows.

- Muslims do not eat pork or drink alcohol and eat meat that has been slaughtered in a prescribed way (halal).
- Seventh-day Adventists are vegetarian and avoid drinking tea, coffee and alcohol.
- Hindus do not eat beef products.
- Many Jewish people follow a kosher diet and therefore do not eat shellfish or pork products and have strict laws in relation to food preparation.
- Italians will not drink coffee with milk (e.g. cappuccino) after breakfast.
- The French consider it rude to rush through a meal and believe that leaving food on your plate implies that you did not enjoy your meal.
- In some traditional Aboriginal communities, emu cannot be eaten until manhood.

Traditions

Traditional foods are food choices and recipes that are passed down through generations.

Traditions can stem from cultural, family or societal influences. In many traditional Aboriginal communities, for example, foods are portioned and distributed according to traditional law and cultural practices determined by tribal elders.

Being a relatively young multicultural society, food traditions are not as rigid in Australia compared to some other countries and Australians are very accepting to take on traditions from other cultures and challenge established traditions. For instance, Australians used to follow the British tradition of having an iced fruitcake for weddings. Today, many couples prefer chocolate, mud or sponge cakes, or towers of cupcakes or profiteroles. Menus for weddings have also become less traditional, ranging from a sit-down menu to finger food or grazing station menus. Many couples like to give their wedding guests the traditional Italian bomboniere with sugared almonds as a gesture of gratitude.

Interestingly, Australians are also starting to bring back some old traditions. For instance many are, slow cooking meats, pickling and fermenting foods and fusing traditional indigenous ingredients into Western-style dishes.

FOOD IN FOCUS

FOOD TRENDS

PURPOSE

Investigate factors influencing acceptance of food trends.

Sweden's Disgusting Food Museum to challenge perception of disgust with polarising dishes

A museum showcasing some of the world's most polarising foods will open in Sweden, and there are three staple Australian dishes that have been offered a place at the table.

The iconic Vegemite spread, musk sticks and witchetty grubs are among 80 items being put on display at the Disgusting Food Museum in Malmö.

...

'I love Vegemite so I'm kind of sad that it's in the museum,' [the co-curator Dr Samuel West] laughed, adding that it would be a 'traumatic food experience' for those who mistook it for Nutella.

...

The curators of the museum also hope to challenge people's perception of disgust, which they said is influenced by culture and the foods they have grown up eating.

'Our current meat production is terribly environmentally unsustainable, and we urgently need to start considering alternatives,' Dr West said in a statement.

'If we can change our notions of what food is disgusting or not, it could potentially help us transition to more sustainable protein sources.'

Most of the 80 exhibits are real food. They are eaten today or they have historical significance, like Australia's witchetty grubs, which are still eaten by some Indigenous people.

Source: Zhou, C 2018, 'Sweden's Disgusting Food Museum to challenge perception of disgust with polarising dishes', abc.net.au, 1 November

Examples of the 'bizarre' foods exhibited in the museum include:

- cuy (roasted guinea pigs from Peru)
- casu marzu (cheese containing live maggots from Sardinia)
- stinky tofu (fermented bean curd from China)
- hákarl (fermented shark from Iceland)
- durian (a stinky fruit native to Malaysia, Borneo and Indonesia).

ACTIVITIES

1 Of the foods mentioned in the article, which one food would you never want to try? Give a reason why.
2 Which foods mentioned in the article would you be willing to eat? Give a reason why.
3 According to the museum, what two factors strongly influence our perception of disgust?
4 Which Australian food showcased at the museum would be a high-protein sustainable food source?
5 Conduct a class survey and ask each student to list two foods commonly found in Australian stores that they refuse to eat. For each food, the student must give a brief reason why. Compile a list of the top five disliked foods and the top five reasons for disliking these foods.



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Figure 8.31 Australia's much-loved Vegemite has been labelled 'disgusting' by a Swedish museum.

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Chapter review

LOOKING BACK

1 Define the term 'food trend'.
2 To be considered 'local produce', how far can it travel from where it is grown before it is sold and consumed?
3 Outline the beliefs regarding the benefits of consuming local produce.
4 Name three bush tucker foods high in protein.
5 Identify when food waste occurs.
6 Using an example, explain what is meant by a value-added food.
7 Define gluten and identify three grains rich in gluten.
8 What foods are typically included and excluded in a Paleo diet?
9 What should fertile soil contain?
10 Give an example of how lands can be managed to increase biodiversity.
11 Give two examples of how concerns for the ethical treatment of animals have influenced food trends.
12 Give two examples of innovative food packages.
13 Outline three tasks that are increasingly being performed by robots in food manufacturing.
14 Compare the classical plating style to a more modern food trend for the arrangement of food on plates.

FOR YOU TO DO

15 Produce a poster demonstrating ways to reduce food waste in the home.
16 Watch a current television cooking show and complete the questions below.
- Name the host and outline their food credentials (e.g. chef).
- What recipe(s) have been prepared? How do they reflect modern food trends?
- Choose one recipe and describe how the food was styled for the camera.

17 Research and compare the breakfast traditions of an Asian country and a South American country. How easily do you think you could accept these foods if you were to move to each of these countries. Explain why.

TAKING IT FURTHER

18 In 50 years, what would a documentary about the eating patterns of today's Australian families include? Work in small groups to write a 10-minute script.
19 **Challenge**
a Prepare and plate a modern version of the iconic Australian dish of 'meat and three veg'. Include one of each of the following: meat or meat substitute; green vegetable; white vegetable; yellow, orange or red vegetable.
b Justify how your dish reflects current food trends.

Recipe	Techniques	Equipment	Dietary considerations
Sweet potato and spinach salad 	Roasting Dressing Toasting	Baking tray Baking paper Sharp knife Chopping board Peeler Whisk Small frypan Jug	V DF
Mango chia pudding 	Chilling Mashing	Bowls (2) Sharp knife Chopping board Fork/masher Spoon Serving glasses (2)	Vg DF
Café-style mini banana bread 	Baking Mashing	Mini loaf pan (4) Sifter/sieve Mixing bowls (2) Fork/masher Wooden spoon Wire rack	V
Hawaiian salmon poke bowl 	Plating	Tongs Mixing bowl Colander Serving bowls (2)	GF
Lentil bolognese 	Boiling Simmering	Large saucepan Colander Large frypan Grater Metal spoon Chopping board Sharp knife	Vg
Seared scallops with pea puree and prosciutto crisps 	Pureeing Plating Garnishing	Baking tray Paper towel Small saucepan Stick blender Colander/strainer Small bowl Whisk Large frypan Tongs	GF
Wattleseed ice-cream 	Straining Freezing	Ice-cream maker Medium-size saucepan Wooden spoon Cup/small bowl Whisk Large mixing bowl Wooden spoon Sieve	
Retro sweet mushroom tarts 	Resting pastry	Shallow patty tin Electric mixer Sifter/sieve Fork Pastry board Cling wrap Rolling pin Sharp knife Spoon Wire rack Butter knife Mixing bowl (2)	

KEY

V = vegetarian Vg = vegan GF = gluten free DF = dairy free

Note: All recipes are nut free.

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RECIPE

Sweet potato and spinach salad

Salads are a nutritious way of using fresh local produce. Prepare and present this wheat-free, Paleo, vegetarian-friendly dish. Replace the honey with maple syrup or caster sugar and the salad is suitable for vegans, too.

Preparation time 10 minutes **Cooking time** 30 minutes **Serves** 2

INGREDIENTS

2 cups loose baby spinach
1 medium sweet potato
⅓ red onion
1 tablespoon olive oil
1 teaspoon cumin
1 tablespoon pumpkin seeds/ pepitas

Dressing

1 tablespoon balsamic vinegar
2 tablespoons olive oil
1 teaspoon soy sauce
1 tablespoon honey
Salt and pepper, to taste

METHOD

1. Preheat oven to 220 °C.
2. Line a baking tray with non-stick paper.
3. Peel sweet potato and cut into 1.5 cm cubes and place onto baking tray.
4. Drizzle olive oil over the potatoes and sprinkle with cumin and salt. Using clean hands, coat the potatoes with oil and spread out to form a single layer.
5. Roast potatoes for about 25 minutes until golden. Allow to cool.
6. Dice or thinly slice onion.
7. Heat a non-stick frypan over medium-low heat. Add pumpkin seeds. Cook, shaking pan, for 2 minutes or until lightly toasted. Allow to cool.
8. For the dressing, whisk the ingredients in a jug until well combined.
9. Arrange spinach on a plate or bowl. Top with sweet potato and onion.
10. Drizzle dressing over salad. Sprinkle with pumpkin seeds. Serve.



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QUESTIONS

1. List the equipment required to produce the salad.
2. Suggest an additional vegetable that could be included in the salad.
3. Suggest an ingredient to increase the protein content of this recipe.
4. Why do vegans not eat honey?
5. Define the following diets:
   - wheat-free
   - Paleo.
6. Identify the difference between the terms 'baking' and 'roasting'.

RECIPE



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Mango chia pudding

Prepare and decorate this trend in breakfast food using a superfood ingredient. It can also be used as a dessert.

Preparation time 5 minutes **Cooking time** 30 minutes or overnight **Serves** 2

INGREDIENTS

¼ cup chia seeds
1 tablespoon maple syrup
1 teaspoon vanilla extract
1 cup coconut milk
½ cup mango, fresh if in season or frozen
1 tablespoon passionfruit (fresh or tinned)
1 tablespoon coconut flakes
Mint leaves (optional)

TIP: For a chocolate chia, remove the mango layer and add some cocoa to the chia mixture before refrigerating.

METHOD

1. Add the chia seeds, maple syrup, vanilla extract and coconut milk to a mixing bowl. Stir together.
2. Place in the fridge to set. It is ready in about 30 minutes when a gel is formed and the mixture is thicker. Otherwise, refrigerate (covered) overnight.
3. Dice the mango and mash with a fork, or puree in a blender.
4. In a serving glass, layer the mango and chia pudding. Decorate with passionfruit and some toasted coconut flakes and/or a mint leaf.

QUESTIONS

1. Identify other types of milks that could be used to make this recipe.
2. Identify other fruits that could be used instead of mangoes.
3. Explain why it is best to use fruits in season.
4. Research when mangoes are in season and where they are grown in Australia and around the world.
5. Discuss why it is preferable to buy locally produced mangoes.
6. Research the nutrient value of chia seeds and explain why they have been classified as a 'superfood'.

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RECIPE

Café-style mini banana bread

Prepare and style this café favourite. It is a good way to prevent food wastage as it works best with soft ripe bananas.

Preparation time 15 minutes **Cooking time** 25 minutes **Serves** 4

INGREDIENTS

1 cup self-raising flour
½ teaspoon ground cinnamon
⅓ cup brown sugar, firmly packed
¼ cup traditional rolled oats
½ cup mashed ripe bananas (About 2 medium bananas. Frozen bananas are also suitable.)
¼ cup vegetable oil
¼ cup Greek yoghurt
1 egg, lightly beaten
Extra rolled oats, for sprinkling

METHOD

1. Preheat oven to 180°C and grease a 4-hole mini loaf pan.
2. Sift flour and cinnamon.
3. Combine flour, sugar and oats in a large bowl.
4. Add banana, oil, yoghurt and egg, and mix.
5. Divide mixture evenly among prepared pan holes. Sprinkle with extra oats.
6. Bake for 20–25 minutes or until cooked when tested.
7. Stand in pan for 5 minutes before turning out onto a wire rack to cool.
8. Serve warm or cold.

QUESTIONS

1. Identify what preparation needs to be undertaken before attempting the method.
2. Describe how you can test if the cakes are cooked.
3. Find another recipe that requires soft bananas as an ingredient.
4. Research how to freeze fresh bananas.
5. Research how to freeze banana cake.
6. Describe how you would style and photograph the banana bread for social media.



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RECIPE



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Hawaiian salmon poke bowl

Prepare and present this easy lunch recipe using value-added foods.

Preparation time 10 minutes **Cooking time** nil **Serves** 2

INGREDIENTS

1 teaspoon sesame seeds

⅓ cup frozen edamame beans

2 tablespoons Thai- or Vietnamese-style salad dressing

1 cup slaw mix (with purple cabbage)

2 slices smoked salmon

2 cups pre-cooked brown rice

TIP: Add cucumber slices, radish slices, sliced avocado or fermented cabbage for extra toppings.

METHOD

1. Prepare rice if necessary, according to directions, and allow to cool.
2. Rinse edamame under warm water if still frozen.
3. Combine rice with slaw mix and edamame. Toss with dressing.
4. Top with torn smoked salmon and garnish with sesame seeds.

QUESTIONS

1. Define the term 'value-added'.
2. Identify the value-added ingredients in this recipe.
3. Discuss the advantages and disadvantages of value-added foods.
4. Find an image of a poke bowl. Assess techniques that have been implemented to make the bowl visually appealing.
5. Research the traditions surrounding poke bowls in Hawaii.
6. Research the nutritional value of edamame beans.

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RECIPE

Lentil bolognese

Prepare and present this meatless version of a traditional Italian meal.

Preparation time 10 minutes **Cooking time** 30 minutes **Serves** 2

INGREDIENTS

1 teaspoon olive oil
½ diced onion
1 celery stalk, finely chopped
½ carrot, peeled, grated
1 garlic clove, finely chopped
300 mL tomato passata
1 tablespoon tomato paste
200 g can lentils, drained, rinsed
1 teaspoon dried thyme
125 g pasta
Salt and pepper

TIP: Replace pasta with zucchini noodles to increase vegetable consumption and reduce kilojoule intake.

METHOD

1. Fill a large pot with water and bring to boil. When boiling, salt the water and add pasta and cook about 10 minutes until tender. Drain.
2. Heat oil in a large frypan over medium heat.
3. Add onion, celery, carrot and garlic and cook for 5 minutes or until softened.
4. Stir in tomato paste and cook for 1 minute to bring out the flavour. Add the passata sauce and ⅓ cup water and bring to the boil. Reduce to simmer.
5. Add lentils and thyme and season to taste. Simmer for 15 minutes or until thickened slightly.
6. Serve with pasta.

QUESTIONS

1. In which countries is pasta a traditional dish?
2. During the manufacture of pasta, wheat flour is extruded into different shapes. Name three different pasta shapes.
3. For a wheat-free diet, investigate and suggest an alternative to a pasta made from wheat flour.
4. Give a reason for following a wheat-free diet.
5. Give reasons for following a vegetarian diet.
6. Explain the difference between a vegetarian and a vegan.
7. Suggest how this dish can be garnished.



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RECIPE



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Seared scallops with pea puree and prosciutto crisps

Prepare and plate this meal in fine dining style. Reduce the scallop to one for an appetiser course or substitute them with some gourmet meat balls.

Preparation time 20 minutes **Cooking time** 15 minutes **Serves** 2

INGREDIENTS

- 6 frozen scallops (no roe)
- 1 slice prosciutto
- ¾ cup frozen minted peas
- 1 teaspoon grated parmesan cheese
- 1 teaspoon butter
- 1 teaspoon olive oil
- Handful of watercress leaves
- ½ lemon (juiced)
- 1 tablespoon extra virgin olive oil
- ¼ teaspoon English mustard
- ½ teaspoon honey
- Salt and pepper to taste

METHOD

1. Preheat the oven to 200 °C.
2. Lay prosciutto on a baking paper-lined baking tray and bake for 5–7 minutes until crispy.
3. Transfer to a paper towel-lined plate. Cool and break into about 6 pieces.
4. Microwave or boil peas until tender. Remove after approximately 2–3 minutes.
5. Drain the water and puree the peas and the parmesan with a stick blender.
6. Whisk honey, mustard, extra virgin olive oil and lemon juice and toss with the watercress.
7. Pat dry the scallops.
8. Heat butter and oil in a frypan. Add scallops and cook for approximately 2 minutes until they develop a golden crust.
9. Turn over and cook for another minute.

Suggested plating

1. Spread, either in a line or in a circle, some of the pea puree onto a warm plate and arrange 3 scallops evenly within that.
2. Top with some watercress salad and prosciutto garnish.

QUESTIONS

1. Research some plating ideas and plan your plating design.
2. List the equipment required for each component in this recipe.
3. Identify the methods used to cook the prosciutto, peas and scallops.
4. What functional property of food is produced from the dressing ingredients?

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RECIPE

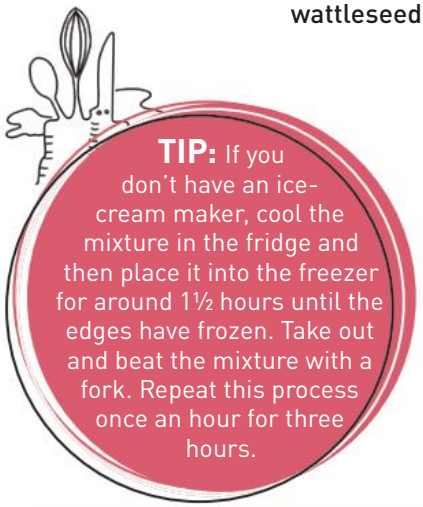
Wattleseed ice-cream

Prepare and decorate this ice-cream using this native bush food ingredient.

Preparation time 30 minutes **Setting time** Overnight **Serves** 4

INGREDIENTS

300 mL thickened cream
300 mL full-cream milk
6 egg yolks
¾ cup caster sugar
1 teaspoon vanilla extract
1 tablespoon ground roasted wattleseed



TIP: If you don't have an ice-cream maker, cool the mixture in the fridge and then place it into the freezer for around 1½ hours until the edges have frozen. Take out and beat the mixture with a fork. Repeat this process once an hour for three hours.

METHOD

1. If using an ice-cream maker, ensure the bowl has been frozen before you begin.
2. Prepare the wattleseed by measuring out a tablespoon into a cup and adding a tablespoon of near-boiling water, then leave to soak for 5 minutes.
3. Pour the cream and milk into a saucepan on medium heat and bring to a simmer, but avoid boiling. Set aside to cool for 5 minutes.
4. In a bowl, whisk the egg yolks and sugar together until thick and creamy. Add the milk mixture, stirring constantly to prevent the eggs from curdling.
5. Pour the mixture back into the pot, return to medium heat and stir continuously with a wooden spoon for around 5 minutes until it forms a custard consistency and sticks to the back of the spoon. Allow to cool.
6. Strain through a sieve into a heat-proof bowl and leave to stand for 5 minutes.
7. Add the prepared wattleseed and vanilla extract and stir to mix.
8. Pour into the pre-frozen bowl of an ice-cream maker and follow the instructions to churn and freeze the mixture into ice-cream.



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QUESTIONS

1. To avoid food wastage, suggest how the leftover egg whites can be used.
2. Identify the equipment required for this recipe.
3. Research other native ingredients that can be used to flavour ice-cream.
4. Describe how you can present and decorate the ice-cream for a dinner party.



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RECIPE

Retro sweet mushroom tarts

Prepare your own sweet pastry to make this old-fashioned Australian recipe. It could be presented at a high tea or a morning tea function.

Preparation time 40 minutes **Cooking time** 15 minutes or overnight **Makes** 24

INGREDIENTS

Tart cases

90 g butter
1 teaspoon vanilla essence
⅓ cup caster sugar
1 egg
1⅔ cup plain flour
⅓ cup raspberry or strawberry jam
2 teaspoons cocoa

Mock cream filling

90 g butter (room temperature)
½ teaspoon vanilla essence
⅓ cup caster sugar
½ cup milk

QUESTIONS

1. Suggest reasons for resting the pastry.
2. Identify the advantages of making your pastry.
3. Assess why this recipe is suitable for a high tea.
4. What does the term 'mock' mean in relation to this recipe?
5. Explain safe work practices when using electrical kitchen appliances.

METHOD

Tart cases

1. Grease two 12-hole shallow patty tins.
2. Beat butter, vanilla and sugar in a bowl with an electric mixer until creamy.
3. Add egg and beat until just combined.
4. Stir in sifted flour with a fork and form a ball.
5. Turn mixture onto a lightly floured surface and gently knead until smooth.
6. Cover and refrigerate to soften the gluten for 30 minutes.
7. Roll pastry onto a floured surface until 2 mm thick. Cut 6.5 cm rounds from pastry and place into prepared tins.
8. To make stalks, roll pastry scraps into an 8 mm diameter sausage and cut into 24 stalks about 1.5 cm in length. Rest them on the spaces between the holes of the patty tin.
9. Bake the cases and stalks in moderately hot oven (190 °C) for 6 minutes, then remove the cases and flatten them with the back of a spoon to remove air bubbles. Return to oven and bake another 6 minutes until tarts are golden brown.
10. Cool on wire racks. Spread about ½ teaspoon of jam inside each shell.
11. Spread or pipe about 2 teaspoons of filling over the jam and then sprinkle with some sifted cocoa.
12. Press stalks into the filling.

Mock cream filling

1. Beat butter, sugar and vanilla until as white as possible.
2. Gradually beat in milk, a teaspoon at a time, until it looks liked whipped cream.

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