Topic: Cooking methods

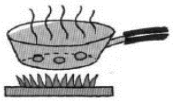
Braising

Pieces of food are first browned in a little fat, then cooked with some liquid in a closed pan.

Deep-frying

Frying pieces of food in a deep pot or fryer with plenty of hot oil or fat.

Sautéing

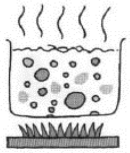


Cooking small or thin pieces of food in a little very hot oil or fat. The frying pan is shaken constantly to stop the food from burning.

Flambéing

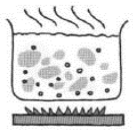
After frying, alcohol is added to the food in the frying pan and set on fire. This gives added flavour to the food.

Boiling



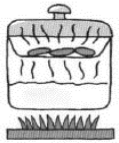
Food is cooked in deep boiling liquid [water, stock, wine etc.] in an open or covered saucepan.

Simmering



Like boiling, but the liquid is kept just below boiling point in an uncovered pot.

Steaming

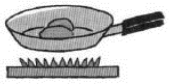


Food is placed on a container and cooked in the steam from boiling water in a covered pan or steamer.

Stewing

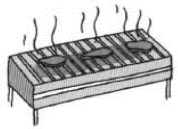
Cooking food in its own juices with a little additional liquid, in a covered pan, at simmering point.

Pan-frying



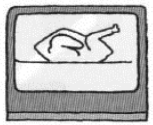
Frying food in a little oil or butter using a frying pan over moderate heat.

Broiling/grilling



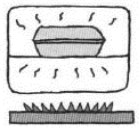
Cooking food like steak or fish, over or under open heat, e.g. under the oven grill, or on a barbecue or hot plate.

Roasting



Cooking food like meat or poultry with some fat in a hot oven [between 200-240 degrees centigrade].

Baking



Cooking food like cakes, pies, bread etc. in a closed oven at a temperature of between 120-240°C.

Cooking methods can be categorised as wet/ dry and fast/ slow.

Wet or dry refers to the texture of the cooked food so baking and frying are dry cooking methods and boiling and stewing are wet methods.

Fast and slow methods refer to how long it takes. Generally less than an hour is a fast cooking method and over an hour is a slow cooking method.

Braising Beef Lamb Veal	Deep frying Chips Doughnuts	Sautéing Garlic Onions Mushrooms	Flambéing Steak Cherries Crepes
Boiling Pasta Noodles Potatoes	Simmering Custard Soup Curry	Steaming Broccoli Fish Asparagus	Stewing Lamb Beef Carrots
Pan frying Eggs Shellfish Potatoes	Grilling Sausages Lamb chops	Roasting Chicken Potatoes Parsnips	Baking Cakes Biscuits Pies

Conduction

How is heat transferred to food?

1. Convection
2. Conduction
3. Radiation

This happens when heat is directly touching a piece of equipment, or a piece of food.

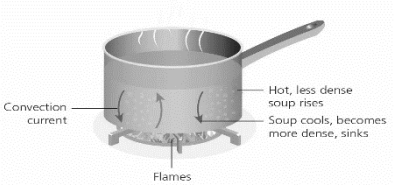
- If you put a metal pan on an electric or gas hob, the heat from the hob will heat up the base of the pan.
- There are good conductors of heat, and bad conductors of heat.

Metal conducts heat very well, which is why saucepans and frying pans, along with baking trays and cake tins, are made of metal

Water is also a good conductor of heat, which is why boiling foods works well and cooks foods quickly

Wood, plastic, cloth and glass are poor conductors of heat.

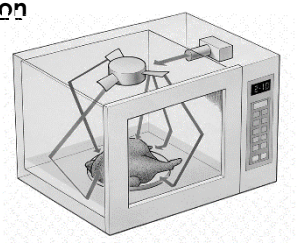
Convection



This only happens in liquids and gases.

- The molecules of liquid or gas nearest the hot base of the pan gain heat energy, and start to rise in the pan.
- As the liquid rises to the top of the pan, it will begin to cool again, so starts to drop back top the bottom, where it will be heated up again.
- There is a convection current moving in the pan. Convection currents also happen in ovens.
- Hot air rises and cooler air falls.
- A convection oven uses a fan to move the heat around, so every part of the oven is approximately the same temperature.

Radiation



This occurs through space or air. Radiation transfers energy through space by invisible electro-magnetic waves. The waves are either infra-red or microwaves

Infra-red heat waves are absorbed by the food when they reach it, and they create heat inside the food which cooks it.

This happens when you put food under a grill.

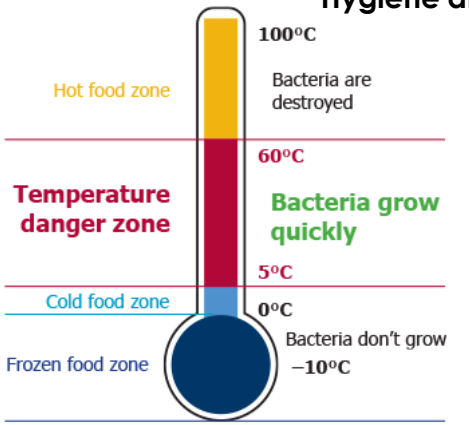
Cooking foods in microwaves also uses radiation. The microwaves are created by a magnetron inside the oven. The microwaves are absorbed by the food, making the molecules vibrate and heat up, which then cooks the food.

Microwaves pass straight through glass, china and plastic, and do not heat them up.

Metal will reflect the microwaves and damage the magnetron so do not put metal object into a microwave oven.

Hygiene and safety

- The temperature danger zone is between 5°C and 60°C, when it is easiest for harmful bacteria to grow in food
- Minimise the time that food spends at these temperatures in order to keep food safe
- Refrigerated food needs to be kept at 5°C or below
- Hot food needs to be kept at 60°C or above



High Risk Foods

Foods particularly susceptible to contamination if not handled, stored or cooked properly include:

- raw meat and poultry
- raw eggs
- raw shellfish
- unpasteurised milk
- "ready-to-eat" foods

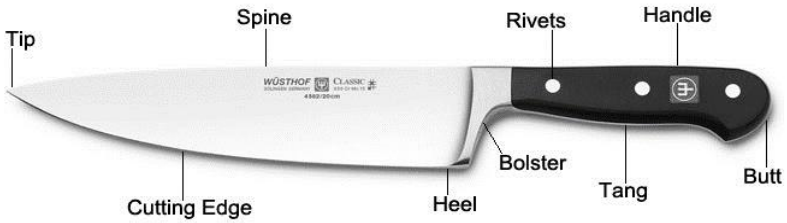
The 4 Cs (To prevent the transfer and growth of bacteria)

Cooking- heating food to over 75°C in the middle for over 2 minutes to kill the bacteria
Cleaning- cleaning your hands, equipment and work surfaces prevents the transfer of bacteria to food.
Chilling- storing high risk foods between 0-5°C to slow the growth of bacteria.
Cross contamination- keeping raw and ready to eat food separate to prevent the transfer of bacteria.

Washing up

1. SCRAPE – as much of the food off the plates and dishes as you can.
2. SORT – Put all of the dirty dishes and pans neatly stacked by the sink. Not **in** the sink.
3. STACK – Stack in order. Glasses, cutlery, china and lastly saucepans
4. Get all of the equipment ready to help you clean really well.
5. Washing up liquid, dishcloth, scourer, brush and tea towel.
6. Fill the sink with **HOT** soapy water. It should be **almost too hot** for your hands to bear.
7. Now wash up all of your items.
8. Wash cleanest items first, one item at a time.
9. Do not put all your washing up into the sink together.
10. Wash in the order of glasses, cutlery, plates or dishes, then lastly saucepans.
11. If the water is too dirty change to clean hot water and continue.
12. Drain the items upside down on the draining board. Then dry really well with a clean tea towel.

Potential hazards in the kitchen



What	Why
Bags/ blazers	Can be tripped over
Unattended oven/ hob	Pans can boil over, food can burn, fires can start
Liquid on floor	Can be slipped on
Equipment on the edge of work surface	Can fall off and break
Pets/ pests in the kitchen	Can spread bacteria to surfaces/ food.
Long hair not tied up	Can become tangled in equipment such as electric whisks
Pan handles sticking out over a walk way	Can be knocked off and burn/ scald you.

Hazards vs Risks	
Hazards are something which can cause illness or injury.	A risk is how likely that thing is to happen and if it does how severe it would be.
E.g. A hazard of not refrigerating raw chicken is bacteria will grow on it.	This is high risk because it will definitely happen, given enough time.

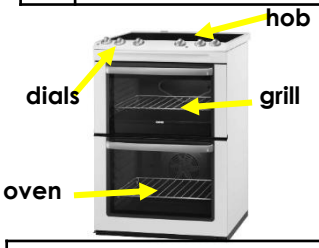
Knife safety rules

- Store in a knife block, drawer or roll
- Carry by the handle, at your side pointing downwards
- Never run with a knife
- A sharp knife is a safe knife
- Never leave in the washing up bowl
- When cutting; eyes on your blade
- Always cut away from yourself
- Never grab a falling knife
- Clean knives safely
- Only cut on a chopping board

Key words	
Bacteria	Micro-organisms which can be harmful once inside the body and make us ill.
Cross Contamination	Transferring bacteria from raw to ready to eat foods. Often through not washing hands or equipment after handling raw foods
High risk food	Foods bacteria can multiply quickest on because they are high in protein and moisture e.g. Chicken, milk, cooked rice.

Topic: Large Equipment

How do I use the oven?	
1	Preheat the oven to the correct temperature
2	Put in food using oven gloves
3	Set the timer
4	Remove food using oven gloves



The **hob** is used for heating sauce pans, frying pans, griddle pans etc.

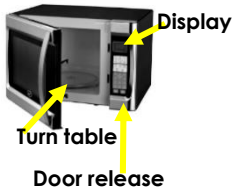
Be careful not to leave pan handles sticking out where they can be knocked off.

What powers different cookers?

Gas	Charcoal	Sunlight
Electricity	Wood	Coal

What is a salamander?

- A culinary grill characterised by very high temperature overhead electric or gas heating elements.
- Takes less cooking time than other techniques, reducing preparation time.
- Similar to an oven without a front door, with the heating elements at the top.
- More compact; typically only half the height and depth of a conventional oven.
- Primarily in professional kitchens for overhead grilling, toasting, browning of gratin dishes, melting cheeses onto sandwiches, and caramelising desserts such as crème brûlée.



How do I use the microwave?	
1	Place food in a suitable container and cover if necessary on the turntable
2	Select which power setting is required
3	Set the timer
4	Press start

What is a deep fat fryer?

Deep fryers are used for cooking many fast foods, and making them crisp. Modern fryers feature a basket to raise food clear of the oil when cooking is finished. Fryers often come with features such as:

- Timers with an audible alarm
- Automatic devices to raise and lower the basket into the oil,
- Measures to prevent food crumbs from becoming over cooked
- Ventilation systems to reduce frying odours
- Oil filters to extend the usable life of the oil
- Mechanical or electronic temperature controls.

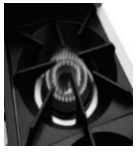
What is a toaster?

- Electric elements heat and toast the bread from both sides.
- Traditionally used for toasting slices of bread
- You can buy toasting bags for making hot sandwiches in the toaster.
- There are also some sweet products (available for breakfast) e.g. Pop Tarts that you can also put in a toaster.

What is a food processor?

- A kitchen appliance used to help with repetitive tasks in the preparation of food, such as cutting, blending, grating and mincing.
- Food processors are similar to blenders in many forms.
- The primary difference is that food processors use interchangeable blades and disks (attachments) rather than a fixed blade.
- Also, their bowls are wider and shorter, a more appropriate shape for the solid or semi-solid foods usually worked in a food processor.
- Usually, little or no liquid is required in the operation of the food processor, unlike a blender, which requires a certain amount of liquid for the particles to move around the blade.

Large Equipment		What is it used for?	Safety precautions	How to clean	Dishes it can prepare/ finish
	Conventional Oven	Used for roasting, baking, casseroling and heating pre made foods.	Use oven gloves when putting food <u>in</u> and taking food out the oven. Move shelves <u>before</u> turning the oven on.	Before you make a start, make sure that the oven is off and cool. Wearing rubber gloves, remove any bits of food that you see lying inside the oven. Next, remove the shelves from the oven and soak them in warm, soapy water. Next, spray or sponge the product into the corners of the oven. Meanwhile, use a scourer to scrub the oven racks clean. Turn them halfway through to make sure that they are clean on both sides. Rinse with warm water and set aside to dry.	Meat, casseroles and baked goods such as bread, cake and other desserts.
	Combination oven	A combi oven is an oven with three functions: convection, steam and combination cooking. In the convection mode, the oven circulates dry heat. The steam mode injects water into the oven.	Use oven gloves when putting food <u>in</u> and taking food out the oven. Move shelves <u>before</u> turning the oven on.	Don't pour liquids, grease or food scraps/debris down the drain inside your combi oven. Doing so can cause the drain to block. Always ensure that the drain screen is always in place. Avoid using any abrasive cleaning equipment to clean your combi oven Put your oven through the cleaning cycle if it has one.	Pastries and breads but can also poach fish, rice and vegetables.
	Bratt Pan	Braising, boiling, steaming, poaching, stewing, roasting, deep-fat frying and shallow frying. They are typically used in mass catering establishments such as schools, hospitals etc. for producing large volumes of food	Be careful especially when tilting the pan to avoid oil or hot water spilling and scalding you.	Tilt the pan. As bratt pans usually have a central spout, any remaining food is easily removed ready for cleaning. Degrease/ wash with hot soapy water.	Chips, pasta, stews, poached or steamed vegetables.
	Rice cooker	An automated kitchen appliance designed to boil or steam rice. It consists of a heat source, a cooking bowl, and a thermostat. The thermostat measures the temperature and controls the heat.	The rice cooker and lid will become hot during use. Use over gloves to handle the lid and allow to cool before cleaning.	The inner pot can be removed and left to soak. Use soap and hot water. If there is a thick layer of rice stuck to the inside of the pot, remove it with a plastic spoon or spatula before soaking for optimal results. Wash the utensils of the rice cooker while the pot is soaking. If there are still some hard bits of rice stuck to the inside of the pot, you can take a spoon and carefully scrape them off.	Rice. Some can steam other foods such as dumplings and vegetables too.
	Bain-Marie	A type of heated bath, is a piece of equipment used to heat foods gently and gradually to fixed temperatures, or to keep materials warm over a period of time. A bain-marie is also used to melt ingredients for cooking.	The main hazards are burns and scalds. Where oven gloves when removing compartments to avoid this.	1. Switch and allow to cool completely before attempting to clean. 2. Remove all compartments and wash in Dishwasher wash by hand 3. Dry the compartments, lids and dividers thoroughly. 4. Wipe surfaces and sides of the Bain Marie with a clean disposable cloth/paper towel to remove food debris. 6. Spray the surface to be cleaned with a sanitizer. 7. Allow 30 seconds contact time then wipe down, rinse and dry.	It is used to keep a wide range of food hot such as curry, pasta, custard, vegetables and casseroles.
	Pasta machine	Sheets of pasta dough are fed into the machine by hand, and by turning a hand crank, rolls the pasta thinner incrementally. On the final pass through the pasta machine, the pasta may be directed through a machine 'comb' to shape the pasta noodles as they emerge.	Keep finger away from rollers as they can become pinched. Tie long hair and dangling jewellery/ ties back to avoid them becoming entangled.	Let parts air dry for one hour and then remove any dried dough using the Cleaning Brush. If dried dough cannot be removed, try hand-tapping the attachment. A toothpick can be used if necessary. Never use a knife or other sharp object to remove excess dough. Polish with a soft, dry cloth and store attachment pieces in a dry place at room temperature.	Any fresh pasta.

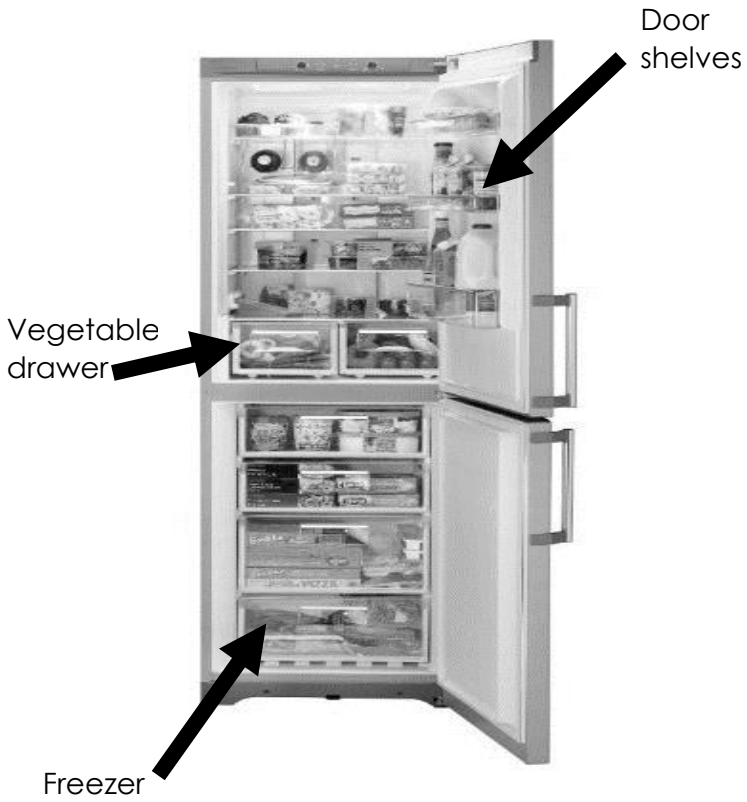
Large Equipment		What is it used for?	Safety precautions	How to clean	Dishes it can prepare/ finish
	Griddle	A flat cooking surface with a heat source underneath. A griddle can be a piece of cookware, such as a cast iron griddle that is heated over a hob, or it can be built into a range	Always use an oven mitt when working with a griddle. As the griddle gets hot. Also use a spatula.	When you are finished cooking, scrape off all the food reside and cooked bits from your griddle. It can be helpful to follow that by wiping the griddle clean with a damp rag. Wear protective gloves, as the griddle will still be hot. Finally, add a thin coat of cooking oil, wipe it down with a rag.	Bacon, pancakes, French toast, hash browns, burgers and other hot sandwiches
	Mixer	A kitchen utensil which automates the repetitive tasks of stirring, whisking or beating. When the beaters are replaced by a dough hook, a mixer can also knead.	Always use the guard on the mixer as rotating attachments can cut, entangle or stab.	Unplug the stand mixer before you begin the cleaning process. Immerse only the beaters into the sink and scrub them with a sponge. Wipe the rest of the commercial mixer using a soapy, soft cloth. Use the sponge to scrub off hard-to-remove material if necessary. Rinse off the beaters and the rest of commercial mixer and dry.	Cakes, biscuits, breads and scones.
	Blender	An appliance that mixes foods together, in particular an electric mixing machine used for liquidizing, chopping, or pureeing.	Fasten the lid firmly in place. Cool hot liquids before blending. Always open the lid away from your face after blending hot foods.	Use care when washing your blender. Pour one drop of liquid dish detergent into the container base. Fill one third full with warm water and secure the lid. Blend on high for 35 to 45 seconds. After stopping the machine, rinse the container and lid well with hot water and wipe dry. You also can put your blender in the dishwasher, but don't put it in with the blades still attached. Over time, blades get dull if they are washed in the dishwasher.	Soups, smoothies and sauces.
	Chinese burner wok cookers	This type of cooker allows foods to be stir-fried at a very high heat. The wok is heated by a flame underneath a ring which holds the wok and provides stability and concentrates heat.	The wok will become very hot and special long handled spatulas or ladles needs to be used to avoid being burnt.	To clean the wok burner ring wait until it has completely cooled down after cooking. Remove from the stove top and clean in hot soapy water with wire wool or a scouring pad. Dry thoroughly afterwards. Remove any food debris from around the burner using a dish cloth and hot soapy water.	Stir fries, curries, soup and dumplings.
	Open ring stoves	These stoves an open flame coming up directly from the centre of the burner which creates more direct heating to the pan. It results in more even and faster cooking than on the sealed burners.	As with any open flame hob do not leave oven gloves or clothes on top which could catch fire.	Wait until the stove has cooled down after use. Remove the burner and other components. Wash all in hot soapy water using wire wool or a scouring pad to remove burnt on food. Dry thoroughly afterwards. Remove any food debris from around the stove using a dish cloth and hot soapy water.	Stir fries, pasta, potatoes, rice and eggs.
	Tandoori Oven	Also known as a tandoor; a variety of ovens, the most commonly known is a cylindrical clay or metal oven used in cooking and baking at high temperatures (480 °C).		Clean the burner twice a year. You can use a brass bristle brush for gentle scraping in cleaning process. Make sure that all of the burner openings are clear. Use a wire brush for ignitor cleaning. Use a stiff long handled brass brush to scrub the tandoor plates.	Flatbreads, curries, kebabs and samosas.
	Steamer	A small kitchen appliance used to cook or prepare various foods with steam heat by means of holding the food in a closed vessel reducing steam escape. Can be made from bamboo, metal or plastic.	Be careful when removing he lid as steam can escape and scald you.	If using hardwater you will need to decalcify the steamer if it is made from metal or plastic. Just fill the water tank with 1/3 white vinegar and 2/3 distilled water. Run the steamer until half the mixture has steamed. Unplug and allow it to rest for 30 minutes. Rinse and repeat... as many times as necessary until steam returns to normal (could be 2-3 times).	Dumplings, Chinese buns, vegetables, chicken and fish.

Cleaning

It is important to clean the dials and handles on a cooker and the inside of microwaves and fridges regularly, otherwise bacteria can build up and contaminate food.

Fridges/ freezers

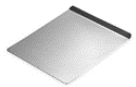
Fridges need to be between 0-5°C to slow down the reproduction of bacteria.



Freezers need to be -18°C to stop bacteria reproducing.

Dishwasher

- Nearly all commercial kitchens have a dishwasher.
- It is different to ones you may have at home because it is used more frequently (up 50 loads an hour).
- Commercial dishwashers need to be efficient enough to:
    1) clean the items put through the machine,
    2) hot enough to kill bacteria, and
    3) fast enough to cope with demand.

Small equipment		Material/s it is made from	Safety precautions	Storage	How to clean	Foods it can prepare/ finish
	Teaspoon/ Dessert spoon/ Table spoon	Stainless steel	n/a	Store in a cutlery drawer	Clean with hot soapy water	Any baked goods for measuring ingredients
	Table Knife	Stainless steel	n/a	Store in a cutlery drawer	Clean with hot soapy water	Spreading jams etc.
	Pallet Knife	Stainless steel and plastic	n/a	Store in a cutlery drawer	Clean with hot soapy water	Spreading icing, picking up biscuits.
	Plastic Spatula	Plastic	n/a	Store in a cutlery drawer	Clean with hot soapy water	Scraping cake mixture of a bowl
	Plastic Spoon	Plastic	n/a	Store in a cutlery drawer	Clean with hot soapy water	Stirring soups and sauces
	Grater	Stainless steel and plastic	Be careful of the sharp edge	Make sure it is stored somewhere dry to avoid rust spots	Clean with hot soapy water and a brush	Grating cheese/carrots/ potato zesting lemons/ limes/ oranges
	Vegetable Peeler	Stainless steel and plastic	Be careful of the sharp edge	Store in a cutlery drawer	Clean with hot soapy water	Carrots/ apples/ potatoes/ parsnips
	Sieve	Plastic or Stainless steel	n/a	Store somewhere dry	Do not get wet, knock off left over flour	Cakes/ biscuits/ roux based sauces
	Chopping board	Plastic or wood	Be careful when cutting	Store somewhere dry if wooden	Clean with hot soapy water	Fruits and vegetables/ meat/ fish
	Colander	Stainless steel	Be careful not to drip boiling water	Make sure it is stored somewhere dry to avoid rust spots	Clean with hot soapy water and a brush	Pasta/ potatoes/ fruit and vegetables
	Juicer	Plastic	n/a	Make sure it is stored somewhere dry	Clean with hot soapy water	Lemons/ limes/ oranges
	Mixing bowl	Stainless steel	n/a	Make sure it is stored somewhere dry to avoid rust spots	Make sure it is stored somewhere dry	Cakes/ biscuits/ sauces
	Baking tin	Aluminium	Be care when it has been in the oven as it may still be hot	Make sure it is stored somewhere dry to avoid rust spots	Make sure it is stored somewhere dry	Cakes/ tray bakes/ Pies
	Baking tray	Aluminium	Be care when it has been in the oven as it may still be hot	Make sure it is stored somewhere dry to avoid rust spots	Make sure it is stored somewhere dry	Pies/ tarts/ cakes/ biscuits/ meringues
	Saucepan	Stainless steel/ Aluminium	Turn pan handles so they are not knocked off	Store somewhere dry	Clean with hot soapy water	Sauces/ soups/ biscuits/ cakes
	Wok	Cast iron	hold the handle of the wok to keep it steady when stir frying	Store somewhere dry	With a brillo pad then seasons with oil.	Stir fries/ curries

Topic: Weighing and measuring

	Advantages	Disadvantages	
 **Electronic scales**	Electronic scales are highly accurate; measuring to 1/10th of a gram. They are also the easiest to read as they have a digital display. They can measure both wet and dry ingredients in a variety of both metric and imperial units. They are reliable as they do not rely on the ability of the user to interpret the weight correctly.	They require batteries to work and will break if you get them wet which can make washing up properly difficult.	WEIGHING
 **Balance scales**	They do not require batteries to work and you can clean them easily as they are safe to get wet. The measuring bowl is usually quite large allowing for ingredients to be measured in bulk.	They require a separate set of weights and skill on the part of the user to set up and use the scales correctly and accurately. It can also be confusing if weights have both metric and imperial measurements on them.	
 **Spring balance scales**	They do not require batteries to work and you can clean them easily as they are safe to get wet. They do not require any separate weights.	The bowl is significantly small than the one seem on the balance scales. It can be difficult to read the measurements accurately especially if you have poor eyesight as the integers on the dials are quite small.	

 **Cups**	A measuring cup is a kitchen utensil used primarily to measure the volume (instead of weight like scales) of liquid or solid cooking ingredients such as flour and sugar, especially for volumes from about 50 mL (2 fl oz) upwards. Usually used in US recipes.	MEASURING
 **Measuring jugs**	Measuring jugs can be used to measure large amounts of wet ingredients. They are available in metric or imperial units.	
 **Measuring spoons**	Measuring spoons can be used to measure small amounts of wet or dry ingredients. They are available in metric or imperial units. You can buy purpose made sets (see right) but you can also use teaspoons, dessert spoons and table spoons.	

LYMM HIGH SCHOOL

How do I use scales?

1. Put bowl on scales.
2. Set to zero.
3. Carefully and slowly, add ingredients.

There are two systems of measurements; **metric** and **imperial**. Imperial is older and is different in different countries or even regions. Metric is newer and used internationally.

Imperial	Metric
Stone (st)	Kilogram (kg)
Pounds (lb)	Grams (g)
Ounces (ozs)	Milligrams (mg)
Pints (pt)	Litres (l)
Fluid Ounces (fl oz)	Millilitres (ml)
Inches (in)	Centimetres (cm)
Yards (yd)	Meters (m)