

NAME:

CLASS:

BANCHORY ACADEMY

HOME ECONOMICS



UNIT 1

FOOD SAFETY AND HYGIENE

UNIT 1

The following experiences and outcomes will be wholly or partially covered by the work within this unit.

TECHNOLOGIES

TCH 2.02, 2.11(b), 2.30, 2.33, 2.34 3.01, 3.10(a), 3.10(b), 3.11(a) 4.11(c)

HEALTH AND WELLBEING

HWB 2.30, 2.33, 2.34, 2.35.

In the course of the unit the following skills and cookery processes will be taught.

Weighing

Measuring

Peeling

Mixing

Slicing

Chopping

Rubbing in

Testing for readiness

Boiling

Stewing

Baking

Grilling

Shallow frying

Home Economics Department Code of Conduct

- At the beginning of Home Economics lessons I will line-up in single file outside the correct classroom door i.e. _____ and only enter the teaching area when told to do so by my teacher, Mrs _____.
- On entering the teaching area I will remove my _____, _____, _____ etc. and hang these up on the _____ provided. I will remove my pencil case, _____ and any other items I may require for lesson before placing my bag in the bag box.
- Pupils should not _____/_____ on the work-surfaces or mistreat equipment as many other pupils have to use the same items.
- I should be fully _____ for practical lessons and have my ingredients as this is my weekly homework.
- I should remove all _____ and place it in the marked box on the teacher's table. I should not be wearing _____ - _____ or have _____ on my hands as these items can contaminate foods.
- I will not sample raw meat or egg mixtures or _____ during practical lessons. If told to _____ a dish I will do so with a _____ teaspoon and will _____ and _____ it before retasting the food after seasoning.
- If I am using a pan I will also use a _____ - _____ to prevent _____ to the work surface.
- When I leave my unit it should be _____ and _____ as I would hope to find it.
- When my teacher asks us to _____ we must do so immediately and _____ to her instructions.

Missing words:-

prepared, jewellery, hat, clean, Skinner/Towers, taste, scarf, damage, listen, jacket, H.E.1/2, nail-varnish, tidy, eat, stop, wash, dry, write/draw, pan-stand, folder, hooks, ink, clean

Work Area Familiarisation

Work unit

My unit is number ___ in H E 1 / 2

I work with _____.

Look in the drawers and tick off the equipment as you identify it.

Drawer 1		Drawer 2		Drawer 3	
2 tablespoons		2 wooden spoons		2 graters	
2 dessertspoons		2 plastic spatulas		2 rolling pins	
2 teaspoons		2 fish slices		1 draining spoon	
2 forks		2 whisks		1 ladle	
2 round bladed knives		2 sets of measuring spoons			

Drawer 4		Drawer 5	
2 baking sheets		2 cooling racks	
2 bun trays		2 pan stands	

Now look in the cupboard, tick off the items you see.

TOP SHELF

- 2 large bowls 2 small bowls
- 2 sieves 2 measuring jugs

MIDDLE SHELF

- 2 saucers 2 small plates
- 2 large plates 2 mugs

BOTTOM SHELF

- 2 plastic trays

Where is the pan cupboard?

List what you find in it

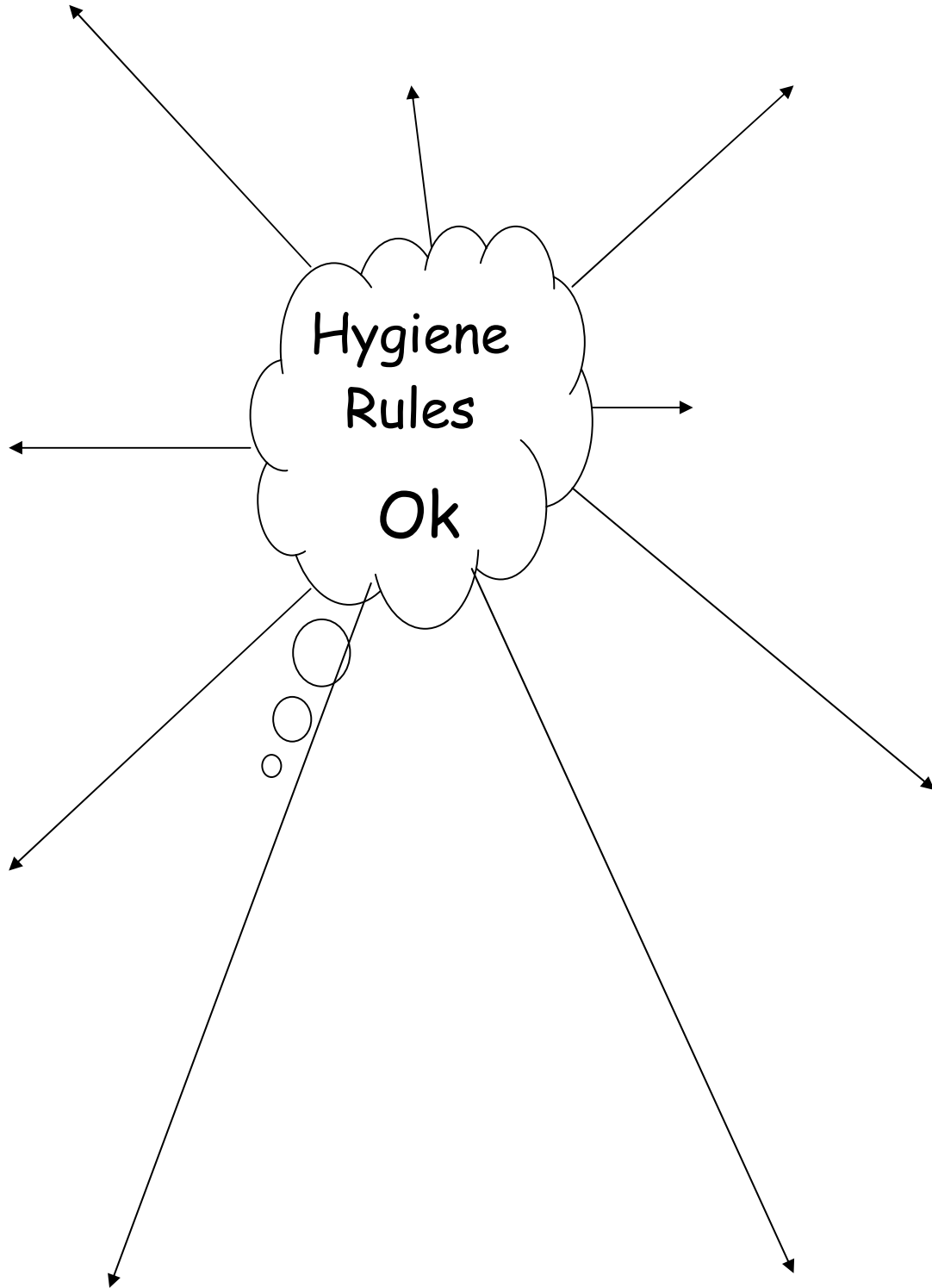


Why is it important you clean up thoroughly and put equipment away in the correct places?

Personal Hygiene in the Kitchen



Discuss at your table what personal hygiene points maybe required



Correct washing up procedure

When working in any kitchen it is very important that you remember to clean as you go.



What does clean as you go mean?

Good hygiene practice

- Stack all dirty dishes beside the sink as you finish using them (on the work surface **not** the steel area.)
- Wash the dishes properly using hot water **and** detergent
Hot water helps to loosen scraps of food from dishes and can dissolve grease.
Detergent removes the food and bacteria from the dishes and prevent them settling back on to the clean dishes.
- Wipe down work surfaces before and after use with a clean cloth and anti-bacterial spray
- Dry all equipment and utensils with a clean tea towel
Clean dishtowels should be used each time items are dried or they can be left on a dish drainer to air dry. (Dirty dishtowels will recontaminate clean dishes)
- Put all items away in correct drawers and cupboards - see page 4

Questions

1. Why is it important to wash dishes using detergent?
2. Why do we use hot water when washing dishes?
3. Explain why we use a clean cloth when wiping over work surfaces.
4. In school we dry dishes rather than allow them to air dry. Why is it not possible to allow them to air dry?
5. What are the reasons for utensils, cutlery and crockery being stored in cupboards and drawers?

Weighing and Measuring

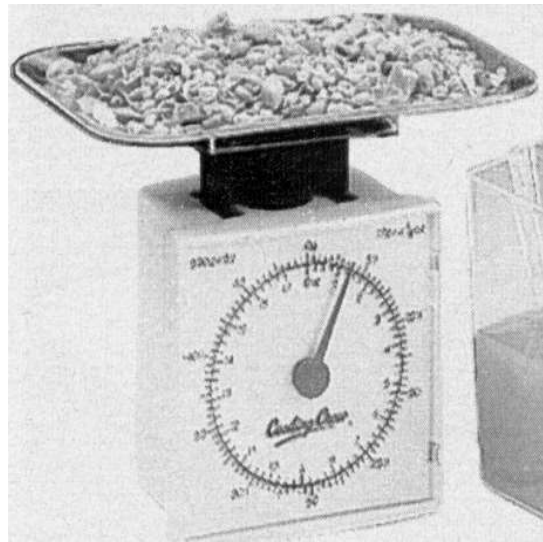
In order to get the best results when cooking accurate weighing and measuring is very important.

STATION 1

Scales - label the scales with the correct name.



NAME _____



NAME _____

Solid ingredients are measured in grams/kilograms. There are 1000g in a kilogram. Calculate the following in grams:

$\frac{1}{2}$ kg _____

$\frac{1}{4}$ kg _____

2 kg _____

0.2kg _____

0.75 kg _____

1.4kg _____

Look at the dial of the spring balance scale, how many grams are represented by each small line? _____g

There are 4 bags of flour (labelled) ready to weigh, place each one on both sets of scales and record your answers below: - (remember to give the unit of weight)

BAG OF FLOUR	SPRING BALANCE SCALES	DIGITAL SCALES
A		
B		
C		
D		

Are all your answers identical?

If not why do you think this is?

STATION 2

We do not always have a set of scales available or maybe we only want to weigh a very small amount of an ingredient e.g. spices/herbs. When this happens we can use a tablespoon or teaspoon to give a quick and reasonably accurate way of measuring ingredients. This type of measurement is called “handy measures” as they are approximations but cannot be used where accuracy of weight is very important.

25 g flour - 1 **ROUNDED** tablespoon

5 g flour - 1 **ROUNDED** teaspoon

25 g sugar - 1 **LEVEL** tablespoon

5 g sugar - 1 **LEVEL** teaspoon

Using this information to complete the table below:

INGREDIENTS	WEIGHT	HANDY MEASUREMENT
Flour	25 g	
Flour		3 rounded teaspoons
Sugar	100 g	
	50 g	2 rounded tablespoons
Flour		5 rounded teaspoons
Sugar	75 g	
	20 g	4 level teaspoons
Flour		4 rounded tablespoons

Check the spoons in your unit; do you know which one is the tablespoon?

Extension

Using the information above complete the following, more complex weights.

INGREDIENTS	WEIGHT	HANDY MEASUREMENT
Flour	17.5 g	
Flour		3 rounded teaspoons + 2 rounded tablespoons
Sugar	95 g	
Sugar		5 level teaspoons + 1 level tablespoon
Flour	60 g	

STATION 3

Liquids are measured in millilitres/litres.

How many ml are there in 1 litre? _____ml

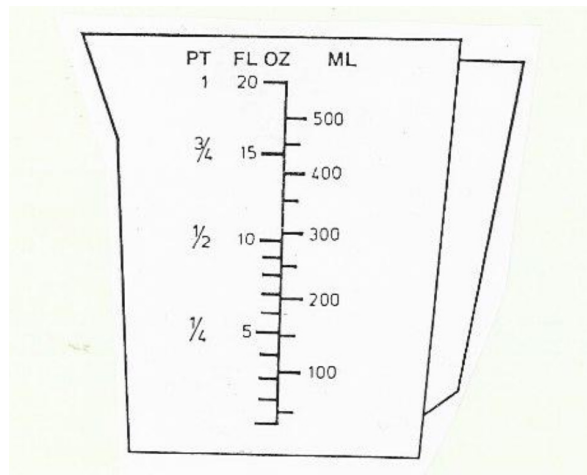
0.1 litres = ml
0.2 litres = ml
 $\frac{1}{2}$ litres = ml
0.65 litres = ml
0.95 litres = ml
 $1\frac{1}{4}$ litres = ml

There are 2 rules to remember when measuring using a measuring jug, fill in the blanks to complete the rules.

- Always place the measuring - - - on a - - - - surface.
- Read the measurement at - - - level.

Using the picture of the jug draw the following amounts onto the scale.

- A 0.5litre
- B 0.35 litre
- C 200 ml
- D 0.05 litre
- E 475 ml
- F $\frac{1}{4}$ litre



There are 4 jugs with coloured liquid on the table, read and record the measurement of each jug below: (remember to give the unit of weight)

Jug	Quantity of liquid
A	
B	
C	
D	

STATION 4

We use measuring spoons to measure **small** quantities of solid or liquid ingredients. Measuring spoons are very accurate but they must be filled correctly.

1. Solid ingredients - level off excess ingredients from the measuring spoon with a knife.

Use the flour provided and the 10ml spoon to practice measuring accurately.

2. Measuring liquids - the liquid must be poured from a bottle or jug onto the spoon until full.

Use the 5ml and 15ml measuring spoons from the unit and the jug of water to practice measuring liquid.



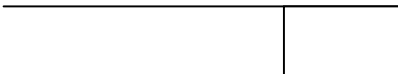
Write the rules for the correct use of measuring spoons in your own words

1. For solids _____

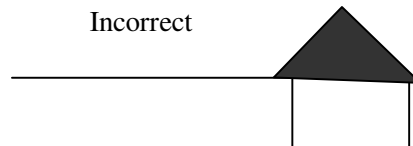
2. For liquids _____

Using the jug of water, box of flour and the set of measuring spoons at the station now practice the correct filling of measuring spoons.

Correct



Incorrect



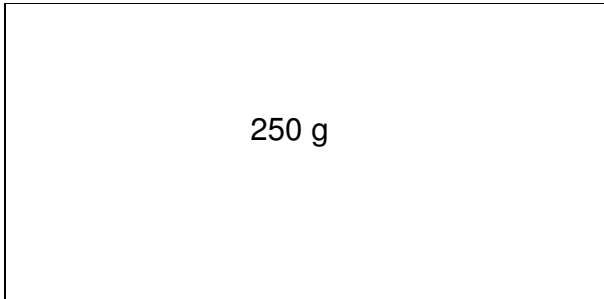
Extension work

ml - millilitres	cc – cubic centilitres	tsp./tbsp.- teaspoon/tablespoon
2.5 ml		
		1 tsp.
	60 cc	
10 ml		
		½ tbsp.
1.25 ml		
	15 cc	

STATION 5

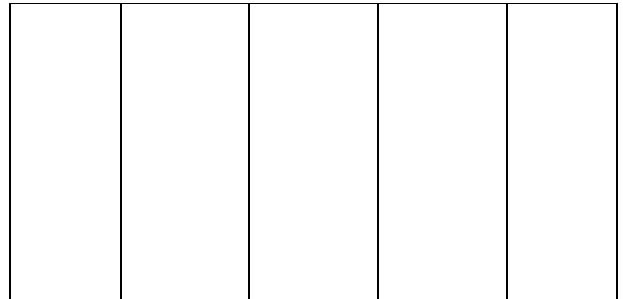
In class we use margarine in a large number of recipes. The margarine used comes in 250g blocks or tubs. In S1/2 the margarine is cut up ready for you to use, but you need to be able to recognise the size of pieces you need to use.

A



Rectangle A represents a full block of marg

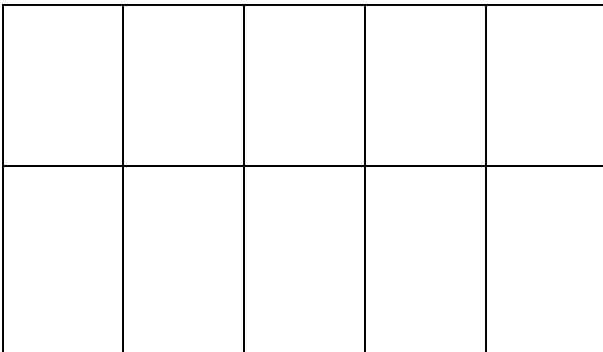
B



In rectangle B shade in a 50 g piece.

In rectangle C shade in a 25 g piece.

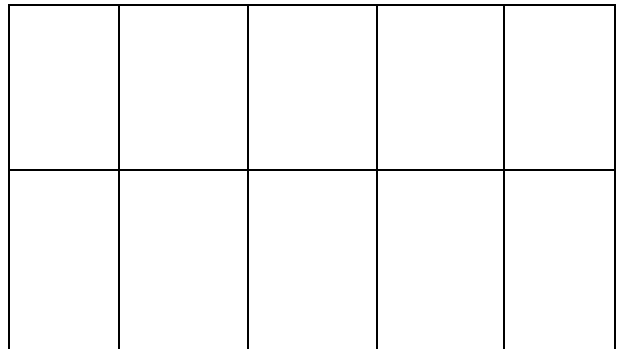
C



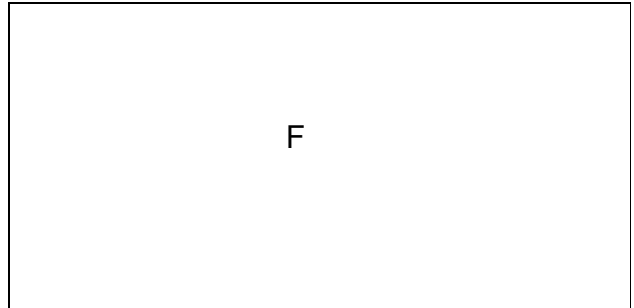
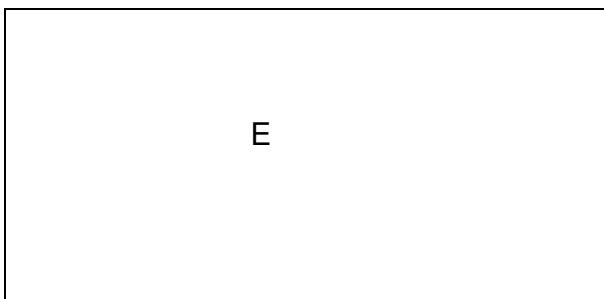
In rectangle E shade a 100 g piece.

In rectangle D shade in a 12.5 g piece

D



In rectangle F shade a 75 g piece



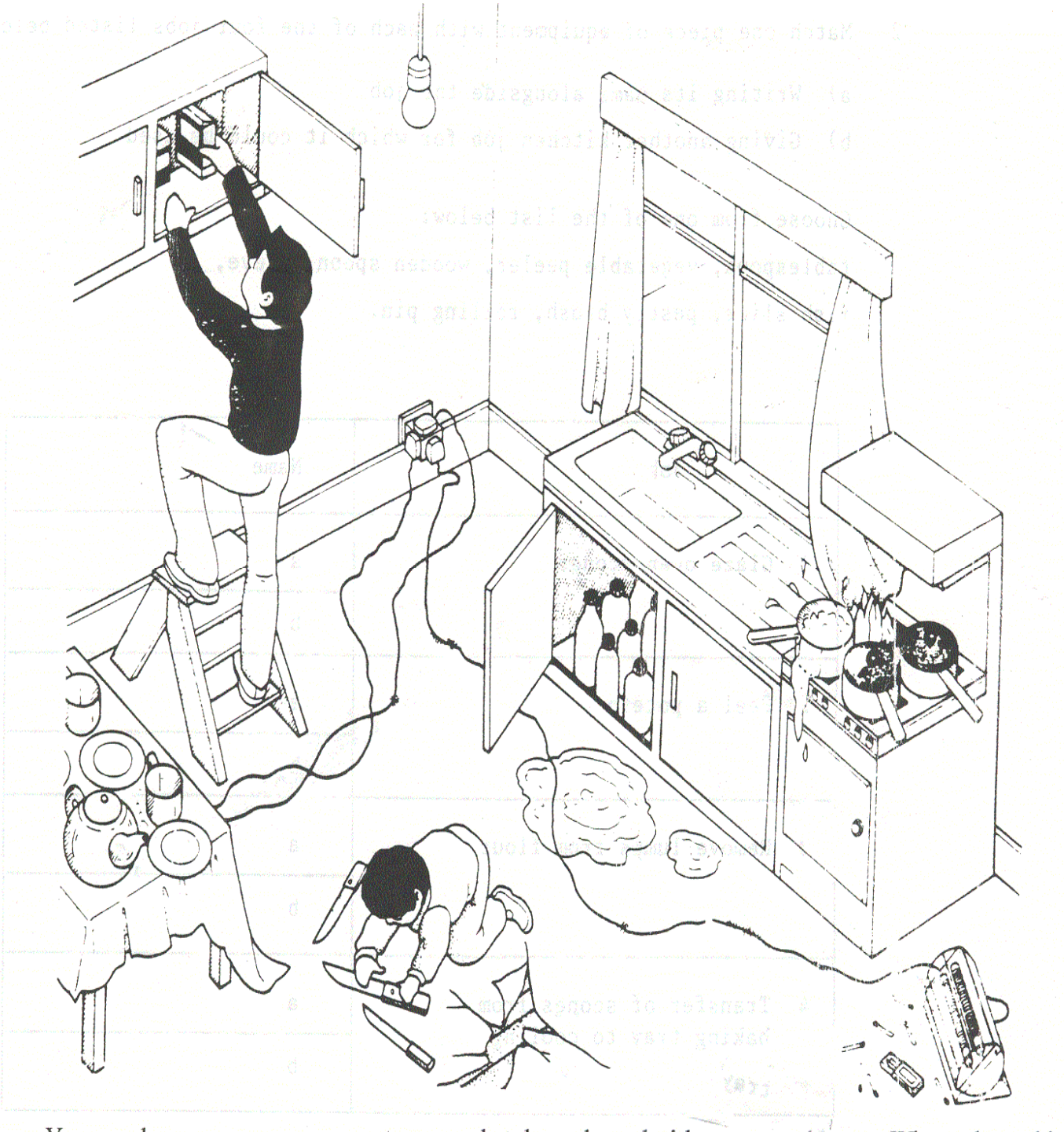
Always cut margarine or butter with a knife.

Safe Practice in the Kitchen

Accidents are something we all hope to avoid, but they are common e.g. burns, scalds, cuts, slips, trips, falls, poisoning, chemical burns, electrocution.

Approximately 1,100 Scots die and thousands more are left with injuries or disabilities each year as a result of accidents.

Examine the picture below, highlight or circle and number all the hazards and potential accidents you can spot, list under the correct headings on the opposite page.



HAZARDS AND TYPES OF ACCIDENT

HAZARD	TYPE OF ACCIDENT
Teapot	<ul style="list-style-type: none">➤ Burn/scald from hot liquid/steam➤ Slip/fall on spilt tea



Questions

WASHING UP/PERSONAL HYGIENE

1. Give 2 reasons why is it important that you use hot water and detergent to wash your dishes.

- _____
- _____

2. Why should a clean cloth and tea towel be used each time you wash dishes?

3. Sharp knives should be washed with care, explain why.

4. a. When chopping with a sharp knife what other piece of kitchen equipment must you use?

b. Why should you use it?

5. Why should you always wear a clean apron when working with food?

6. What units of measurement do we use on weighing scales?

7. Approximately how many grams are in each of the following handy measures?

1 rounded tablespoon of flour _____

1 level teaspoon of sugar _____

8. State the 2 rules for the correct use of a measuring jug.

a. _____

b. _____

How do we cook food?

We cook foods by three methods of HEAT energy

_____, _____ and _____

We also can cook food by MICROWAVE energy.

CONDUCTION

In this method of heat transfer the energy is passed from molecule to molecule through metals, liquids like water or stock and gases - steam.

The methods of cookery which use conduction are: BOILING
STEWING
POACHING
DEEP FRYING
SHALLOW FRYING

Look at your recipes and give two examples of foods which are cooked by conduction.

CONVECTION

In this method of heat transfer currents of hot liquid or gas rise upwards transferring the energy to the food. The methods of cookery which use convection are: BAKING

STEAMING

Look at your recipes and give two examples of foods which are cooked by convection.

RADIATION

In this method of heat transfer rays of heat passing through the air transferring the energy onto the food. The method of cookery using radiation is GRILLING

Look at your recipes and give two examples of foods that are cooked by radiation.

MICROWAVE energy is not a method of heat transfer but causes foods to be cooked by the water molecules in the food vibrating. Microwave energy is only able to penetrate 5 cm into food so the centre of many foods is cooked by conduction. Standing time must be observed to allow conduction to take place.

ACCIDENTS AREN'T ACCIDENTAL

Answer the following questions as you watch the video: -

1. How many people require emergency treatment after working in the kitchen?

2. Which household object causes most accidents?

3. Foods like bread and tomatoes with crusts or skins require a special knife blade, what is the blade called?

4. Why is a "dull" (blunt) knife dangerous?

5. Why should knives be stored safely?

6. Why should you never clean up broken glass with a cloth?

7. When letting steam out of pans how should you lift the pan lid?

8. Why do you pierce foods before microwaving?

9. What should you do if you smell gas?

10. Why should electrical equipment not be used near water?

Bacteria Thermometer

The thermometer on the opposite page shows different temperatures that are important to bacteria.

Below 0°C food poisoning bacteria become **DORMANT**. (The bacteria are asleep)
Your deep freeze works at **-18°C**, preserving the foods as there is no active bacterial growth, keeping the food safe

Above 0°C bacteria are gradually becoming awake but are unable to multiply.

You will find your refrigerator works between **0°** and **4°C** keeping food chilled but not frozen. Most bacteria do not react to the chill and remain inactive.

Between 4°C and 63°C food poisoning bacteria become active and this is known as the **“DANGER ZONE”**.

* Food poisoning bacteria are happiest at **the optimum temperature of 37°C - the same temperature as our body. (Our stomach are be an excellent incubator for bacteria.)**

Above 63°C conditions become more difficult for the bacteria as it gets hotter and hotter. By 73°C most bacteria are destroyed by the heat.

100°C - boiling point – almost all food poisoning bacteria are killed

What do food poisoning bacteria require in order to grow and multiply?

- **Warmth**
- **Food**
- **Moisture**
- **Time**

Given the ideal conditions bacteria multiply every 10-20 minutes.

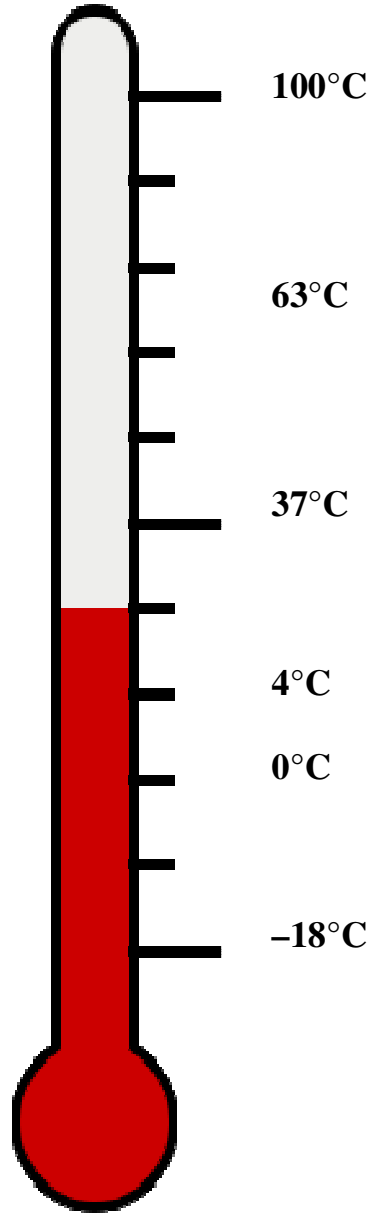
1 bacterium	10 minutes in at 37°C	2 bacteria
2 bacteria	20 minutes in at 37°C	4 bacteria
4 bacteria	30minutes in at 37°C	8 bacteria
8 bacteria	40 minutes in at 37°C	bacteria
bacteria	50 minutes in at 37°C	32 bacteria
32 bacteria	1 hour in at 37°C	bacteria
bacteria	70 minutes in at 37°C	128 bacteria
128 bacteria	80 minutes in at 37°C	bacteria
bacteria	90 minutes in at 37°C	bacteria
bacteria	100 minutes in at 37°C	bacteria

In 3 hours 20 min. 1 = 1,000,000

Germ Thermometer

The diagram below shows what happens to germs at different temperatures.

At 100° C all bacteria are dead
Above 63° C the spread of bacteria begins to slow down as conditions get hotter
Between 4° C and 63° C bacteria begin to slow down as conditions get hotter.
Bacteria are at their most comfortable at the ideal temperature of 37° C. This is the same temperature as our own bodies. Our stomachs make an excellent home for bacteria. The stomach is like an incubator which keeps a new born baby's temperature at the correct level.
A refrigerator works at 4° C keeping food <i>chilled but not frozen</i> . Bacteria do not react to the chilly temperatures and remain inactive.
Below 0° C bacteria become dormant .
At an even lower temperature of -18° C the deep freeze preserves food safely as the bacteria are inactive due to the extreme cold.



*In England the danger zone starts at 5°C. At 5°C the bacteria, *Listeria* can multiply and this can be fatal to young children, elderly people and pregnant women. *Listeria* is found in foods such as cheeses made with unpasteurised milk and pates. It is recommended pregnant women avoid these foods as *Listeria* can cause abortion of healthy foetus.



Hazards in the Kitchen

Why are the following situations hazardous? What you should do to prevent accidents?

1. Pan handle over the front of the hob.

Hazard _____ Avoid by _____

2. An open tin left sitting on the work surface.

Hazard _____ Avoid by _____

3. A spill of liquid on the floor.

Hazard _____ Avoid by _____

4. Broken glass on the floor.

Hazard _____ Avoid by _____

5. Taking out an electrical plug with wet hands.

Hazard _____ Avoid by _____

6. A strong smell of gas.

Hazard _____ Avoid by _____

- 7. Knives should be stored by**
- a) in a drawer with cutlery
 - b) left lying on a work surface
 - c) in a knife block

- 8. Cleaning chemicals should be stored by**
- a) leaving on the work surface
 - b) in a cupboard with a child lock if required
 - c) in a plastic bag on the floor

- 9. How many plugs should be in a single electrical socket?**
- a) 4
 - b) 2
 - c) 1

10. You have burnt your wrist on the oven shelf as you took your cake out of the oven, how should you treat it ?

Prevention of Food Poisoning

Food poisoning is caused by inappropriate **kitchen hygiene, personal hygiene or food hygiene** **OR** it can be a combination any of them!

Food poisoning bacteria causes illness and can prove fatal in rare cases. The most common symptoms are **stomach cramps, diarrhoea** and **vomiting**.

Using the laminated sheet copy the comments into the correct columns below.

Personal hygiene	Kitchen hygiene	Food hygiene

HYGIENE ISSUES

The statements below are all related to personal or kitchen hygiene, you must decide which are correct or true and which are incorrect or false.

Jewellery must be worn as it can encourage bacterial growth. T / F

Cuts must be covered with a blue plaster to prevent the spread of bacteria. T / F

All food waste must be placed in a covered bin to prevent the spread of bacteria. T / F

Tins that have dents are safe to be put in the cupboard for use in future. T / F

Waste bins should have no lids to attract flies and vermin. T / F

Separate cloths should be used for washing/drying dishes and hands. T / F

Fruits and vegetables are safe to use without washing. T / F

Surfaces should be cleaned correctly only after food preparation. T / F

Nail-varnish can be worn when preparing foods. T / F

Hands must be washed with soap after being at the toilet, after touching raw foods and before you start to prepare food. T / F

Animals should be allowed into food preparation areas as they would not contaminate food with their fur and bacteria. T / F

Do not prepare food for others if you are suffering from any infections as you could spread bacteria. T / F

Uncooked foods are safe to store on the top shelf of the fridge. T / F

Clean protective clothing does not need to be worn to prevent the spread of bacteria from clothes to food. T / F

Perishable foods should be stored in the fridge. T / F

All dirty crockery should be washed in hot water to remove leftover food and prevent the growth of bacteria. T / F

Food Hygiene - The Movie

1) What are the main symptoms of food poisoning?

2) Which groups are the most likely to die as a result of food poisoning?

a. _____ b. _____

3) What do bacteria need to grow?

a. _____ b. _____ c. _____ d. _____

4) What are the chief sources of bacterial contamination?

5) How should vegetables and fruits be treated before eating?

6) List the things the chef does wrong:

1) _____

2) _____

3) _____

4) _____

5) _____

6) _____

7) _____

8) _____

9) _____

10) _____

7) How is bacteria destroyed in chicken?

8) What is cross-contamination?

9) What types of pests can carry bacteria?

10) Complete the following:- "Clean as _____"

EXTENSION

Use "SKILLS IN FOOD TECHNOLOGY" pages 20 and 21 to answer the questions below.

Question 1

Question 2

- _____
- _____
- _____
- _____

Question 3

The Danger Zone is _____

Food can be kept out of the Danger Zone by

- _____
- _____
- _____

CROSS CONTAMINATION

In 1996 the number of reported food poisoning incidents in Scotland was 5396. 496 of those affected (including 21 deaths) were as a result of poor practice in a butcher's shop in North Lanarkshire.

In 2000 the number of reported cases of food poisoning had increased to 9263, an unacceptably high figure. The Food Standards Agency had set a target for 2006 of reducing the 2000 figure by 20%. They hoped to achieve this by raising public and professional awareness of food hygiene – the 2006 figure was 6983

- The 2008 notified food borne disease figures for Scotland were 7612.
- The main cause of the illnesses was found to be the bacteria CAMPYLOBACTER.
- Campylobacter is commonly found in chicken.
- 50 – 80% of chicken contains campylobacter bacteria.
- Campylobacter is harmless if chicken is cooked properly (the core temperature reaches more than 100°C).

Cross contamination is possibly the most common cause of food poisoning and it can be easily avoided.

What is cross contamination?

It is when food poisoning bacteria is transferred from one food (usually raw) to another food. The bacteria can be transferred directly when one food touches or drips onto another. Hands, equipment, work surfaces or utensils such as knives can also transfer bacteria indirectly, e.g. using the same knife to cut raw chicken and to chop cucumber for a salad. The chicken could be carrying the food poisoning bacteria, salmonella and this would be passed onto the cucumber, which is to be eaten uncooked.

How can we prevent cross contamination?

-
-
-
-
-

SAFE STORAGE OF FOODS

Why is correct food storage so important? If we do not store food properly it will deteriorate very quickly. This can cause food poisoning and it is also a waste of resources.

Remember the three Cs

Keep it **c** _ _ _

Keep it **c** _ _ _ _

Keep it **c** _ _ _ _ _

Foods are separated into several different types and their storage needs are related to their type.

Perishable foods – meats, cheese, fish, dairy items

Dry goods – flour, sugar, dried herbs, spices,

Preserved foods – tinned, vacuum packed, bottled, dehydrated, jams/chutneys, UHT etc

Fresh foods – fruits and vegetables

If foods are not stored correctly any food poisoning bacteria present will multiply causing contamination. Food poisoning bacteria have no easily detectable characteristics – the food can look, smell and taste perfect but can make you very ill.

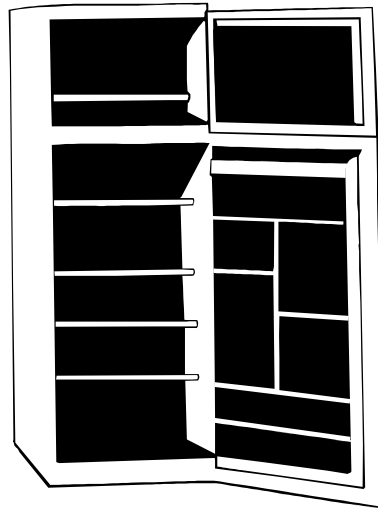
- Foods kept incorrectly may also develop a visible form of food spoilage, like the mould that occurs on cheese.
- Foods, which are to be served cold, should be stored in the fridge until required for preparation/eating.
- Foods, which are to be served hot, should be cooked as close to service time as possible.
- If a food is to be reheated it should be heated to a minimum of 83 °C.
- **FOOD SHOULD NEVER BE REHEATED MORE THAN ONCE**

Why the cupboard is suitable storage for some foods and not all?

Freezer/Fridge

Think about each item from the shopping list below, decide where is the correct position in the fridge/freezer to store each item. There may be more than 1 correct answer. Justify your decisions.

- 2 litres semi-skimmed milk
- 250 g red cheddar
- 1 jar mayonnaise
- 1 packet smoked bacon
- 500 g chicken fillets
- 250 g green peas
- 250 g butter
- 6 eggs
- 250 ml whipping cream



Why should you empty open tins of food into a container before placing in the fridge?



Hygiene Questions

Complete the following statements

Cooked and raw foods must be stored apart to prevent bacteria _____

Wash all work surfaces thoroughly after preparing raw foods as _____

Hands should be washed thoroughly after handling raw foods to prevent _____

Wooden chopping boards and cracked/chipped crockery should not be used as

Cleaning cloths should be correctly washed after every use to prevent _____

Foods should be covered when ever possible as _____

Cooked foods which are to be stored for later use should be refrigerated as soon as possible to prevent

Defrosting foods should be stored _____



HYGIENE & SAFETY

1. Why should you not lick fingers/spoons when cooking?

2. Why should pets be kept out of the kitchen?

3. How should kitchen surfaces be cleaned before you begin to cook?

4. Which of the following temperatures should your fridge be at? -4°C , 4°C or 14°C

5. How can you kill food poisoning bacteria - freeze it, refrigerate it or boil it

6. What happens to food poisoning bacteria when the temperature falls below 1°C ?

7. Why do fruits and vegetables need to be washed before preparation/eating?

8. Which groups of the population are most likely to be affected by food poisoning bacteria?

9. What are the main symptoms of food poisoning?

Why is food cooked?

Foods are cooked because:-

- Some foods can be poisonous if eaten uncooked,

e.g. raw egg _____

Kidney beans _____

- Some foods are easier to digestive if they are heated/cooked

e.g. cheese _____

other examples are:

- Foods are often cooked in order that they will keep for longer, e.g. jams, marmalades, pickles.
- The cooking of foods alters all appearance, texture, smell and flavour, many people may prefer foods cooked to raw or vice versa.
e.g.
- Smells of foods are very important as they help to stimulate the appetite,
list of foods you like the smell of.
- Cooking foods also allows us to have variety in our diet,
list as many ways to cook potatoes as you can
(you can include recipes and commercial products)

Name:

Class:

At the end of each practical lesson fill in this worksheet under the appropriate recipe, judge your performance on a grade 1 – 4.

Grade 1: Very good

Grade 2: Good

Grade 3: OK

Grade 4: Having some difficulty

	Egg Sandwich	Fresh fruit salad	Pasta salad	Lentil soup	Bacon roll	Chicken and apple skewers	Mince and potatoes	Spicy chicken tortilla	D&M Pasta Salad	Fruity bread and butter pudding	Dutch Ring	Scones	Rock cakes
I chose the correct equipment													
I used the equipment safely													
I worked in a hygienic manner													
My unit was well organised													
I followed my recipe													
Comments													

