

CHAPTER 1

Working safely and responsibly

ACCESS PRIOR KNOWLEDGE

- 1 Explain why it is so important to observe personal hygiene practices when preparing food.
- 2 Go to the tap and wash your hands. Observe and analyse this personal hygiene practice. Do you think that this is a good practice? Explain the reason for your answer. List the areas of improvement that are required.
- 3 Food needs to be safe to eat. Discuss what this means. Provide an example of a safe food.
- 4 Summarise the hygiene practices that are needed to prevent the cross-contamination of foods.
- 5 Identify the conditions that **bacteria** need to grow in food.

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

1.1 Kitchen safety is important!

Accidents are common in the kitchen, but they can be avoided if we follow a few simple safety practices and take into consideration a number of safety design features. It is when we choose not to follow these safety practices and standards that accidents will occur. It does not matter how busy we are in the kitchen or how much fun we are having, it is essential to remember to follow food safety practices at all times. Kitchen safety really is vital!

We must always remember to analyse and assess:

- kitchen design and organisation
- how we can ensure electrical safety
- how we can ensure microwave safety
- our food safety and hygiene practices
- how we can prevent burns and scalds
- the best way to prevent falls and cuts.

Food safety

We know that the kitchen is a common site of accidents and injuries. It is also one of the places where food can become spoiled and **contaminated**, and this can result



1.1 ACTIVITY

Kitchen injuries

- 1 Consider the tasty trivia on page 16. Develop a list of two pieces of kitchen equipment that are safety concerns for young children. Suggest the type of injury that could occur with each of these pieces of equipment.
- 2 Explain why the kitchen is more likely to be a place of injury for children than any other room in the house.
- 3 Develop a list of five safety rules or practices that could be put into place in your home to prevent injury if a small child were to be living there or visiting.

in illness to ourselves or our customer or client – the person for whom we are making the food. Paying attention to a number of important kitchen and personal hygiene safety rules or practices can help to prevent this from happening.

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



Figure 1.1 In the kitchen, you always have to be aware of situations that could create potential safety risks.

The kitchen is one of the most common sites for injuries to children.
More children get hurt in the kitchen than in any other room in the house.

1.2 LET'S COLLABORATE

- 1 Work in groups to develop a list of the tools and equipment in your school kitchen that could be a safety risk. Explain why you think these are potential safety risks. Compare your answers with those of another group and see whether you can add to your list.
- 2 Work as a group to write a letter to your principal explaining your safety concerns. In your letter, discuss the reasons why these are safety concerns, possible injuries that could occur and the steps that need to be taken to reduce or eliminate the risk. Present your letter to the principal for their consideration.

Electrical safety

electricity The flow of electric power or charge.

Electricity is the flow of electric power or charge. If not used correctly, this power or charge

can cause extensive injury or even death. Electricity is an invisible form of energy that is extremely important in the kitchen.

Electrical safety rules

Report any damaged plugs or frayed cords to your teacher.

Switch off electrical appliances after use.

Keep electrical appliances away from the sink area and away from water.

Electrical appliances should be plugged in safely before being switched on.

Always use dry hands when operating electricity.

Ensure that electrical equipment is checked regularly and always has a safety tag attached.

Ensure that all safety cords, plugs, power points and safety switches are safe to use.

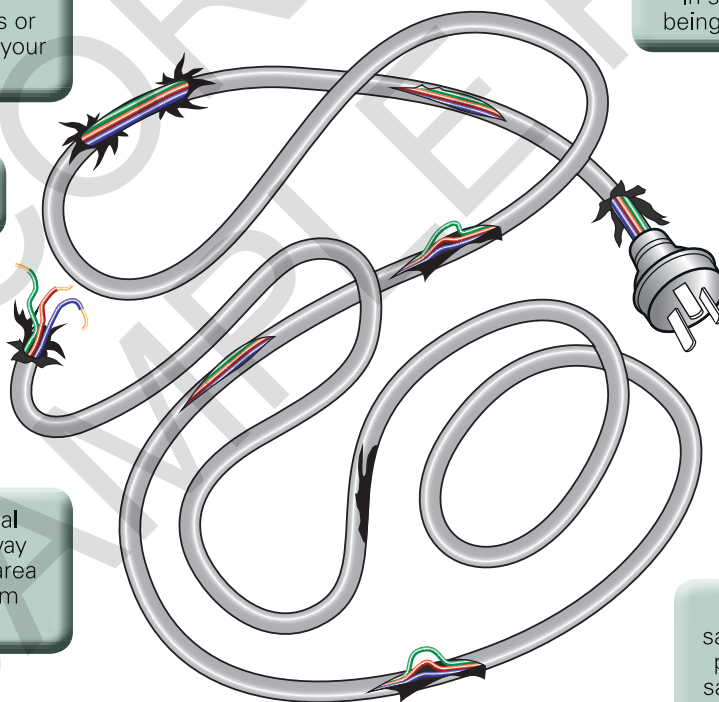


Figure 1.2 Electrical safety rules



1.3 ACTIVITY

Testing and tagging

Investigate the reason why electrical equipment in your school has been 'tested and tagged'. Find out how often this 'test and tag' process needs to occur. List the equipment in your kitchen at school that *does not* have the 'test and tag' sticker attached.



Figure 1.3 Electrical equipment should be 'tested and tagged' for safety purposes.



In Australia, more than half of the 11 000 annual fires in residential properties start in the kitchen. Most of these fires are caused by faulty or damaged electrical wiring.



1.4 LET'S COLLABORATE

Together, develop a list of appliances in the kitchen that need electricity to make them work. Discuss what will happen when there is a power outage in your area – how might you prepare meals?



CREATE A SOLUTION

There are several bananas in the kitchen that are ripe and ready to eat.

- 1** Create solutions to ensure healthy eating:
 - a** Using a piece of electrical equipment safely, develop a nutritious drink using these bananas.
 - b** Investigate two possible design solutions.
 - c** Find two recipes that could be used to make the nutritious drink.
 - d** Choose one of these recipes and explain the reason for your decision.
- 2** Produce the drink and then evaluate it, considering the following:
 - a** Taste test your designed solution for the bananas. Evaluate how successful you were at creating a solution to the 'banana issue'.
 - b** Develop two improvements that you could make if you were to complete this task again.
 - c** Consider the process that you followed. Evaluate yourself. Did you practise safety precautions when using the electrical appliance? How could you make improvements to the processes that you followed?



Basic brownies

Main tools and equipment

Oven, heat-proof bowl, spoons, measuring cups, lamington baking tray, palette knife, scales

Production skills

Simmering, stirring, beating

Cooking processes

Baking





Ingredients

			
Cooking spray	Baking paper	70 g butter	65 g dark chocolate
			
2 eggs	3/4 cups caster sugar	1/2 teaspoon vanilla essence	
			
3/4 cup plain flour	1 tablespoon cocoa powder	Icing sugar to dust	

Method

- 1 Preheat the oven to 180°C.
- 2 Lightly grease lamington tray using cooking spray, then line base of tray with baking paper.
- 3 Place butter and chocolate in a heatproof bowl over top of saucepan of simmering water. Stir until melted; avoid getting water or steam in the bowl. Remove from heat and cool.

MAKES 12 BROWNIES

-  Cooking time: 15–20 minutes
-  Preparation time: 30 minutes
-  Serving and presentation time: 2 minutes
-  Total time: 52 minutes



- 4 In a large bowl, stir eggs, caster sugar and vanilla essence together until well combined.
- 5 Stir in chocolate mixture. Add flour and cocoa, and stir until combined.
- 6 Pour into prepared tray. Bake for 15–20 minutes. Brownies will rise slightly and be just firm to touch.
- 7 Leave to cool in tray while doing your dishes.
- 8 When cool, lift out and cut into squares, dust with icing sugar and serve.

Microwave safety

Microwave ovens play an important role in food preparation. Special care must be taken when using this piece of electrical equipment to avoid injury and accidents from occurring. It is important to think about cooking times, tools and equipment used and standover cooking time.



Figure 1.4 Microwaves can be a safety hazard – always pay attention!

1.2 When kitchen safety goes wrong

Preventing burns and scalds

Burns and **scalds** occur often in the kitchen. They generally happen if we are in a hurry or are being careless about following safety rules. A **scald** is damage caused to skin by something hot, like a saucepan; or electricity, such as when you get an electric shock; or from direct contact with fire, matches, an oven element or an oven tray. A scald is a burn caused by hot water, steam or another liquid, like the steam from a kettle or when you lift the lid of a boiling saucepan.

scald Burn from hot liquid or steam.



Figure 1.5 Be sure to remove lids so that steam rises away from you. Always use an oven mitt or potholder. Wet tea towels should be avoided.

First aid for burns and scalds

Immediate first aid will reduce the severity of a burn. Be sure to follow the steps below if someone in the kitchen is burned:

- Apply lots of cold running tap water (no ice or iced water) to the burn for at least 20 to 30 minutes. Make sure you notify your teacher! Get a fellow student to go and get your school nurse or first aid officer.
- Remove wet clothing (but only if the skin is not blistered or stuck to the clothing).
- If possible, remove anything tight such as jewellery. Burns cause swelling and this may stop circulation.
- Cover the injury with a clean sheet, non-fluffy towel or tea towel.
- If the burn is severe, keep the person who has burned themselves calm and dial triple zero (000) to call an ambulance.



Figure 1.6 A serious burn.



Figure 1.7 How well the skin will heal depends on the severity of the burn.

Burns are serious if they involve the face, hands or feet, or if the burn area is larger than a 20 cent coin.

When someone is burned, you should NEVER:

- use butter, oils or ointments to cover the burn, as they may retain the heat
- use ice, as it can damage the skin.

Burns and scalds are really painful, as the skin shrivels and the heat goes right inside the skin. Sometimes the skin is so badly damaged that it never really heals.

1.5 INVESTIGATE IT

- 1 Explore the Kidsafe website or the Kids Health website (not an Australian site) to learn more information about safety in the kitchen.
- 2 Design a poster for your kitchen explaining the importance of safety.

Preventing falls, slips and cuts

To prevent falls, slips and cuts, be sure to do the following:

- Always concentrate – falls and cuts are often the result of a lack of concentration.
- Clean up any spills or broken glass immediately.
- Clean floors regularly to ensure that they are not greasy.
- Put appliances, tools and equipment away in the correct place.
- Wear footwear that is hard soled and covers your whole foot.
- Use knives in a safe and correct manner.
- Keep oven doors shut.

- Ensure rubbish is stored in the correct place.
- Follow correct lifting procedures and get help if something is too heavy.
- Look where you are going when moving around the kitchen.
- Never run!

Other steps to prevent injuries:

- Empty rubbish bins regularly and wash hands afterwards.
- Keep walkways and aisles clear of boxes and other clutter.
- Ensure you can see where you are going when carrying large items.
- Avoid standing in front of swinging doors and doorways.



1.6 INVESTIGATE IT

- 1 Visit the Worksafe website to investigate the importance of safety in the hospitality industry for young people.
- 2 List the most common injuries and hazards for young workers in the hospitality industry.
- 3 Describe the legal requirements of an employer in the hospitality industry, outlining the hot-spots and solutions that must be in place to protect all workers from injury and illness.
- 4 Explain the reasons why young people are the focus of this information for the hospitality industry.

1.7 ACTIVITY

Safety first

Every picture tells a story. This activity requires you to be the forensic investigator and photographer. Set a scene showing at least three ways by which you can prevent falls, cuts and other injuries in the kitchen, and take a photograph with a digital camera or the camera on your phone. Once you have taken the photo, download it into a Word document and then indicate on the picture how you have prevented these three potential injuries.



Figure 1.8 The food-preparation industry pays a lot of attention to safety issues as the kitchen offers so many opportunities for accidents.

1.8 LET'S COLLABORATE

- 1 Describe five reasons why the correct footwear is required in the kitchen.
- 2 Discuss with a partner the importance of wearing appropriate footwear in the kitchen.
- 3 Thongs are not appropriate in the kitchen. Explain why.
- 4 Demonstrate to each other how you should move around the kitchen when carrying a knife. Practise this to ensure the safety of yourself and others in the kitchen.

1.9 INVESTIGATE IT

- 1 Using YouTube or another video source, find a video clip of a celebrity chef. Watch the video and evaluate the safety practices in the video. Explain how any 'poor' practices may result in injury to the general public. Share these with the class.
- 2 Construct a letter to the producer of the video outlining your findings. Express your point of view regarding whether or not the media source represents responsible safety and hygiene practices in the kitchen.

Stuffed potato

Main tools and equipment

Fork, microwave, spoons, measuring spoon, measuring cup, skewer

Production skills

Combining, dicing, grating, mashing

Cooking processes

Microwaving





Ingredients

				
1 large potato	1 teaspoon milk	1 teaspoon butter	Pepper	25 g cheese, grated
				
1 tablespoon corn kernels	1/4 cup ham, diced	1/4 tomato, diced	1/4 cup pineapple, diced (juice removed)	1 sprig parsley (garnish)

Method

- 1 Pierce potato all over with a fork.
- 2 Cook in microwave on high for 4 minutes.
- 3 Test potato with skewer to see whether it is soft. If still hard, cook for another 30 seconds.
- 4 Cut potato in half. Spoon out the inside, leaving 1 cm of flesh around the potato skin.
- 5 Combine milk, butter, pepper, potato flesh and cheese. Mash with a fork until smooth and creamy.
- 6 Now add the mash to the corn kernels, ham, tomato and pineapple. Combine.
- 7 Spoon mixture back into potato skins.
- 8 Microwave on high for 1 minute.
- 9 Serve with the parsley garnish.

SERVES 1

-  Preparation time: 10 minutes
-  Cooking time: 6 minutes (using the microwave)
-  Serving and preparation time: 4 minutes
-  Total time: 20 minutes



Evaluating

- 1 List two safety practices that you followed for this recipe.
- 2 List two hygiene practices that you followed for this recipe.
- 3 Evaluate your work:
 - a State two things that you did correctly.
 - b Suggest two areas for improvement.
- 4 In your workbook, copy and complete this table to evaluate the success of your own work. Reflect on how you performed in terms of safety and hygiene when you produced your stuffed potato.

What did I do successfully?	Areas for improvement next time

- 5 If you were to prepare this recipe again, explain how your decision-making processes would be different next time.



1.10 ACTIVITY

Create a fridge magnet

Design a fridge magnet for your kitchen at home. Shape the magnet like a piece of kitchen equipment and then, on your magnet, list the safety tips that make the kitchen safe.



REFLECT ON LEARNING

- 1 Explain why the design of a kitchen is so important.
- 2 Summarise the reasons why electrical appliances should be kept away from water.
- 3 List the potential injuries that could occur with the use of the microwave.
- 4 Identify the differences between a burn and a scald.
- 5 Discuss the dangers that could occur from running in the kitchen.
- 6 Explain the importance of proper shoes in the kitchen. In your response, provide specific details about the type of shoes that should be worn.

1.3 Handling food hygienically

Hygiene is the practice of cleanliness. It is essential that all people who handle food practise food preparation

hygiene The practice of cleanliness in order to preserve health and prevent the spread of disease.

in a safe and hygienic manner in order to prevent the spread of disease to ensure that people who eat the food that they prepare do not become ill.

1.11 LET'S COLLABORATE

List the signs or symptoms of food poisoning. Have you ever had food poisoning? Explain what it was like – what signs or symptoms did you have?

Personal hygiene

It is important that we all follow good personal hygiene practices, as this helps to prevent and control the spread of harmful germs. The purpose of ensuring strict personal hygiene when cooking food is to prevent food contamination and food poisoning, as well as the spread of disease.

Hands are the main means of contaminating food and spreading food-poisoning bacteria. Cuts and sores provide an ideal place for bacterial growth. Cuts and sores should be covered with colourful waterproof dressings.

The nose, mouth and ears carry *Staphylococci* bacteria. Discharge from the ears, eyes and nose may also contaminate food. Food handlers must not: cough or sneeze over food; pick or scratch their nose; or taste food with their fingers. Hair constantly falls out of our heads, which can result in food being contaminated; therefore, long hair should be tied back or covered with a suitable hair net or chef's hat.

It is illegal to use tobacco in food preparation, handling and storage areas, or when delivering food.

Jewellery, including watches, can harbour dirt and bacteria; the small pieces in jewellery can also fall out into food. A person who is suffering from diarrhoea, vomiting, a food-borne infection, skin infections, sores, heavy colds, or ear or eye discharge must not work with food.



Figure 1.9 Always wear gloves to help prevent the spread of bacteria.

Tasty Trivia

The number of germs on fingertips doubles after using the toilet. Yet up to half of all men and a quarter of women fail to wash their hands after they have been to the toilet!

1.12 LET'S COLLABORATE

As a group, explain why colourful dressings or Band-Aids are so important in the kitchen.



Figure 1.10 Colourful Band-Aids are a better option than flesh-coloured ones.

Tasty Trivia

A 1 mm hair follicle can harbour 50 000 germs. Humans have between 90 000 and 150 000 hairs on their heads!

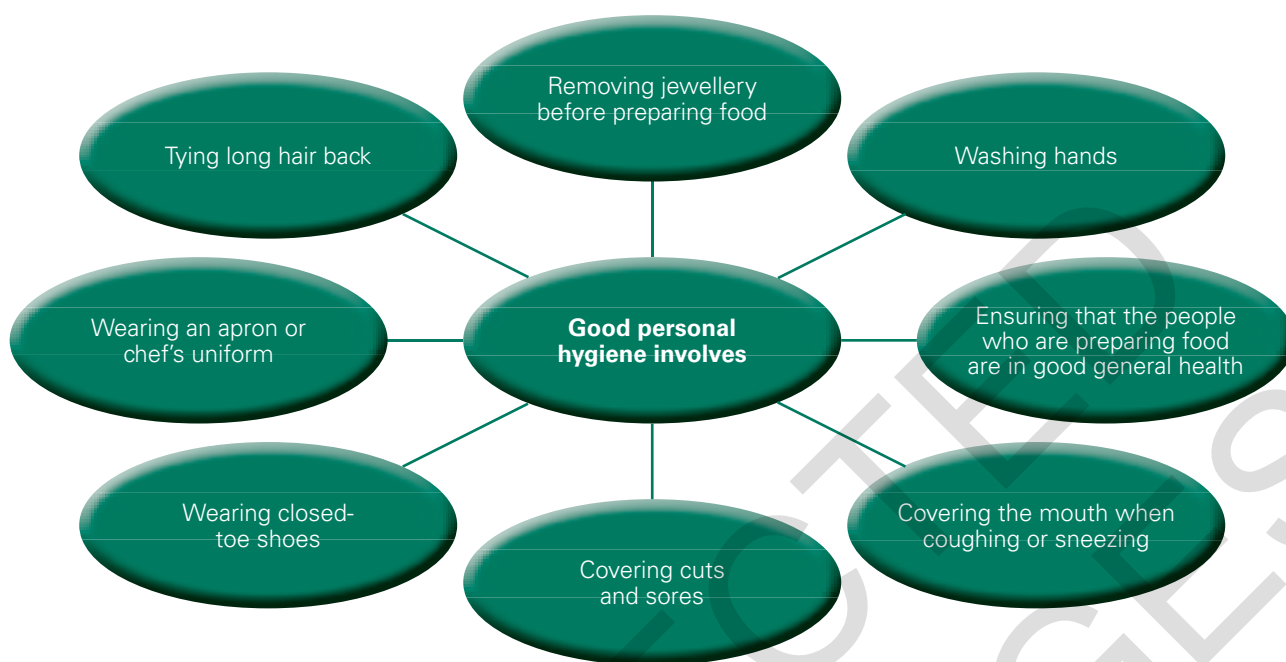


Figure 1.11 There are many ways of preventing a lack of personal hygiene from contributing to the spread of disease.



Figure 1.12 Always cover your hair when cooking.

Tasty Trivia

If you wear a ring, there could be as many germs under it as there are people in Europe. Millions of germs can also hide under watches and bracelets. This is such an important issue that there is even an area of study called Jewellery Hygiene!



Figure 1.13 Bacteria like these *E. coli* can spread very quickly and cause food poisoning.



1.13 ACTIVITY

Cooking when ill

- 1 List the signs that a food handler would show if they were becoming ill.
- 2 Explain why it is so important not to allow ill people in the kitchen.
- 3 Predict what will happen in the home if the person who does the cooking is ill.
- 4 Recall the number of times you have washed your hands today. Share your response with the person beside you.

Do you really wash your hands properly? You probably think you know how to wash your hands – it's something we have done since we were children; however, many of us don't do it properly. Simply rinsing the fingertips under cold water does not count as proper hand washing.

Follow these simple steps to ensure you wash your hands properly:

- 1 Use warm water. It is better to wet hands before applying soap, as this prevents irritation and helps to get the soap to lather.
- 2 Rub hands together vigorously, making sure both sides of the hands are washed thoroughly, around the thumbs, between each finger and around and under the nails. Don't forget your wrists as well!
- 3 Wash your hands for the length of time it takes to sing 'Happy Birthday'.
- 4 Rinse with clean, warm water.
- 5 Germs spread more easily if hands are wet, so dry them thoroughly – use a clean paper towel or an air dryer; it doesn't matter which.



1.14 LET'S COLLABORATE

In pairs, predict the amount of times you might expect to wash your hands in a Design and Technologies class. Compare your prediction with that of your partner.



1.15 ACTIVITY

Inspect those hands

- 1 Investigate your hands. Are they clean? Articulate the cleanliness of your hands.
- 2 Now take a magnifying glass and look at your hands. Suggest the places on your hands where germs might hide.
- 3 Check under your fingernails. Predict what you think is hiding underneath them.
- 4 List the times/occasions when you should wash your hands thoroughly.
- 5 Explain the reason why soap is so important in the hand-washing process.



Everything you touch can transfer germs onto your hands, including sores, pets, handkerchiefs and tissues, and everything you touch when you go to the toilet.



Figure 1.14 Follow these two steps to get rid of germs: wash and thoroughly dry your hands.



Figure 1.15 You can easily see the beetroot stains but you can't see the germs!

Protective clothing

Protective clothing and appropriate footwear are essential in the kitchen. They not only protect our street clothing but also ensure that food does not become contaminated.

Clothing that is worn in the kitchen should be clean, lightweight and without pockets.

Aprons that are worn in the kitchen should completely cover and protect street clothing and also protect food from the risk of contamination.



Figure 1.16 Correct clothing for the kitchen.



1.16 ACTIVITY

Street clothing

Look at Figure 1.17 and answer the following questions:

- 1 Explain why it is unsafe to wear street clothing in the kitchen.
- 2 Analyse the footwear of the person in the photograph.
- 3 Baggy clothing and buttons that are undone can be a potential safety risk. List the reasons why this is the case.
- 4 Develop a list of accidents that could result from the clothing on the person in the photograph.
- 5 Suggest how a person should be dressed when working in the kitchen. Be sure to consider clothing or dress issues from head to toe.
- 6 Think further than the school or home kitchen. Generate a list of other special uniforms that might be necessary in areas where food is prepared and served. Consider the following:

<ol style="list-style-type: none"> a restaurant manager c chef e sandwich maker in a sandwich shop. 	<ol style="list-style-type: none"> b waiter/waitress d kitchen assistant
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Figure 1.17 Street clothing is not appropriate in the kitchen.

REFLECT ON LEARNING

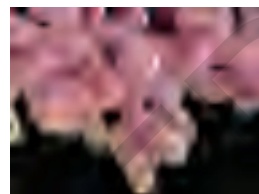
- 1 Explain the meaning of the term 'hygiene'.
- 2 Explain why being hygienic in the kitchen is so important.
- 3 List three practices that should be followed to ensure good personal hygiene.
- 4 Complete this sentence: 'Hands are carriers of germs because ...'
- 5 Complete this sentence: 'Protective clothing is important because ...'

1.4 Food safety

Food safety is about ensuring that the food we consume is safe for consumption and does not put us at risk of food poisoning. Food safety regulations in Australia help to ensure that food is safe until the time it reaches us in the kitchen – whether that is the school kitchen or the kitchen at home. Once the food is with us in the kitchen, it is up to us to ensure that it is stored and prepared in a safe manner.

Tasty Trivia

Each year, there are an estimated 5.4 million cases of food poisoning in Australia – that is one in four people. Most of these cases are caused by bacteria.



1.17 ACTIVITY

The Pork Pie Shop Pies

The Pork Pie Shop has recalled their own branded Pork Pies and Ascot Pies from butchers and small grocery stores in South Australia due to potential salmonella contamination.

Food products contaminated with salmonella may cause illness if consumed and any consumers concerned about their health should seek medical advice.

The products can be returned to the place of purchase for a full refund.

Date notified to FSANZ

21/03/2017

Food type

Pork Pie

Product name

The Pork Pie Shop Pork Pies

The Pork Pie Shop Ascot Pies

Package description and size

These are unpackaged pork pies

Date marking

All batches are being recalled

Country of origin

Australia

Reason for recall

Potential microbial contamination – salmonella

Distribution

Butchers and small grocery stores in South Australia

Consumer advice

Food products contaminated with salmonella may cause illness if consumed and any consumers concerned about their health should seek medical advice.

The products can be returned to the place of purchase for a full refund.

Contact

The Pork Pie Shop

www.theporkpieshop.com.au



1.17 ACTIVITY continued

The South Australian government has enacted a food recall on the Pork Pie Shop pies.

- 1 Read the information in the product recall and decide why the South Australian government forced the recall of this food product.
- 2 Explain the likely health implications for consumers if they were to consume this product.
- 3 Discuss the reason why all governments of Australia must put in place measures to recall foods when required and therefore protect the health and safety of Australians.
- 4 Choose a food product that you either have in your lunchbox or in the pantry in your school kitchen and develop your own product recall. Graphically represent this food recall on an A4 sheet.
- 5 Include the headings used in the food recall above that could be placed on the noticeboard in a supermarket to warn consumers of a product recall.



1.18 LET'S COLLABORATE

With your classmates, make a list of all the places that a piece of meat would go to before it comes to us served on a plate in a restaurant – think 'paddock to plate'. Then consider all the people who handle this piece of meat before it is served to us. Develop a list of ways that you could create a managed environment for meat so that it is safe to eat when it arrives on your plate.



1.19 INVESTIGATE IT

- 1 Check out the Australia New Zealand Food Standards Code. Explain why the Food Standards Code is so important.
- 2 Construct a computer-generated flow chart to show both the places and people that come into contact with a piece of meat before we eat it.

Cross-contamination

Cross-contamination occurs when bacteria and **viruses** are transferred from a surface that is contaminated to a surface that is not contaminated.

viruses Microscopic parasites that are food or water borne. They cause viral infections that result in illness in humans.

These bacteria and viruses can be transferred to and from humans, kitchen equipment, work surfaces and other foods.

Cross-contamination can be prevented by the careful handling of food. Everyone who handles food, from the farmer to the butcher to the chef, must ensure that they follow good hygiene practices to avoid cross-contamination.

Always keep your chopping boards clean to prevent cross-contamination. Chopping boards should be washed carefully with hot water and detergent, then rinsed and thoroughly dried before being used for ready-to-eat products.



Figure 1.18 Hands are among the most obvious surfaces for the transfer of bacteria from raw to ready-to-eat foods.



1.20 ACTIVITY

Check out the fridge

- 1 Look at the fridge in Figure 1.19 and list the ready-to-eat foods that should be stored on the top shelves and the raw foods that should be stored on the bottom shelves.
- 2 Design a set of simple instructions about how to store food items in the fridge. Prepare the list using your ICT skills so that it could be included in the instruction manual of every new fridge sold in Australia.

Top shelf: Ready-to-eat items should be placed on the top shelves. Where possible, these items should be covered to further protect them.



Bottom shelf: Raw foods should be placed on the bottom shelves of the fridge; this prevents the raw meat juices from dripping onto cooked foods, fruits and other ready-to-eat foods. Where possible, these items should be covered to prevent cross-contamination.

Figure 1.19 Storing your food correctly will help prevent cross-contamination.



Figure 1.20 How can the use of coloured chopping boards help to prevent cross-contamination?



Figure 1.21 Dirty cooking equipment can also contaminate foods.

The danger zone

The danger zone is the temperature at which bacteria multiply rapidly. Foods that could give you food poisoning should be kept below 5°C if they are to be served cold or above 60°C if they are to be served hot.



1.21 INVESTIGATE IT

- 1 Locate the state government health information website for the state in which you live. Explore the site to learn more about food poisoning and food safety.
- 2 Conduct a search of the federal Department of Health website to find out more about the responsibilities of our state and federal governments in ensuring that the food we eat is safe.



Figure 1.22 Cold food should be kept cold.

The temperature danger zone is between 5°C and 60°C; it is within this temperature range that bacteria can grow to unsafe levels. Low temperatures (below 5°C) prevent food poisoning bacteria from multiplying to dangerous levels and high temperatures (above 60°C) will kill most bacteria and viruses. There are a number of high-risk foods that could potentially be hazardous if not cooked and stored properly.

1.22 LET'S COLLABORATE

As a class, do the maths! If one bacterium can multiply to become 17 million in eight hours, how many bacteria could develop in a ham sandwich that sits in your bag from 8 am until 12.30 pm when you eat it for lunch?

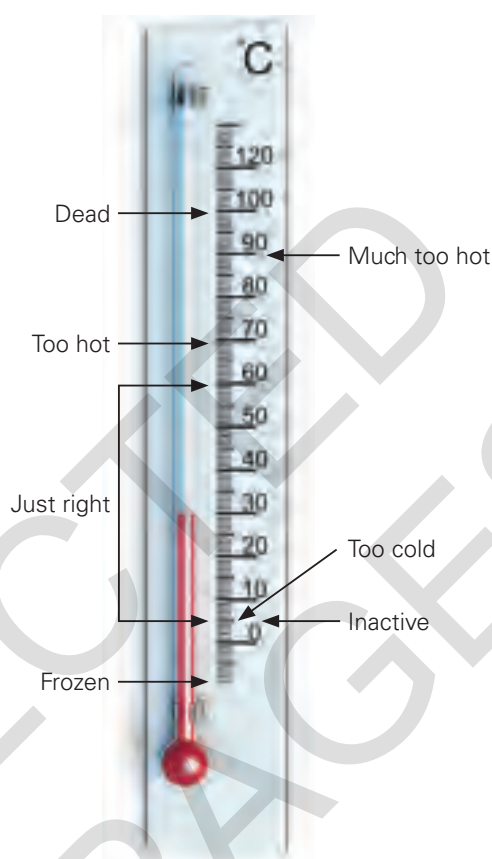


Figure 1.23 This thermometer shows how bacteria respond to different temperatures. Bacteria are happiest in the range from 5°C to 60°C – this is the danger zone for humans.

1.23 ACTIVITY

Cold or hot?

Copy and complete the table below to develop a list of foods that need to stay cold and those that need to be cooked thoroughly.

Foods that need to stay cold	Examples of foods that need to stay cold	Foods that need to be cooked thoroughly	Examples of foods that need to be cooked thoroughly
These are food items that need to stay below 5°C. These foods should be stored in the refrigerator or freezer, not just because we like them cold but because they will go off if not stored in the fridge or freezer.		These food items need to be cooked to above 60°C. This is due to the fact that the process the food item has undergone makes it easy for bacteria to get to the centre of the food (mincing, cutting) or because the flesh of the animal that we eat was contaminated with bacteria when the gut was removed.	

Keeping food safe

Food-poisoning bacteria can grow and multiply very quickly in the right conditions. There are a few simple tips to follow when you begin work in the kitchen that can ensure the food is safe to eat and that you and your classmates do not get food poisoning. Try to remember these four rules:

1 Clean

- Clean hands – this will decrease the possibility of food poisoning happening. Remember to wash and dry your hands thoroughly for the length of time it takes to sing ‘Happy Birthday’ twice.
- Clean as you go – ensure that you clean dishes and dispose of rubbish as you go.
- Clean clothes and protective clothing are essential.
- Clean up any spills immediately.
- Clean dish cloths and tea towels should be used at all times.
- Clean equipment will make sure cross-contamination doesn’t occur.

2 Chill

- Food that is meant to be cold should be kept cold.
- Chill cold foods in the fridge as soon as possible after purchase.
- Chill hot leftovers once steam has stopped being visible – don’t leave them on the bench to cool completely.

- Defrost frozen foods in the fridge – not on the kitchen bench or in the sun!
- Your fridge should be kept at 4°C or lower.

3 Cook

- Cook food thoroughly to decrease the risk of food poisoning.
- Keep hot foods steaming hot when holding or waiting to serve.
- Serve hot food hot!

4 Separate and store

- Separate raw and cooked foods.
- Cover all foods when storing.
- Raw foods should be on the bottom of the fridge.
- Do not put cooked meat back onto the surface where the raw meat was kept.
- Be sure to store food for the right length of time, at the right temperature and in the right place.

1.24 LET’S COLLABORATE

Choose a partner and discuss the following questions together:

- 1 Where is meat defrosted in your home?
- 2 How should meat be defrosted?
- 3 What can occur if meat is not defrosted correctly?

Storage of food	Temperatures required
Storing chilled food	Below 5°C
Storing frozen food	Below –18°C
Cooking food	Above 75°C
Reheating solid food	Above 75°C
Reheating liquid food	Above 75°C
Hot holding food	Above 60°C

Figure 1.24 Storage temperatures for food.

1.25 ACTIVITY

Are your fridge and freezer safe?

Borrow a thermometer from school and measure the temperature of your fridge and freezer at home. Are they cooling and freezing foods at the correct temperature? Often when the temperature of a fridge or freezer is not cold enough, the seals need replacing. Is this the case at your house?

Cheesy bacon rolls



LITHUANIA

Main tools and equipment

Oven, sieve, spoon or whisk, measuring cups, baking tray, measuring jug, grater

Production skills

Sifting, stirring, kneading, grating

Cooking processes

Baking





Ingredients

		
Cooking spray	2½ cups self raising flour	60 g butter
		
¾ cup low-fat milk	½ cup low-fat tasty cheese, grated	¼ cup diced bacon pieces

Method

- 1 Preheat the oven to 200°C.
- 2 Lightly grease an oven tray using cooking spray.
- 3 Sift flour into a large bowl and add butter.
- 4 Using fingertips, rub the butter into the flour until the mixture looks like breadcrumbs.
- 5 Make a well in the centre and pour the milk into it.
- 6 Stir until mixture forms a soft dough.
- 7 Sprinkle some flour onto the bench and knead the dough gently.
- 8 Divide dough into 6 pieces and roll each piece into a ball. Get creative with your rolls: create a plait roll, a shell roll.
- 9 Use a knife to gently mark a cross on the top of each ball.

SERVES 6

-  Cooking time: 15 minutes
-  Preparation time: 30 minutes
-  Serving and presentation time: 3 minutes
-  Total time: 48 minutes



- 10 Spread even amounts of cheese and bacon pieces on top of each roll.
- 11 Place onto tray and bake for 15 minutes or until rolls sound hollow when tapped.

REFLECT ON LEARNING

- 1 Explain how to keep food safe.
- 2 Discuss three ways that cross-contamination can occur.
- 3 Compare bacteria and viruses. Describe the similarities and differences.
- 4 Complete the sentence: 'The danger zone is ...'
- 5 List four safe food tips.



LOOKING BACK

- 1 Accidents and injury can be avoided by following the safety rules.
- 2 The organisation and design of a kitchen are important for ensuring that the people who work there remain safe from falls, cuts, burns, scalds and other possible kitchen injuries.
- 3 A number of health and safety issues need to be considered when preparing food, whether it be in the school kitchen, at home, in a restaurant or in a shop.
- 4 It is extremely important to maintain personal hygiene standards when preparing food.
- 5 Food hygiene safety prevents illness and ensures that the food we eat has been stored correctly and at the right temperature.

TEST YOUR KNOWLEDGE

Multiple choice

- 1 When treating a burn or scald, it is important to use:
 - a ice
 - b iced water
 - c butter and rub it onto the burn or scald
 - d cold water.
- 2 A person can suffer from food poisoning when the food handler:
 - a has been ill
 - b has been smoking in the kitchen
 - c has worn jewellery and watches
 - d all of the above.

True/false

- 1 The electrical outlets are best positioned close to the sink.
- 2 Food cooked in the microwave can reach scalding temperatures and should be treated as a safety risk.
- 3 When you are in a hurry, it is all right to run in the kitchen.

Short answer

- 1 Explain the reason why it is so important to wash hands properly and wear protective clothing in the kitchen.
- 2 Explain how the 'rule' of clean, chill, cook, separate and store could be followed in the kitchen of a local pizza café.
- 3 Callum and Hudson are two university students who share a flat. When they have leftovers, they leave them on the bench overnight to cool. Describe to Callum and Hudson why this is a food-hygiene issue (mention temperature in your response).

Extended response

Part A

- 1 Analyse the safety and hygiene practices of a group of contestants on a TV food competition. Ask yourself whether you would eat their food. If you were working on this show, how would you advise the contestants to improve their safety and hygiene practices?
- 2 Choose one of the celebrity chefs featured on TV and complete the following analysis of their personal and food hygiene standards and also their work practices. Copy the table on the next page and complete an analysis of the pluses, minuses and interesting things (PMI) of the TV chef you have chosen.

Name of program:

Name of chef:

TV channel:

Time featured:

What are some of the positive hygiene and work practices of your TV chef?	What are some of the negative hygiene and work practices of your TV chef?	What other interesting observations did you make while watching your TV chef?

3 While you are watching your TV chef, look for some of the following things:

- food safety practices: different chopping boards, cleaning methods, removal of waste
- organisation of the kitchen: placement of power points, space to move around
- personal hygiene and appearance: protective clothing, hand-washing practices, hair, nails, jewellery
- correct and safe use of equipment: use of oven mitts, carrying of knives, saucepan handles.

Part B

Now that you have collected your information and analysed the work practices of your TV chef, it is time to evaluate their performance. Prepare an extended response using the following guidelines:

- 1** Evaluate the personal hygiene of your TV chef.
- 2** Discuss how they performed in terms of personal and food hygiene, reflecting on the knowledge that you have gained throughout this chapter.
- 3** Produce a list of 'points of advice' you would give your TV chef if you were a health inspector visiting their kitchen.
- 4** Produce a comment or evaluate your overall impression of the food-safety practices of your TV chef.
- 5** Justify whether you think the kitchen organisation or design promotes safety.
- 6** Describe the changes that you would make to this kitchen and justify each change.
- 7** Discuss why you think it is important to correctly select and use kitchen equipment safely. What could go wrong with the selection and use of equipment?
- 8** Evaluate how your TV chef performed in terms of selection and use of kitchen equipment.
- 9** After viewing your TV chef, discuss how realistic the preparation of recipes is on TV.
- 10** Compare and contrast the production of recipes on TV with the way it occurs at school.