

A photograph of a kitchen counter with a blue spray bottle and yellow gloves. The background is a green and white tiled wall. The spray bottle is on the left, and the gloves are on the right. The text is overlaid on the right side of the image.

CHAPTER 1

MANAGING FOOD HYGIENE AND SAFETY – IT'S YOUR RESPONSIBILITY!

Figure 1.1 Kitchen hygiene and safety are essential.

HOW MUCH DO YOU KNOW?

- 1 Compare and contrast food safety and food hygiene.
- 2 Explain how you can effectively ensure the safety of yourself and others in the kitchen.
- 3 List the production skills you require in order to prevent food spoilage and food poisoning.
- 4 Summarise how the Australian government ensures that the food we eat is safe.
- 5 Develop a list of the key pieces of information that must be found on a food label.

1.1 Safety and hygiene in the kitchen

When working in the kitchen, whether the school kitchen, your kitchen at home or the place where you work, it is essential that the food you prepare is safe to eat and that the people preparing the food avoid injury and accidents.

Safety in the kitchen

ergonomics A science that seeks to adapt work conditions and equipment to suit the worker and limit injuries and accidents.

efficient Performing in an organised manner.

When professionals design kitchens, they must think about many important safety aspects. Your school kitchen is no exception.

Ergonomics is about ensuring that each individual worker carrying out the

production skills is working in a safe, **efficient** and comfortable environment. More accidents happen in the kitchen than in any other room of the home. It is therefore very important that we manage the physical environment so that we are able to prevent burns, scalds, cuts, electric shock and any other accidents from occurring.

Sharp and breakable objects

The kitchen is home to many sharp objects. Knives are of primary concern and are a common cause of kitchen injury.

LET'S COLLABORATE 1.1



Develop a list of rules or safety practices to follow in order to prevent accidents when using, storing, sharpening and cleaning knives.

LET'S COLLABORATE 1.2



Figure 1.2 Knives are a common cause of kitchen injuries.

Discuss with your team the occasions when you have cut yourself while using a knife. Explain what you were cutting when this accident occurred. Explain what is wrong with this production skill. Discuss the way in which you would manage the removal of the stone inside an avocado.



Heat and fire safety

The stove is the greatest heat and fire safety hazard in the kitchen. Safety practices that need to be considered are:

- Be extra careful when lighting gas stoves.
- Don't allow excessive gas to be released from the stove or oven. Wait for any gas that has leaked from the stove to disappear before carefully relighting with a match or gas lighter.
- Keep all flammable materials like clothing, hair or aprons at a safe distance from open flames.
- Always keep pot handles turned inwards to prevent spillage from knocks or snagging on clothing.
- Use oven mitts when handling hot items.
- Always remove pot lids by allowing steam to escape away from you. Steam, though invisible, can cause serious burns.
- Be alert at all times when cooking with large quantities of oil. Be aware of spills; never allow water or other liquids near hot oil. If dropped into the oil, they will turn into steam and spray with force.
- In the event of a kitchen fire, it is important to assess the situation and act accordingly. Turn off the heat source if safe to do so. If the fire is confined to a pot or pan, cover it tightly with a lid. Don't attempt to carry the pan away. If the fire is unmanageable, use a fire blanket or fire extinguisher. Never use water or flour, which can cause a grease fire to spread.
- Always keep a fire extinguisher accessible; extinguishers should be tested on a regular basis to ensure that they work properly.

LET'S COLLABORATE 1.3



In a pair, draw a diagram of a stove top showing each part of the stove. Annotate the diagram and show how pots should be placed and used on the stove.

Electrical equipment

electrocution Death by electric shock. (Non-fatal exposure to electricity is an electric shock.)

Electrical fires and **electrocution** can result when equipment is not used properly. Never use electrical appliances near water.



Figure 1.3 Think about how many times you have done this. Always make sure the toaster is unplugged from the wall.



Investigate IT 1.1

Visit the SafeWork SA website (via the link at www.cambridge.edu.au/foodyou2weblinks) and complete the activity in the Virtual Hotel by entering the kitchen. See how good you are in the kitchen. Discuss whether or not you are up to scratch to work in the hospitality industry.

DESIGN THINKING

Design brief: sandwich cutting

You have been asked to prepare gourmet open sandwiches for a lunch for the teachers at your school. You need to create a range of four gourmet open sandwiches using a selection of knife skills to show the attractively served fillings.

Investigate

- 1 Create a mind map using inspiration or an online mapping tool to investigate at least eight different gourmet sandwich fillings and breads.
- 2 For each option, explain why you think it is an appropriate option to suit the brief.
- 3 Select your four sandwiches. Explain why you have chosen each option and what knife skills this sandwich will allow you to demonstrate.
- 4 Develop three criteria for success that can be used to critically evaluate the sandwich selection.
- 5 Prepare your gourmet sandwiches.

Evaluating and analysing

- 1 Critically evaluate your sandwiches using your previously established criteria for success.
- 2 Critically evaluate your safety practices by answering these questions:
 - a Were the correct safety practices followed? Explain the reasons for your response.
 - b Discuss whether you used your knives safely. Explain the reasons for your response.
 - c Summarise how you managed hygienic work practices throughout the production and clean up.

1.2 Kitchen and personal hygiene

kitchen hygiene The prevention of illness and the maintenance of health in the kitchen.

personal hygiene Ensuring good cleaning and washing practices to prevent illness and maintain the health of food and food handlers.

bacteria Single-celled micro-organisms responsible for decay, fermentation and ultimately spoilage of food.

micro-organism A tiny single-celled organism that is only visible with a microscope. Three types connected with food are yeast, moulds and bacteria.

Kitchen hygiene and good **personal hygiene** are important, as they help to control the spread of harmful germs.

Kitchen hygiene

There are many surfaces in the kitchen where harmful **bacteria** and **micro-organisms** can live, grow and multiply.



Figure 1.4 Kitchen surfaces must be cleaned after food has been prepared. It is important to be sure that you 'clean as you go'.

LET'S COLLABORATE 1.5

Explain what it means to 'clean as you go'. Discuss as a class why this is important.



Figure 1.5 Raw meat, poultry, fish and other raw foods can easily cross-contaminate other foods. Utensils, kitchen surfaces and your hands must be thoroughly washed before contact with other foods, especially cooked and ready-to-eat foods.

LET'S COLLABORATE 1.4

As a class, make a list of the surfaces where bacteria can grow in the kitchen. For each of these surfaces, suggest a food item that might come into contact with this surface.



Tasty Trivia

Tea towels and dish cloths can be a source of cross-contamination, so only use them if they have been cleaned and dried.



Figure 1.6 Kitchen rubbish bins are a breeding ground for germs, especially in summer.

Personal hygiene

A person who handles food is responsible for ensuring good personal hygiene. It is important that food, or surfaces that come into contact with food, are not contaminated by contact with the food handler's body or clothing. Possible personal contaminants include:

- hair
- saliva
- mucus
- sweat
- blood
- fingernails
- clothes
- jewellery
- Band-Aids or bandages.

LET'S COLLABORATE 1.6

It is not only a chef who handles food. As a class, make a list of all of the other food handlers in the process of food preparation from 'paddock to plate'.



Figure 1.7 Always wash your hands thoroughly before preparing food.

One of the best ways to ensure personal hygiene and prevent the contamination of food is to wash your hands well. Germs can stay alive on our hands for up to three hours. In this time they can spread to anything and everything that we touch. Regular hand washing is important when preparing food, between the handling of raw foods, going to the toilet, touching rubbish or the rubbish bin, coughing or sneezing.

Tasty Trivia

The numbers of germs on your fingertips doubles after you use the toilet. Half of all men and a quarter of women fail to wash their hands after they have been to the toilet.

LET'S COLLABORATE 1.7

Develop a list of other personal hygiene tips that are important for the kitchen. When you develop your list, think about ill health, sores, clothing and fingernails. Share your list with a partner and add any tips that you have missed to each of your lists.



Investigate IT 1.2

Use a home computer, not your school notebook, to check out YouTube. Find two videos that relate to food hygiene and safety, and share your findings with the class.

Activity 1.1

Being clean

Design a video presentation to inform Year 7 students who are new to Food and Technology about the importance of personal and kitchen hygiene. In your video clip be sure to demonstrate hand washing and discuss the importance of an apron and other protective clothing. You could use Animoto, Vimeo, Movie Maker or even try Glogster to complete this activity.

How to wash your hands

We all think we know how to wash our hands, but many of us don't do it properly. Rinsing your fingertips under cold water is not sufficient to prevent food contamination. When you wash your hands, remember to:

- use warm water
- wet your hands before applying soap – this prevents irritation
- rub your hands vigorously for approximately 15 seconds (sing 'Happy Birthday')
- wash both sides of your hands, down to the wrists, around the thumb, between each finger and around and under the nails
- rinse with clean water
- dry your hands thoroughly – use a clean, dry towel, paper towel or an air dryer if it is available.

DESIGN THINKING

Design brief: desserts

Most of us like a sweet treat now and then. This brief requires you to investigate and generate a variety of after-dinner treats that could be eaten with coffee. Select one and then produce it. The item that you choose should have appealing sensory properties and involve baking in the oven, chilling in the fridge, use of an electric appliance and should be completed in the time that you have available for practical classes.

Investigate

- 1 Create a list of personal hygiene practices that must be followed in the kitchen. From this list, develop a web page that highlights safety issues.
- 2 Create a list of kitchen hygiene practices that must be followed in the kitchen.
- 3 Summarise the cleaning/sanitising that needs to occur in the kitchen.
- 4 Write three criteria for success questions.
- 5 Develop a list of constraints and considerations that you need to take into account when preparing your chosen dessert.

An example recipe – Caramel Butternut Cheesecake – is provided on the following page. Study this recipe to determine if it suits the time constraints that you have in class.



Tasty Trivia

Damp hands spread more germs than do dry hands – 1000 times more germs, in fact.

CARAMEL BUTTERNUT CHEESECAKE

Main tools and equipment

Wooden spoon, springform pan, electric beater, pastry brush


Production skills


Melting, crushing, beating, chilling


Cooking processes

Baking

SERVES 12









 Preparation: 45 minutes

 Cooking: 40 minutes baking, 4 hours chilling

 Serving and preparation: 5 minutes

Total time: 5 hours, 30 minutes

Ingredients

1 tablespoon butter, melted 	250 g packet Butternut Snap biscuits, crushed 	125 g butter, melted 	2 x 250 g packets cream cheese, at room temperature 
300 ml sour cream 	100 g caster sugar 	3 eggs, lightly beaten 	380 g Nestlé Caramel Top'n'Fill 

Method

- 1 Preheat oven to 160°C.
- 2 Brush a 24 cm springform pan with melted butter to lightly grease.
- 3 Place the crushed biscuits into a bowl, add the butter and stir well until combined.
- 4 Place the biscuit mixture into the prepared pan. Press firmly over the base and side.
- 5 Cover with plastic wrap and place in the fridge for 15 minutes to chill.
- 6 Place the cream cheese, sour cream and sugar in a bowl. Beat with an electric beater until smooth.
- 7 Add the eggs and beat until well combined.
- 8 Pour half of the cream cheese mixture into the biscuit base.
- 9 Top with caramel.
- 10 Pour over remaining cream cheese mixture.
- 11 Bake for approximately 40 minutes until set.
- 12 Leave the cheesecake in the tin until cooled.
- 13 Place in the fridge for 4 hours or overnight to chill.
- 14 Cut into wedges and serve.



Evaluating and analysing

- 1 Copy and complete the table below to assess your safety and hygiene practices. Insert the lists that you prepared previously in the first column.
- 2 Analyse how you managed your own work practices in the kitchen.
- 3 Explain three things that worked well.
- 4 State three improvements that you could make.
- 5 Complete each of your criteria for success questions.

Safety and hygiene practice	Completed	Not complete (why was this practice not completed?)	Evaluation of the importance of this practice
Personal hygiene			
Safe work practices			
Cleaning/sanitising practices			

Figure 1.8 Safety and hygiene practices.

REFLECT ON LEARNING

- 1 Define the term 'ergonomics'. Explain how ergonomics ensures that a kitchen is safe.
- 2 Create a list of accidents that could occur in the kitchen.
- 3 Gas can be a safety issue in the kitchen. Discuss this statement.
- 4 Electrical equipment and electrical appliances should never mix. Explain why this is the case.
- 5 Explain the role that a food handler plays in ensuring that food is safe.
- 6 Discuss the reason why singing 'Happy Birthday' can help in preventing food contamination.

1.3 Food poisoning

food poisoning

A common illness, usually mild but sometimes deadly, caused by eating contaminated food or drink.

Typical symptoms include nausea, vomiting, abdominal cramping and diarrhoea that occur suddenly (within 48 hours) after contamination.

cross-contamination

Indirect contamination of food caused by contact with a raw food or non-food source such as clothes, cutting boards or knives.

Food poisoning is a serious health problem caused by poor personal hygiene on the part of food handlers, poor storage of food or **cross-contamination**. It is important that a person who is handling and preparing food protects those people who are going to eat the food from getting sick.

Food poisoning causes vomiting, diarrhoea and stomach cramps. It's a very unpleasant illness, but one from which most people

recover. However, for some people, especially young children and the elderly, it can be life threatening or leave sufferers with serious health problems.



Figure 1.9 Food with visible mould as shown in this picture should never be consumed.

Activity 1.2

Preventing food poisoning

- 1 Develop a list of rules or recommendations that should be followed in the kitchen in order to prevent food poisoning.
- 2 For each rule, explain why this is an important practice in the kitchen. Share your list with a partner. Add to your own list if there are some that you have missed.
- 3 Finish the following sentence, considering your own personal hygiene practices: 'When in the kitchen, I need to improve my personal hygiene practices by ...'

How do bacteria grow?

Food poisoning bacteria can grow and multiply very quickly in the right conditions. The following factors can affect the growth of bacteria:

- time
- temperature
- food
- moisture
- oxygen
- acidity pH level.

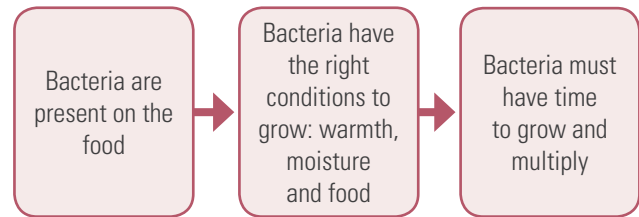


Figure 1.10 The food poisoning chain.

Over five million cases of food poisoning could be avoided in Australia each year if all food handlers followed three simple steps:

- 1 Control temperature.
- 2 Kill harmful bacteria.
- 3 Prevent cross-contamination.

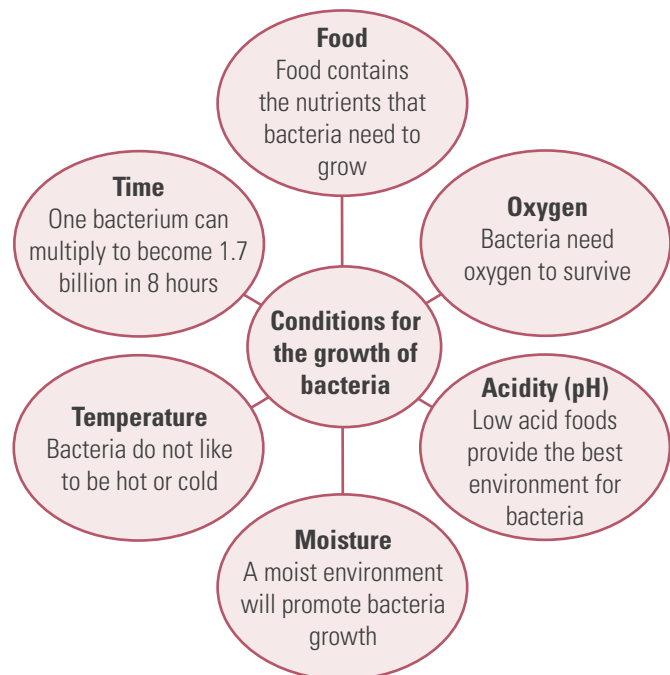


Figure 1.11 Conditions for the growth of bacteria.

Step one: Control temperature

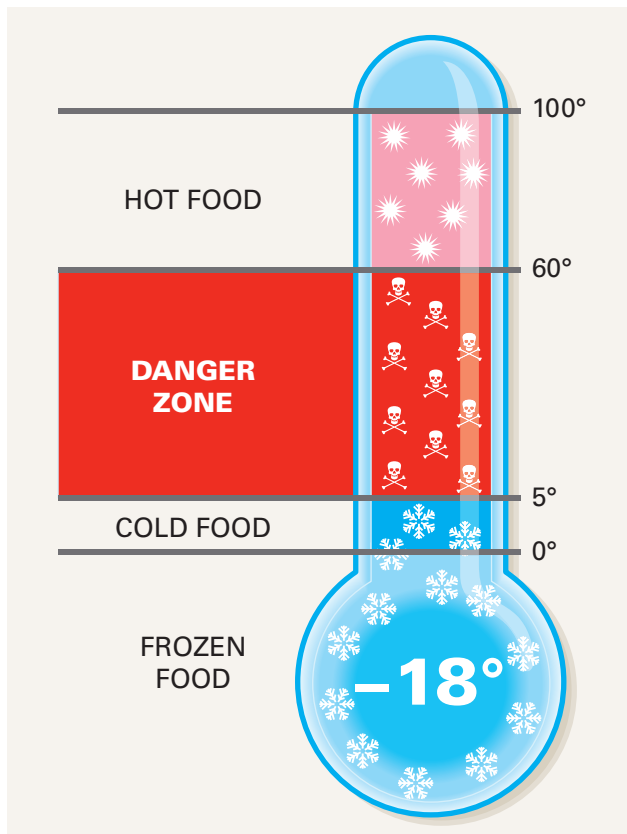


Figure 1.12 The temperature danger zone.

One cause of food poisoning is bacteria. Bacteria in food grow to unsafe levels when the food is warmer than 5°C and cooler than 60°C. This is the 'temperature danger zone'. Keeping food at the right temperature will prevent food-poisoning bacteria from multiplying.

Activity 1.3

Cool and reheat?

Potentially hazardous foods for bacteria growth are those that have cooled and are then reheated.

- Develop a list of foods that are likely to be cooled and then reheated:
 - in the school kitchen
 - at home.
- Look at the list of foods that you have developed. Use your knowledge of the food groups and suggest the types of food that are potentially hazardous.
- Once food has dropped in temperature to 60°C or below, bacteria will multiply rapidly as the

food cools to 5°C. The longer the food takes to cool, the greater the number of bacteria.

- Design a computer-generated flow chart outlining the ways in which you can prevent bacteria from multiplying. Explain why each stage in the flow chart is critical in controlling the multiplication of bacteria.
- Make a list of safe ways to rapidly cool food.
- Reheating food also increases the risk of bacteria. Food-poisoning bacteria start multiplying when chilled food is reheated above 5°C. At what temperature will bacteria stop multiplying?
- If it takes over two hours to reheat a food product, describe what will happen to the bacteria present in the food once it is eaten.
- Design a computer-generated flow chart outlining ways to reheat food. Include critical temperatures and suggest why time is also a critical factor that needs to be considered.
- Robert has leftover pizza in the fridge and he plans to eat it for lunch. He purchased the pizza last night from the local pizza shop. The pizza topping includes extra cheese, bacon, ham, salami and egg. To reheat the pizza, Robert places it in the oven at 55°C. He forgets it while he plays a video game, but after two hours he remembers that his pizza is heating in the oven and eats it. Evaluate this scenario in terms of its potential for the development of food-poisoning bacteria. In your evaluation consider:

a	food products that	c	time
	are of high risk	d	cooling and
b	temperature		reheating.





Figure 1.13 Correct temperatures for cooked meats.

Step two: Kill harmful bacteria

In order to kill harmful bacteria it is important to cook food properly. When cooking meat products like chicken, mince, meat with bones, hamburgers, stuffed meats and sausages, ensure that they are thoroughly cooked and that the meat juices run clear.



LET'S COLLABORATE 1.8

Explain what you think it means when people say that meat juices should 'run clear'. Discuss with a partner how you can check to see if the juices are clear.



LET'S COLLABORATE 1.9

Create a list of cuts of meat that contain bones. Suggest the reasons why you think these require longer cooking times.

Step three: Prevent cross-contamination

Bacteria can spread if raw meat or poultry touches or drips onto **ready-to-eat foods**. This is dangerous because ready-to-eat foods often receive no further cooking and therefore the bacteria are not killed.

ready-to-eat foods

Foods that have been processed before they reach the home kitchen. They need limited (if any) further preparation.



LET'S COLLABORATE 1.10

As a class, develop a list of ready-to-eat foods that you eat in your house. Explain the reason why these foods are so popular.

To prevent cross-contamination it is important to:

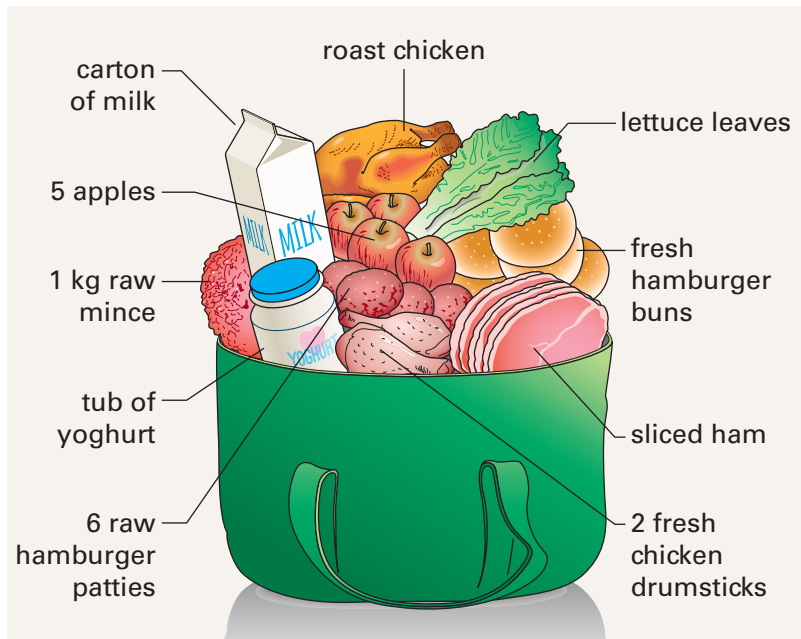
- separate raw and cooked foods
- store raw foods covered at the bottom of the fridge
- keep the kitchen and utensils clean
- wash hands with soap, rinse and dry thoroughly before and after preparing raw food. (Remember to sing 'Happy Birthday'!)

Activity 1.4

Amelia's shopping bag

Amelia has just been shopping. Considering her grocery bag, complete the following:

- 1 Make a list of the potentially hazardous foods in Amelia's shopping bag.
- 2 Highlight for Amelia the items that need to be cooled quickly. Explain why this is the case.
- 3 Create a visual display that could be placed in the supermarket or given out as a brochure that shows shoppers how to correctly store their purchases. Use your imagination and design a fridge and place each item in it – this could be a computer-generated image.
- 4 Explain why you have placed each item in its position.



APPLY DESIGN THINKING

Look at the list of ingredients that Amelia has in her shopping bag. Develop a food item that you could produce to eat as an afternoon school snack.

Tasty Trivia

Illness from food poisoning is becoming more common as our lifestyles change. The more we eat out and purchase food that requires very little preparation, the higher our incidence of food poisoning.

LET'S COLLABORATE 1.11

Summarise how our lifestyle has changed. Discuss what has happened to food preparation and the places where we eat food. Think about and discuss the number of meals that

from scratch Prepared from fresh ingredients, without the use of anything pre-cooked or packaged.

you have had at home in the last week, fortnight and month that were cooked **from scratch**. Compare as a class.

The symptoms of food poisoning are many and varied; they depend on the type of bacteria that has caused the illness. Symptoms can include:

- nausea
- stomach cramps
- diarrhoea
- fever
- headaches.



LET'S COLLABORATE 1.12

Have you ever had food poisoning? Discuss your symptoms with a partner. Was their experience similar?

The different types of food poisoning

There are two types of food poisoning – toxic and infective.

- **Toxic food poisoning:** This is caused by the action of a **toxin** released by bacteria found in food prior to it being eaten, or in the body after it is eaten.
- **Infective food poisoning:** This is caused by living food-borne pathogens that invade the tissues of the body.

toxin A poisonous substance produced by living cells or organisms that is active at very low concentrations.

Activity 1.5

Research assignment

Working collaboratively as a group, carry out an internet search to investigate the different food-poisoning bacteria. Complete the table below to summarise the information that you find. Start with these sites and see what else you can find (which can all be accessed via the link at www.cambridge.edu.au/foodyou2weblinks):

- Food Safety Information Council
- Beef and Lamb (carry out a search on this website by using the key word 'safety')
- NSW Food Authority.

Food poisoning bacteria	Effect/symptoms that are evident in humans	Food sources	Provide an explanation of the best way to prevent the micro-organism from making you sick	Microscopic picture of the bacteria
<i>Salmonella</i>				
<i>Campylobacter</i>				
<i>Listeria monocytogenes</i>				
<i>Escherichia coli (E coli)</i>				
<i>Staphylococcus aureus</i>				
<i>Clostridium botulinum</i>				
<i>Clostridium perfringens</i>				
<i>Bacillus cereus</i>				

Figure 1.14 Food bacteria

REFLECT ON LEARNING

- 1 Explain how food poisoning can occur in the home or in the school kitchen.
- 2 Develop a list of the symptoms of food poisoning. State the individuals who are most at risk of having these symptoms.
- 3 Describe the conditions required for the growth of bacteria.
- 4 Suggest and explain three ways that food poisoning can be prevented.
- 5 State the temperature danger zone. Explain how this can be an issue for a food handler in terms of the growth of bacteria.
- 6 Name, compare and contrast the different types of food poisoning.



1.4 Food contamination

contaminated Unsafe to eat due to contact with chemicals, foreign objects or bacteria that are harmful for people to eat.

Food can easily become **contaminated** by a number of different items. There are three main types of food contamination:

- chemical
- physical
- microbiological.

Tasty Trivia

Bottled water may account for 12% of infections by the bacterium *campylobacter jejuni*, the biggest cause of food-borne infection in the western world.




Type of contamination	Explanation	Examples of contaminants
Chemical	This occurs when harmful chemicals contaminate food. Incorrect storage and cleaning is often the reason why chemical contamination occurs.	Dishwashing detergent, disinfectants, pesticides and naturally occurring toxins and poisons. 
Physical	This occurs when foreign objects enter food. Good cleaning practices, personal hygiene and protective clothing can prevent this type of contamination.	Wood, glass, Band-Aids, hair, jewellery, cigarette butts, insects or animal faeces. 
Microbiological	This occurs when micro-organisms get into food and poison or spoil it.	There are five different types of micro-organisms: yeast, mould, viruses, protozoa and bacteria. 

Figure 1.15 Food contaminants.

LET'S COLLABORATE 1.13

Have you found a physical contaminant in your food? What was it and how do you think it got there?



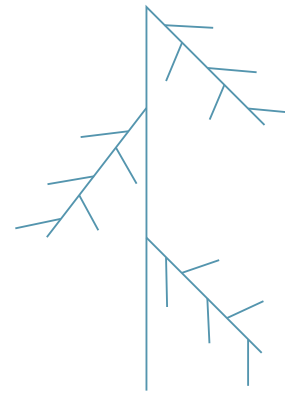
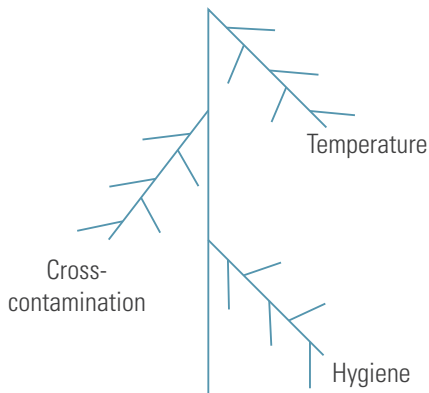
Investigate IT 1.3

The NSW Government has a website where you can detail your food-borne illness complaints. Log on to the Food Authority site (via the link at www.cambridge.edu.au/foodyou2weblinks) and check out some of the health issues suffered as a result of food poisoning or food contamination. Find out if your state government provides information on food-borne illnesses and how to make a complaint.

Activity 1.6

Food poisoning

- 1 Complete a fishbone chart like this one to explain how temperature, hygiene and cross-contamination can result in food poisoning.
- 2 Develop your own concept map to summarise how food poisoning can be avoided or prevented.
- 3 Complete a fishbone chart to explain how food contamination can occur.
- 4 Develop your own concept map to summarise how food contamination can be avoided or prevented.



Activity 1.7

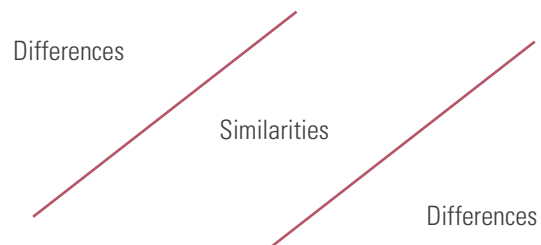
Develop your own blog or web page

Food handlers can prevent food poisoning by practising good personal hygiene. Develop a web page or blog with links that could be used in the food industry to show food handlers how to practise good personal hygiene. The site Webs will get you started (via the link at www.cambridge.edu.au/foodyou2weblinks). In your presentation you should include:

- an explanation of what it means to have good personal hygiene
- a list of rules to ensure that food handlers follow adequate personal hygiene practices
- a description of how food poisoning and food contamination can occur
- a discussion of the critical temperature limits and how food should be stored, cooled, cooked and reheated.

REFLECT ON LEARNING

- 1 List the different types of food contamination.
- 2 Complete a comparison alley to show the differences and similarities between these types of food contamination.



- 3 Dishwashing detergent is potentially harmful because ... (complete sentence).
- 4 Suggest how foreign objects can enter food. Develop a list of 10 foreign objects that can be found in food.
- 5 Name and describe the different types of micro-organisms.

Safe food in Australia

The food supplied to us in Australia is renowned for being extremely safe for consumers. To ensure that we have a safe food supply, a number of very strict regulations and standards exist at all levels of government.



LET'S COLLABORATE 1.14

Explain the reasons why it is so important to ensure our food supply is safe for consumers.



Investigate IT 1.4

Use the internet as a research tool to find out about the way in which your state and local governments ensure that the food you consume is safe. Complete the flow chart below using the information that you have found. Federal government:

- Food Standards Australia and New Zealand (FSANZ)
- Food Standards Code including Food Labelling regulations
- Australian Quarantine Inspection Service (AQIS).

My state government ensures the food I eat is safe by:	My local government ensures the food I eat is safe by:
↓	↓
↓	↓
↓	↓

DESIGN THINKING

Design brief: employed by local government

You have been employed by your local government to prepare a food item and demonstrate the safe preparation of this food item at the local community festival. The idea of the food item and the demonstration is to show how food should be prepared safely.

- 1 Apply the design process to choose a food item that you could prepare.
- 2 Prepare the food item.
- 3 Evaluate how successful you think you would be in terms of your level of skill and knowledge in demonstrating safe food handling to the local community.



Find out about the product recalls that have occurred in Australia in the last 30 days at the Food Standards site (via the link at www.cambridge.edu.au/foodyou2weblinks).



LET'S COLLABORATE 1.15

Where have you seen food recalls advertised? What food recalls have you seen advertised? What should you do with foods that have been recalled?

Food recalls

A food recall occurs when food that poses a safety hazard to consumers is removed from sale, distribution and consumption. Food is recalled at any time when it poses a possible public health and safety risk. Food recalls also occur if a food product is incorrectly labelled; for example, an unlabelled food allergy danger. Food Standards Australia and New Zealand (FSANZ) coordinates food recalls in Australia to ensure our safety.



Figure 1.16 Three million Mars and Snickers bars were destroyed in 2005 after an extortionist claimed that seven chocolate bars in New South Wales had been poisoned.

1.5 Food labelling

process To change a food product with a series of steps. For example, peeling, cutting, boiling and putting into a can.

By law, food that is sold in Australian shops must be of good quality and safe to eat. Foods that are **processed**, and therefore not fresh, must carry a food label.

Food packaging helps to prevent food from spoiling and ensures that it is safe to eat, but it is the food label that provides us with so much more information. Labels identify the food contained inside the package and provide us with information that helps us to decide whether we want or are able to eat the food.

Many people suffer from **allergies** and this may prevent them from eating certain foods. (See Chapter 3 for more information on food allergies.)

allergy An abnormal reaction of the body to an allergen, creating itchy eyes, runny nose, wheezing, skin rash or diarrhoea.

It is the **Food Standards Code** that governs the information relating to a food label.

Food Standards Code
A collection of individual food standards for Australia.

Activity 1.8

Country of origin labelling

Use the FSANZ website (via the link at www.cambridge.edu.au/foodyou2weblinks) to investigate 'country of origin' labelling.

- 1 Explain what the country of origin label is.
- 2 Discuss why you believe that it is important to have this type of labelling requirement.
- 3 Find out what the following terms mean:

a product of	d made in
b produce of	e manufactured in.
c produced in	
- 4 Sometimes the terms are mixed (e.g. 'made in Australia from imported products'). Evaluate the importance of this information.





Figure 1.17 Elements of a food label.

DESIGN THINKING

Design brief: jam making

Jam making is a method of food preservation that helps prevent food spoilage. Fruit, sugar and water are used to produce vegetable and fruit food items that should keep for a long period of time. Jam making is usually carried out when vegetables or fruit are in season and are at their best in flavour and quality.

Prepare a jam that can then be labelled according to the Australian requirements. A basic jam recipe is provided on the next page to get you thinking.

Investigate

- 1 Use the Market Fresh website (via the link at www.cambridge.edu.au/foodyou2weblinks) to begin this investigation.
- 2 Investigate fruits that are appropriate for jam making.
- 3 When making jam, lemon juice is sometimes needed. Investigate the function of lemon juice in the setting of the jam.
- 4 Fresh fruits contain pectin. Detail the function of pectin in jam making.
- 5 When preparing jam it is important to test the product to see if it has formed a gel. Explain what gel is.
- 6 Investigate one of the following tests that can be used to test to see if a gel has formed:
 - a cold plate test
 - b flake test
 - c temperature test.

STRAWBERRY JAM

Main tools and equipment

Saucepan, jars, wooden spoon and ladle

Production skills

Jam making, sterilising

Cooking methods

Boiling, simmering

Ingredients

1.5 kg strawberries, hulled and halved	1.5 kg white sugar	Juice of ½ a lemon
		

Method

- 1 Sterilise jars and lids by washing them in hot soapy water and then rinsing in hot water, then place in 100° oven for 20 minutes.
- 2 Place strawberries in a saucepan and stir through the sugar.
- 3 Cook over a low heat until the sugar softens the fruit.
- 4 Add the lemon juice then cook over a medium heat, stirring constantly, until the fruit is soft.
- 5 Continue to cook the mixture until the fruit is nearly all dissolved and jam coats the back of a spoon.
- 6 Complete a test to see if a gel has formed.
- 7 Ladle the jam into the jars. Allow to cool, then seal with the lids.

MAKES 3 × 330 g JARS



Preparation: 10 minutes



Cooking: 10–20 minutes



Serving and preparation: 5 minutes

Total time: 25–35 minutes



Evaluating and analysing

- 1 Explain why is it important that the jars used to store the jam are:
 - a well cleaned
 - b airtight.
- 2 Indicate the information that should appear on the label of a bottle of jam.
- 3 Prepare labels and fix them to your jars of jam.

REFLECT ON LEARNING

- 1 Summarise the regulations that exist in Australia to ensure that food is safe to eat.
- 2 Compare and contrast the roles of the federal, state and local governments in protecting our food supply.
- 3 Explain the function of a food recall.
- 4 Discuss the reasons why all processed food products must be labelled.
- 5 Develop a list of the information that must be on a food label. Suggest reasons why this information is important for us as consumers.

LOOKING BACK

- 1 Food safety and hygiene are essential in order to ensure the safety of all kitchens and that the food we consume is free from contamination.
- 2 Kitchen hygiene and personal hygiene are ways in which a food handler can help to prevent contamination of food. Washing hands is the first step to maintaining Australia's reputation for having a clean and safe food supply.
- 3 Poor personal hygiene and incorrect storage of food can result in food poisoning. It is important to remember that bacteria are always present on food, and it is up to the food handler to ensure that bacteria do not have the right conditions for growth and multiplication.
- 4 The two types of food poisoning that cause illness are toxic and infective food poisoning. Food can easily become contaminated by chemical, physical and microbiological contaminants that result in unsafe food and illness.
- 5 The three levels of government – federal, state and local – work together to ensure that our food is safe and free from harm.
- 6 A number of measures, such as food labelling and food recalls, are used to assist governments in ensuring this safe food supply.

TEST YOUR KNOWLEDGE

Multiple choice

- 1 Food safety aims to protect:
 - a the food handler
 - b the food handler and the food items being produced
 - c the animals that enter the kitchen
 - d the kitchen equipment.
- 2 Hands must be washed correctly before preparing food. When washing your hands, remember to wash:
 - a your fingertips
 - b both sides of your hand and around the thumb
 - c between each finger and under the nails
 - d all of the above.

True/false

- 1 Food poisoning occurs as a result of physical contamination.
- 2 The federal government alone is responsible for ensuring a safe food supply.
- 3 Food labelling protects consumers who have food allergies.

Short answer

- 1 Kitchen safety helps to reduce the number of accidents involving food producers. Look at Figure 1.18 and suggest a reason why injuries to each of the indicated body parts could occur.
- 2 Develop a list of safety procedures to follow to avoid each of these injuries.
- 3 Explain the different types of food poisoning and food spoilage. Summarise the causes of both food poisoning and food spoilage.
- 4 Annotate the food label on the next page to indicate the information that must be displayed. Suggest a reason why each piece of information is important.

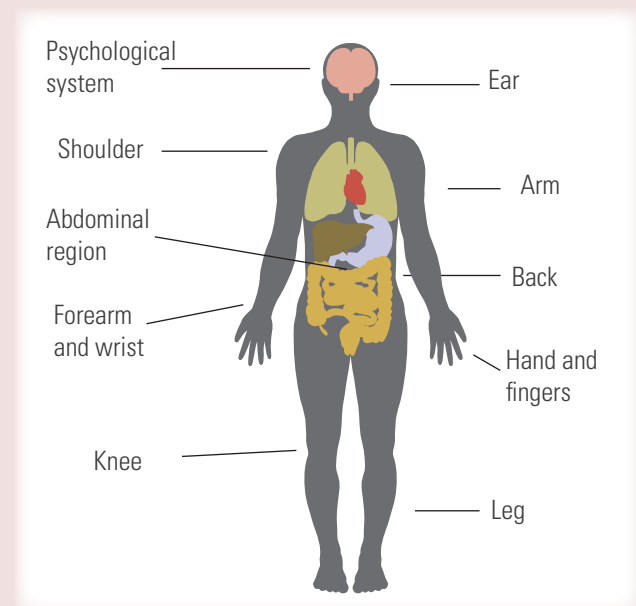


Figure 1.18 Injury hotspots.



Extended response

- 1 Define the term 'food poisoning'.
- 2 List and explain how two different types of food-poisoning bacteria can cause illness.
- 3 According to the food recall (right), discuss why this product is not safe for consumers.
- 4 Explain how a food recall occurs.
- 5 Describe how food poisoning can occur via cross-contamination.
- 6 Define the term 'temperature danger zone'. Suggest what may occur to this food product if it is stored within the danger zone.
- 7 Develop a list of guidelines to follow to prevent food poisoning and to ensure that food is safe to eat.

HodHod Halva Shekari with Pistachio

Aust Aria has recalled HodHod Halva Shekari with Pistachio from independent stores in NSW due to Salmonella contamination.

Date notified to SANZ:	17/06/2013
Food type:	Confectionery
Product name:	HodHod Halva Shekari with Pistachio
Package description and size:	400 g plastic container
Date marking:	Best before 10/09/13
Country of origin:	Iran
Reason for recall:	Salmonella contamination
Distribution:	Independent food stores in NSW
Consumer advice:	Food products contaminated with Salmonella may cause illness if consumed. Consumers should not eat this product. Any consumers concerned about their health should seek medical advice, and should return the products to the place of purchase for a full refund.
Contact:	Aust Aria (02) 9645 6003

1.6 Mark Sweeting

Manager – Rational Australia

When was your interest in your area of expertise first nurtured? Explain why you pursued this career.

My first job at the age of 13 was for my local newsagent selling *The Herald* newspaper on a busy street corner in Melbourne. I was quick to realise that earning three cents a paper commission was hard work for little return, so I started selling magazines to increase my commission, taking orders from customers for their magazines and delivering them the following day with their paper. This proved more lucrative than selling just papers. The result was: my \$14 a week job was now earning me \$40 a week. Back in 1984 that was a lot of money and I guess that was my first experience in sales.

At the age of 16, I was introduced to the world of hospitality and cooking. Kitchen terminology was new to me but I picked it up pretty quickly. At the time I had no idea that working casually at McDonald's while studying for my HSC would set the scene for my future career and allow me to enter the exciting world of professional cookery and food service.

I was extremely fortunate to do my cookery apprenticeship with Hilton Melbourne. It was a four-year apprenticeship and the training back then was to continually rotate every three months through the six kitchen outlets of the hotel. There was always plenty of experience to draw from. For the next 13 years I worked for them around Australia.

The next step in my culinary journey was to join Comcater Pty Ltd, which I am still with today, an importer and distributor of the world's best catering equipment and services. Over my 15 years I have held various roles, including demonstration chef, product management, national accounts, and sales and marketing. I am currently manager of Rational Australia. I lead a national team of nine specialist Rational chefs. Our goal is to pass on our knowledge of kitchen operations and offer catering solutions.

My roles have given me the opportunity to travel the world, meet and work with many international chefs, food scientists and nutritionists, and I have



seen more kitchens than I ever dreamed of – and at all times involved in an industry I love.

Professional cookery and business have many similarities: both require a fine mix of order and chaos, a strict code of conduct, punctuality, loyalty, teamwork and discipline. All of these factors are equally key ingredients to producing consistently great results.

Describe your role model in the industry.

I have had many industry role models at different development stages of my career. In the kitchens it was the many European chefs that I trained under. I was culinarily inspired by the likes of Marco Pierre White, Anton Mosimann and the Roux brothers. Today Jamie Oliver, Bill Gates and Richard Branson are all great role models as they have had major influences in both their industries and the wider community.

Discuss the most rewarding aspects of your career.

First, it is always filled with variety, no two days are ever the same. From primary production to the plate, there are so many different career avenues related to food that you can never stop learning or experiencing new facets of the industry. Second, the people. Everyone who works in these industries has a common interest and passion for food and wine. Many will have different roles over time but few actually leave it!

Explain the challenges you face in your job.

The biggest challenges probably relate to trying to find solutions to other people's food-service challenges and then working with them to develop a solution that suits their individual needs using Rational. The individual challenges in achieving a result are factors such as cuisine style, skill level of employees, time, space, utility costs, food and labour costs and nutritional benefits.

Is there such a thing as a 'normal' day in your work? Outline some things that you do in a day.

'Normal' for me means variety and change in my line of work, as we are guided by the needs and wants of our customers and that of their individual customers. That can at times change on an hourly basis. An example of a day can be as follows:

- Conduct deli staff training, cooking chickens at a major national supermarket chain.
- Visit a 60-bed nursing home to discuss plans for a new commercial kitchen; meet with facility management, chef and nutritionist.
- Meet with our equipment dealers to review monthly sales activity and forward planning.
- Meet the executive chef from Hilton to discuss staff training proposal for a new banquet kitchen.
- Meet the catering manager at a private hospital to discuss HACCP logging in Rational ovens.
- Conduct a cooking demonstration on Rational for new café in our demonstration kitchen.

Identify the opportunities this career has afforded you.

To date, my chosen career path has created many opportunities that I would never have dreamed about when I did my first shift at McDonald's. I have travelled overseas 27 times to 15 countries, and visited kitchens, cooked and met people from all walks of life who work in the food-service industry. I have been exposed to many different market segments and the personalities within them: primary producers, food processors, food manufacturers and food retailers, and of course the greater hospitality industry, the common element being in food.

What are your career goals for the future (e.g. in five years' time)?

My future goal at this stage is to continue to be involved in senior roles within the food service and hospitality sectors, as it is an industry I love. In another 5–10 years, hopefully I am a managing director or CEO of a large company, or I may have my own business as a food-service consultant, passing on my knowledge to others.

Explain how you suggest students pursue a career in the type of work that you are doing (e.g. work experience, advice from others, working hours, jobs available in rural/metropolitan areas).

For students who are contemplating cooking, hospitality or a career in food service, I would highly recommend that you complete Year 12, as this helps you obtain jobs later and especially if tertiary study is required. Also, get casual work experience as soon as you can – you never stop learning so it is never too early to start.

If commercial cookery is your interest, talk to chefs and see why they love it, what they do and the challenges they face, such as the long hours at work when most people are relaxing. If you are still passionate then enrol in an apprenticeship with a large hotel or well-known restaurant. Aim at the top from day one.

Outline the qualifications needed to complete this type of work.

There are various qualifications that can give you an entry into a career that involves food. Some of these are Certificate III in Commercial Cookery (chef qualification), Bachelor of Business (Culinary Management or Tourism and Hospitality), marketing, food technology, meat processing or baking and pâtisserie.

What role has Home Economics played in your career?

Home Economics was just a fun subject in Year 8 for me – and a nice break from Maths and Science – and something I was quite good at. Little did I know that it was going to lead me into a diverse and rewarding career that I have enjoyed for the last 30 years!