

GCSE



CCEA GCSE

Food and Nutrition Food Preparation Skills



For first teaching from September 2017

Food Preparation Skills

Skill 1: Weighing and measuring

The ability to weigh and measure accurately is vital when developing food preparation skills. It is the starting point in any practical; therefore, developing this skill requires attention to detail and precision.

Weight and Volume

Measurements for **solids** are based on **weight**. Solids are also known as ‘dry ingredients’ and include flour, rice and oats.

Measurements for **liquids** are based on **volume**. Liquids include water, fruit juice, milk and stock.

Metric and Imperial

Some recipes use metric whilst others use imperial. You should aim to work in *metric rather than imperial*. This should be considered when researching recipes and whilst writing your plan for the practical assessment in component 2.

Metric	Imperial
Grams	Ounces
Kilograms	Pounds
Millilitres	Fluid ounces
Litres	Pints

When recipes use imperial, conversion tables can be used to convert to metric. It is vital that this is done correctly; otherwise there will be significant errors which could potentially destroy your final product. Conversion tables have been devised in weight (table 1.1) and volume (table 1.2) for your use if required.

- Converting a recipe from imperial to metric

Table 1.1 Conversion tables for weight (dry ingredients)

Ounces	Grams	Ounces	Grams
1 oz.	25g	9 oz.	255g
2 oz.	55g	10 oz.	285g
3 oz.	85g	11 oz.	310g
4 oz.	115g	12 oz.	340g
5 oz.	140g	13 oz.	370g
6 oz.	170g	14 oz.	395g
7 oz.	200g	15 oz.	425g
8 oz.	225g	16 oz. (1 lb.)	450g

Table 1.2 Conversion tables for volume (liquids)

Fluid Ounces/ pints	Millilitres/ Litres	Fluid Ounces/ Pints	Millilitres/ Litres
1 fl oz.	30ml	11 fl oz.	310ml
2 fl oz.	55ml	12 fl oz.	340 ml
3 fl oz.	85ml	13 fl oz.	370 ml
4 fl oz.	115ml	14 fl oz.	400 ml
5 fl oz./ $\frac{1}{4}$ pint	140ml	15 fl oz./ $\frac{3}{4}$ pint	425 ml
6 fl oz.	170ml	16 fl oz.	455 ml
7 fl oz.	200 ml	17 fl oz.	485 ml
8 fl oz.	230ml	18 fl oz.	510 ml
9 fl oz.	255 ml	1 pint	570 ml
10 fl oz./ $\frac{1}{2}$ pint	285 ml	1 $\frac{3}{4}$ pint	1 litre

Equipment

A range of equipment can be used when weighing and measuring:

Kitchen scales:

Traditional kitchen scales will feature a large clock with a dial. In order to be accurate when using this type of scale, consider the following points:

- **Set to Zero:** When the bowl has been placed on the top of the scale, the dial should be manually moved to zero.
- **Eye Level:** When the ingredients are placed in the bowl, the dial will move and the weight is recorded by looking at eye-level.

Digital/ electronic scales are becoming ever more popular. There are many advantages to this type of scale including a high degree of accuracy however, the following points should also be considered:

- **Set to Zero:** The bowl being used to weigh the ingredients should be placed on the scale before it has been turned on and any ingredients added.
- **Batteries:** Ensure the product is checked for power being using and replace batteries regularly

Measuring jug:

Used to measure liquids but some measuring jugs can also be used to measure dry quantities.

Points to consider:

- **CLEAN AND DRY:** ensure jugs are washed thoroughly between uses and dried. Bacteria thrive in moist conditions.
- **OBSERVE:** read and examine the marks on the jug. Be sure you have clearly found the mark you are aiming to reach before you begin.
- **FLAT SURFACE:** avoid holding the jug when measuring as this will lead to inaccuracies. Place the jug on a flat surface and look at eye level when pouring the liquid.

Measuring Spoons

Recipes often include measurements in teaspoons (tsp.), dessertspoons (dsp.) and tablespoons (tbsp.)

Points to consider:

- It can be difficult to get this accurate if you are unsure of heaped spoons and level spoons. A heaped spoon of sugar may cause little variation in the end result however a heaped spoon of baking soda may leave a soapy taste in the final product.
- Use a levelled measuring spoon: If in doubt use a measuring spoon levelled at the top to ensure accuracy.



(www.foodpyramid.com date accessed 7.11.16)

Common problems when weighing and measuring

Action	Problem	Fix
Measuring volume and liquid in a measuring jug	Inaccurate measurements	Use measuring jug for liquid and kitchen scales for solid ingredients such as flour
Estimates of oil, salt and sugar	Incorrect taste and consistency Higher calorie intake	Ensure measuring spoons are levelled
Altering (doubling or halving) the recipe of baked goods	Incorrect taste and appearance of final product Cooking time is altered	Avoid halving a recipe when baking Alternatively you can cook it and when cooled, store in an airtight container or freeze If doubling a recipe, make one batch at a time
Too much flour	Incorrect texture Depending on the product, the end result can be thick, dry, rubbery or tough	Lightly add a spoon at a time into the measuring scale or cup. Always set the scales at zero and look at eye level
Different sized portions	Uneven cooking time Some of the larger portions are undercooked while the smaller will potentially burn	Follow the recipe and ensure you are not over generous or light handed

Skill 2: Knife skills for meat, fish and alternatives

Knives

A range of knives are needed in the kitchen for preparing different ingredients. The main knives used when preparing meat, fish and alternatives are:

Filleting knife: used to fillet fish due to its narrow and flexible properties making it easy to remove the skin.

Carving knife: has a thin, long blade used to carve cooked meat (hot or cold).

Cooks knife: is a large knife with a thick blade used for carrying out a range of cutting duties such as chopping, dicing and slicing.

Health and Safety

When preparing ingredients, it is vital to remember the importance of health and safety.

Points to consider when handling any knife or sharp utensil in the kitchen:

- **SHARPEN:** knives should be sharpened carefully by someone who has received training on such activity.
- **CLEAN:** ensure all utensils have been washed in hot soapy water and have been dried after use. If in doubt about the cleanliness of a knife that has been used to prepare raw meat, clean and dry it again.
- **STORE CORRECTLY:** often knives are stored in a wooden block. They can be stored in a drawer that has been clearly labelled to avoid accidents. Store knives in an organised manner.
- **CHOOSE CORRECTLY:** always use the correct knife for the food you are preparing to avoid accidents
- **CARRY DOWNWARDS:** carry your knife by the handle in a downwards position to avoid injury in the kitchen
- **WARN:** communicate to others if a knife has been left in a place that could cause potential injury.

Cross-contamination

Is a term that describes the contamination of one food product by another. It can happen as a result of unsafe food practices and food handling. The equipment being used in a kitchen can be one of the main causes of cross contamination. Knives must be kept clean and dry. The correct colour of chopping board must be used when preparing all food. When practicing this skill, use a red board to prepare raw meat and chicken and a yellow board to prepare cooked meat.

Demonstrating knife skills in the preparation of chicken

Chicken comes in a variety of forms including fillets, wings, drumsticks and thighs. All chickens begin in whole form and can be cut into portions. Buying a chicken in whole form can be relatively less expensive than buying specific portions.

Portioning a chicken:

There are many cooking resources that can be used to demonstrate this skill in class. You may want to use this as a step-by-step tutorial during your cookery session.

Filleting a chicken:

Fillets of chicken are a popular choice amongst consumers. Chicken fillets are a very lean part of the bird and can be quite expensive when bought this way. You will demonstrate this skill when portioning a chicken.

Points to consider:

- **COOKS KNIFE:** Use a cooks knife that has been sharpened to prevent accidents
- **REMOVE FAT:** Remove all fat from the breast when preparing chicken fillet

General points to consider:

- **RED BOARD:** Cut on a red board as chicken is considered a 'high risk food'
- **HYGIENE:** Wash hands and utensils well after handling raw chicken to avoid cross contamination
- **CHILL:** Keep chicken chilled before preparation and when marinating
- **COOKING:** Cook thoroughly as instructed or until juices run clear
- **STORAGE:** Leftovers can be stored appropriately after cooking
- **AVOID WASTE:** the carcass can be used to make a stock for sauces and soups.

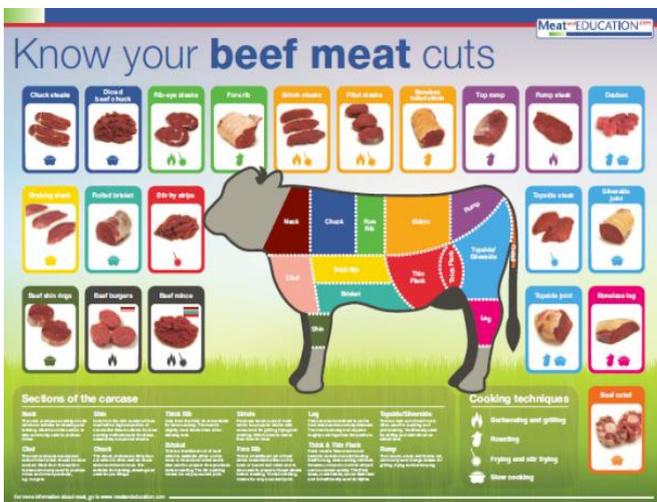
Demonstrating knife skills in the preparation of meat

Meat requires some preparation before it can be cooked. The animal, from which the meat is derived, will go through the slaughter process before the carcass is ready for preparation. There are a range of cuts of meat that are removed with care, precision and excellent knife skills by a trained butcher.

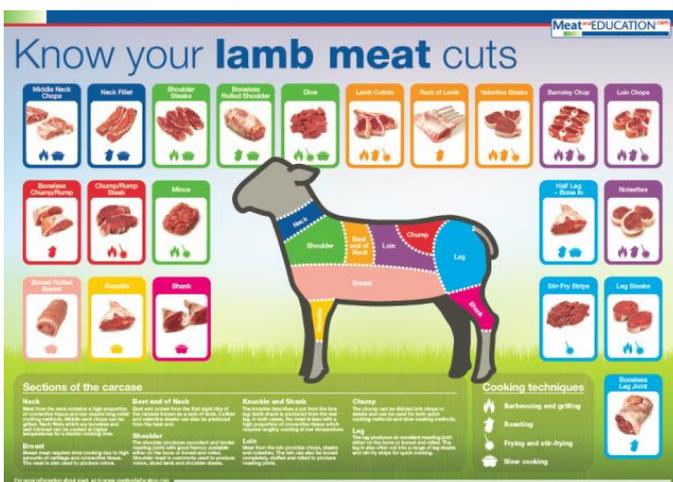


Use the following link to download the poster 'Know your beef meat cuts' and 'Know your lamb cuts'

<http://meatandeducation.redmeatinfo.com/sites/default/files/Know%20your%20beef%20meat%20cuts%20poster.pdf>



<http://meatandeducation.redmeatinfo.com/sites/default/files/Know%20your%20lamb%20meat%20cuts.pdf>



Demonstrating knife skills in the preparation of fish and alternatives



When developing this skill you will need to consider how to prepare flat fish (e.g. plaice) and round fish (e.g. salmon).

General points to consider when demonstrating this skill:

- **USE SCISSORS:** to trim any fins on the head of the fish, either side and back
- **FILLETING KNIFE:** removing the head then fillets from the bone. A round fish will have two fillets. A flat fish will have four fillets
- **REMOVE SKIN:** using the filleting knife and trim fillets.
- **SMELL:** always smell fish to test the freshness. There should be a fresh 'sea' smell not 'fishy' or 'sour'
- **SHINY:** scales and flesh should be shiny, eyes should appear 'bulging' and clear and; gills should be red and free from slime
- **MOIST AND FIRM:** the flesh of the fish should spring back after being touched
- **AVOID CROSS CONTAMINATION:** use a blue board and wash hands/ utensils in hot soapy water after preparation. Store appropriately until cooking/ eating.



Alternatives

As an alternative for meat and fish, consumers may choose to cook with high protein, non-meat alternatives such as Tofu. This is suitable for all groups of people but may be preferred by vegetarians or those with strong cultural beliefs.

Tradition and culture may also see a range of alternative dairy products such as Paneer (unsalted cheese) and Halloumi (goat's cheese).

Skill 3: Techniques for preparing fruit and vegetables

Equipment used in preparation of fruits and vegetables

- **VEGETABLE PEELER:** to reduce waste when peeling potatoes or apples
- **VEGETABLE KNIFE:** or paring knife to cut, shred and slice
- **SCOOP:** for portion control (potatoes) or for presentation (melon)
- **CRUSHER:** for garlic when adding flavour
- **GRATER:** for the zest of fruit when adding flavour and retaining moisture (lemon in Madeira cake). For presentation for a salad (cabbage and carrot in coleslaw)
- **POTATO MASHER:** for a smooth consistency (potatoes or carrot and parsnip)
- **BLENDER:** for a smooth consistency in a soup, sauce or smoothie free from lumps
- **JUICER:** to reduce waste and prevent pips when using the juice from citrus fruits (oranges and lemons)
- **PIPING BAG:** for presentation purposes (duchess potatoes or to top a pie)
- **CORER:** used to remove the centre whilst reducing waste (apples and pineapples.)
- **SPIRALISER:** a technique used to prepare vegetables in a creative and healthy way. Vegetables are prepared to resemble noodles or spaghetti (courgette and sweet potato)



Preparing fruit and vegetables

Points to consider:

- **WASH:** this is vital to remove soil or dirt. Bacteria from soil has been linked to E-Coli food poisoning
- **PEELING:** removing the skin may not be essential. Keeping the skin on will reduce vitamin and mineral loss. The skin can contribute to fibre intake which is useful for the digestive system
- **DON'T SOAK:** water soluble vitamins B and C are lost when vegetables are left to soak in water
- **PREVENT OXIDATION:** prepare fruits and vegetables just before eating. Oxidation will cause vitamin and mineral loss
- **AVOID ENZYMIC BROWNING:** discolouration of fruits and vegetables happens when they are prepared in advanced. Apples, bananas, potatoes and parsnips will turn brown when prepared in advance; a process known as enzymic browning
- **LEMON JUICE:** if you must prepare in advance, lemon juice can be used to slow down enzymic browning

- **BLANCHING:** a technique used to prevent vitamin loss and discolouration. Fruits and vegetables are put in boiling water briefly followed by submersion into iced water. This prevents enzymes being activated.

Knife skills and techniques used when preparing fruit and vegetables

A range of knife skills and techniques are used to prepare fruit and vegetables. Skills in this area will ensure safe handling, improve the presentation of fruits and vegetables; and ensure accurate cooking time.

The following link can be used to demonstrate some of the skills below

<http://www.foodafactoflife.org.uk/VideoActivity.aspx?contentId=73§ionId=62&siteId=14>

Skill/ Technique	Demonstration	Description	Food example
Bridge hold	Place hand into bridge position Cut between finger and thumb safely	Cutting fruit and vegetables into pieces	Onion Apple
Claw Grip	Place hand in claw position and slice Fingers are placed back from the knife and used as a guide	Slicing fruit and vegetables into slices or dices	Cabbage Lettuce
Shredding	Use the claw grip to create long thin strips	Slicing into strips	Peppers Cabbage
Julienne	Remove root and tail then peel. Cut precisely into 2 cm lengths then into slices that are close to identical in size	Cutting vegetables into long thin strips that resemble matchsticks	Carrots Parsnips
Brunoise	From julienne, cut horizontally	Cutting vegetables into very small dice	Carrots Onions
Jardinière/ Batons	Remove the root and tail then peel. Cut into lengths of 1.5cm then slice into 3mm lengths	Cutting vegetables into precise slices that are thicker than julienne (3mmx18mm)	Carrots Parsnips
Macedoine	From batons, cut into even sized cubes	Cutting vegetables into large dice/ cubes	Potatoes Leeks

Fan	Make several slices vertically just past the top of the fruit or vegetable. Arrange in a fan shape	A technique used in improving presentation. Slices are made whilst keeping the fruit or vegetable intact. Final outcome is a 'fan effect'	Strawberries
Twist	Slice the fruit or vegetable then cut past the middle		Oranges Cucumber
Ribbon	Peel long lengths of fruit or vegetable before arranging	Thin peelings that are arranged in creative ways to improve presentation	Carrots Cucumber Courgettes
Waterlily	Cut vegetable in half then create 'v' shaped cuts from the edge to the centre of the fruit or vegetable	An effect that is used to create excellent presentation.	Melon Tomatoes
Segments	Slice the top and bottom from the fruit. Cut into wedges. With citrus fruits, cut the fruit away from its inner skin as close as possible to prevent waste	A technique used to create excellent presentation whilst improving sensory appeal	Apples Tomatoes Oranges Lemons
De-seed	Cut the fruit or vegetable in half then scrape unwanted seeds from the centre	A technique used to improve the taste and texture of fruit and vegetables	Tomatoes Peppers

Skill 4: Soup and sauce making



Soup making

There are many types of soup:

1. Broths (Clear soup)

Broths are traditionally characterised as chunky soups made with meat and vegetables. A clear broth is made using the stock from meat or meat joints. The remaining ingredients are simmered. Examples of broths include; Minestrone and Vegetable broth.

2. Puree Soups

Puree soups are soups that are blended to a smooth texture. The ingredients are simmered until soft and then a food processor or hand blender is used to puree and remove lumps.

Examples of pureed soups include; Carrot and coriander, Gazpacho and Curried Parsnip.

3. Chowder

Chowders are thick soups or stews which are usually based. They are known to contain potatoes, a range of fish and some vegetables. Examples of chowder soups include; Corn Chowder, Spiced Haddock Chowder.

Examples of chowders include: Parsnip and smoked cod and traditional seafood chowder.

Points to consider when making soup

1. DO NOT OVERCOOK THE INGREDIENTS: always sauté the vegetables to help enhance the flavour. Add water when you feel the vegetables have softened nicely

2. PREPARE VEGETABLES CORRECTLY: dice vegetables to similar sizes to ensure less cooking time. If vegetables are cut into varied sizes, the cooking time is altered

3. SIMMER NOT BOIL: Do not boil soup as water will evaporate and the consistency will be incorrect

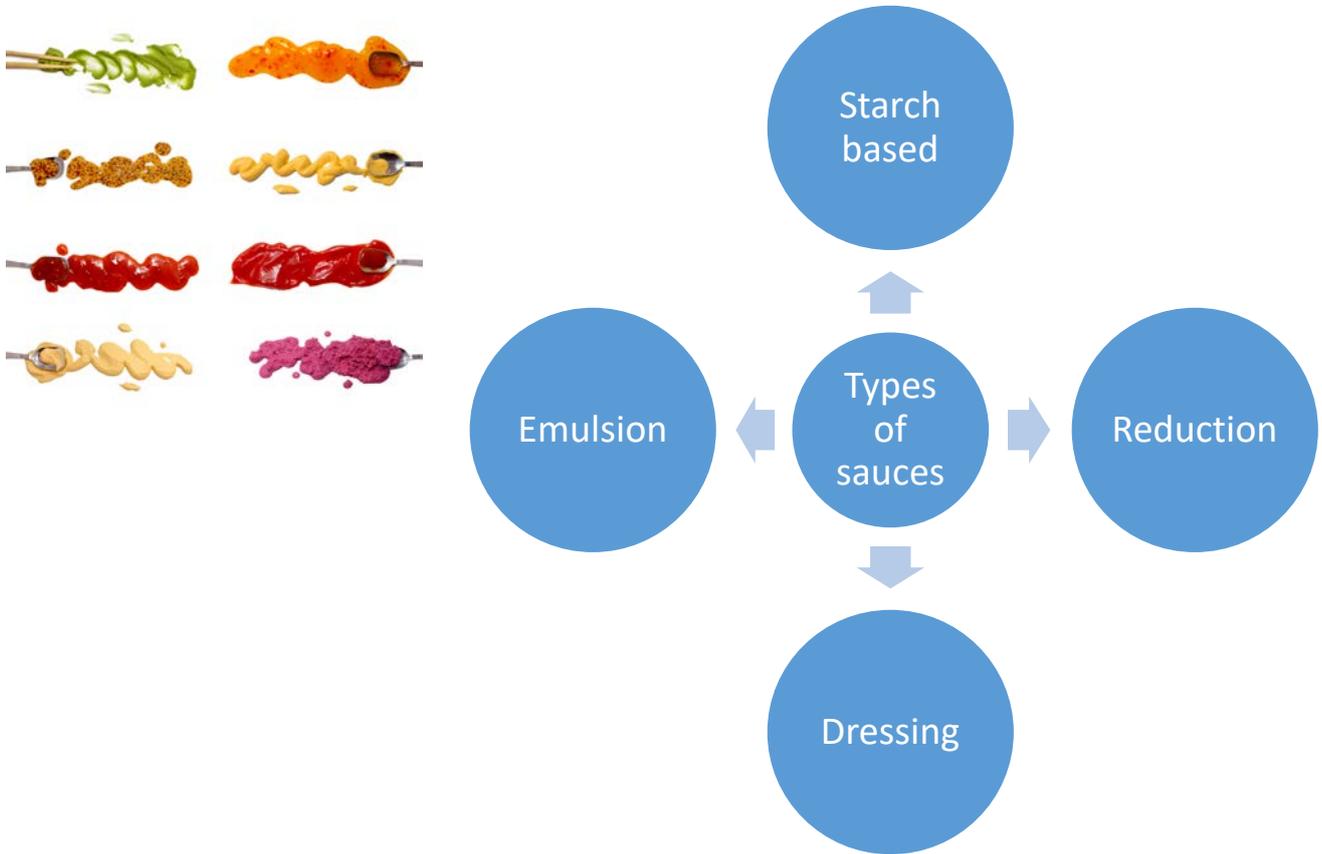
4. WATER OR STOCK: The correct amount of water is important for consistency. A thick soup is not desirable. If you do not have stock made, stock cubes can be dissolved into water or your soup can be seasoned with herbs or spices

5. GARNISH: Important for presentation and to add texture. Blended soups can be garnished with cream for presentation or crotons to add a crunchy texture.

Sauce making

Sauces are generally liquid based and a flavoursome addition to many dishes. They often form the basis of many popular dishes such as Spaghetti Carbonara, Pasta Bolognese, Chicken Chasseur, Beef stroganoff and Caesar Salad.

There are a wide variety of uses for sauces. A lot of sauces are made using the same technique. The end product is determined by the ingredients used and their proportion.



1. Starch based sauce

The addition of starchy ingredients will thicken liquids to make sauces. Liquid begins to merge with the starch when heated to 60degrees Celsius. This causes them to swell up. Gelatinisation occurs when the starch granules burst and form a gel. This causes the sauce to thicken. At 100 degrees Celsius the process is complete. During the cooling stage, the sauce will thicken and its viscosity is known.

1.1 Flour

Flour contains starch and is used to create the following **blended** sauces:

1.1.1 Roux Sauce

This is a traditional method to make white sauce. Milk is commonly used as the liquid that is heated with butter and flour to create the viscosity.

Points to consider:

- **MELT BUTTER CAREFULLY:** firstly melt the butter in low heat.
- **REMOVE FROM HEAT:** add the flour to the melted butter when the saucepan is off the heat. This will ensure the flour can be well coated and will prevent it from burning
- **STIR CONTINUOUSLY:** add the flour and fat to a low heat and stir for 2 minutes. This will cook the flour out.
- **ADD MILK:** remove the saucepan again. There will be enough heat in the saucepan to add the milk gradually. Beat the milk in to prevent a lumpy sauce.
- **BRING TO THE BOIL:** place the saucepan on the heat and allow it to boil (so gelatinisation occurs and the starch thickens the sauce).
- **AVOID STANDING:** do not allow the sauce to 'stand' too long as it will cause a thick skin to form on the surface.

1.1.2 All-in-one sauce:

This sauce is the same as a roux sauce. However it is a quicker method that requires limited skill in sauce making.

Points to consider:

- **ADD ALL INGREDIENTS:** using this method, all the ingredients for the sauce is added to the saucepan at once
- **MEDIUM HEAT:** place on medium heat to let the gelatinisation to occur
- **STIR CONTINUOUSLY:** carefully stir until the sauce begins to heat and thicken. This will prevent lumps
- **SIMMER:** allow cooking for about 5 minutes so the flour is cooked.

1.1.3 Infused sauces:

Again, this sauce uses the same ingredients as a roux sauce. The technique differs to allow distinctive flavours to dominate a dish.

1.2 Corn flour/ arrowroot

These types of starches are generally used to make blended sauces. **Blended sauces** require continuous attention in the cooking process. They rely on some form of preparation before cooking; heat to thicken them and attention-to-detail to ensure no lumps form.

Points to consider:

- **PREPARE PASTE:** mix the corn flour or arrowroot with a small amount of milk to form a paste
- **BOIL LIQUID:** bring the liquid to boiling point before pouring the paste
- **GRADUAL:** gradually add the paste to the boiled liquid
- **STIR CONTINUOUSLY:** like with all starch based sauces, stir all the while to avoid lumps forming.

Viscosity

This is used to describe the thickness of a starch based sauce. The thickness or viscosity, will determine the outcome of a dish.

Points to consider:

1. **POURING SAUCE:** a pouring sauce is the thinnest starch based sauce. A small amount of flour is used. The desired end result should be thin enough to pour easily and will coat the back of the spoon in a thin layer e.g. Crème Anglaise
2. **COATING SAUCE:** this type of sauce is a little thicker than a pouring sauce. Slightly more flour is used to create a more substantial viscosity. The sauce will coat the back of the spoon. Often other ingredients are added to make pasta dishes or fillings for pies
3. **BINDING SAUCE:** this is the thickest of each of the starch based sauces. The sauce is thickened with flour and extra ingredients added to create a dish such as fishcakes.

2. Reduction sauce

Making a reduction sauce can take up to an hour to make. However, this type of sauce is often full of flavour and economical to make.

Points to consider:

- **SIMMER:** allow liquid to simmer slowly until a concentrated gravy is formed
- **DEGLAZE:** use the juices left behind after frying and add liquid in the form of cream, wine or stock to form a reduction sauce when liquid has evaporated
- **SPICE:** spices can be added to liquids such as coconut milk and simmered to create Indian cuisine.

3. Emulsion sauce

This type of sauce is formed when liquid and oil or fat are mixed together with the addition of an emulsifier. Without an emulsifying ingredient, the liquid and oil or fat would split.

Points to consider:

- **EGG YOLK:** used as an emulsifier when making hollandaise or mayonnaise. The egg yolk makes the emulsion stable and the egg yolk acts as an emulsifying agent to prevent the sauce from separating
- **MUSTARD:** can be used as an emulsifier when making dressings for salads. These types of sauces must be shaken before use as the emulsion is unstable and some separating may occur after it has been made.

4. Dressing

This is a sauce made simply with vinegar or oil. It is typically made to improve the flavour of salad. Herbs and garlic can be used to help infuse flavours and improve the **taste**.

Skill 5: Combining and shaping mixtures

Combining, mixing or binding

This skill is used when making most dishes. Some form of combining or mixing will be required in most recipes.

Points to consider:

- **MORE THAN ONE:** mixing a range of ingredients to form one final product is essential when making bread, baking cakes, making sauces and preparing burgers
- **READ RECIPE:** when combining ingredients, it is important to read the recipe and take note of any instructions that will determine the outcome of the product. For example, adding the sugar to the egg whites when making a meringue should be done gradually.

Shaping and coating

Shaping an end product will create visual appeal. The way in which this is done is important when making fish cakes, burgers, sausage rolls and roulades.

Points to consider:

- **COMBINING:** before shaping, the mixture must be combined effectively. If the mixture is too wet, the shape will be lost. If the mixture is too dry, it will crumble rather than form a desired shape e.g. fishcakes require egg to help combine and are often coated with breadcrumbs
- **DUST:** when shaping, lightly dust the work surface with flour to avoid the mixture sticking.
- **AVOID OVER HANDLING:** too much handling will cause the mixture to become wet and sticky. Handle as little as possible and aim to work fast
- **DO NOT OVER GLAZE:** when preparing pastry products such as scones or croissants, glaze is very important. If there is no glaze, the product may burn and will not have a shiny appearance. If over glazed, the product will become soggy and cooking time may be altered.



A technique used

- to improve the presentation of baked products, pies, meat and other products. It creates a shiny coating
- in improving the texture of such products by adding a crispy coating.

Glazing can prevent the product from burning during the cooking process.

Skill 6: Dough making and shaping

A dough is mixture of flour, liquid and fat in different quantities. Although this may not seem difficult, making a dough for pastry, bread, bread products and pasta is quite complex and requires a high level of skill.

6.1 Pastry making

The dough required for making pastry depends on the product being made. There are different types of pastry suited to various dishes; shortcrust pastry, choux pastry and puff pastry.

Shortcrust pastry

This type of pastry is commonly used to make the base for quiche, the case for pie or sweet shortbread. It is known as shortcrust due to the crumbly or 'short' texture it has when cooked.

Points to consider:

- **ACCURATELY WEIGH:** set the scale to zero and weigh accurately to prevent the dough from being too wet or too dry
- **PLAIN FLOUR:** this type of flour is essential as it will not rise.
- **RUBBING-IN METHOD:** cut the butter into cubes before completing this. Ensure the fat coats all of the flour as this prevents gluten from forming into strands that will make the pastry elastic rather than crumbly.
- **LIQUID:** whether it is milk, water or egg (used to enrich) any liquid should be added one spoonful at a time. Combine this well before forming a dough.
- **COLD HANDS:** wash hands under cold water and form a ball of dough whilst kneading lightly
- **RELAX:** allow the pastry to rest before rolling out. This reduces the risk of shrinkage when shaping the pastry in a flan dish
- **LIGHTLY FLOUR:** only lightly flour the table to prevent sticking.
- **ROLL LARGER:** always roll the pastry larger than the dish you are going to shape.
- **GREASE:** grease the dish lightly to avoid sticking and press the pastry firmly into the dish before pricking with a fork and cutting the edges
- **EVEN ROLLING:** roll evenly to ensure even cooking time
- **BLIND BAKE:** when making a pastry case that requires filling (pie), blind bake the pastry case to prevent it from going soggy. You can do this by covering the pastry with greaseproof paper than weights (dried peas are fine) to stop it from rising. Then bake for 15 minutes to create a crusty texture.
- **HOT OVEN:** ensure the oven has been pre-heated so the pastry can cook well without becoming greasy or soggy.

Choux Pastry

This type of pastry is quite complex to make. This method is used to make profiteroles and dumplings.

Points to consider:



- **WATER:** water is used in this process to make a batter. Butter and water should be boiled
- **BATTER:** when making the batter, remove from heat and add flour. This will prevent burning.
- **BEAT:** with a wooden spoon until flour cooks. Keep the temperature low
- **COOL:** before adding the eggs allow to cool. This will help stabilise the mixture and enable it to form peaks
- **PEAKS:** add the egg gradually until peaks are visible. Beat the mixture well
- **PIPE:** this type of pastry will form good shape when piped.
- **PIERCE:** allow to cook for the desired time. In the final cooking stage (when the product is golden and risen), pierce with a fork to allow the steam to escape from the product.

Puff pastry

Puff pastry uses equal amounts of fat and flour. It is a very complex process and requires very high skill. A lot of cooks may choose to buy ready-made varieties due to cost, limited skill and convenience. Although this is the lightest, it is the richest.

6.2 Bread making and shaping

Bread differs from pastry as it requires a high degree of kneading. Unlike pastry, the texture improves with vigorous kneading. Raising agents are also used in this process.

Points to consider:

- **Strong plain flour:** is used due to the large presence of gluten content. This is important to help make the dough elastic and to enable to dough to stretch
- **RUBBING IN METHOD:** to help incorporate air and activate the gluten
- **GRADUALLY ADD WATER:** so the dough becomes soft not sticky
- **KNEAD:** until the dough becomes elastic when stretched. This is when gluten is formed. This will trap the air during the cooking process and allows the bread to harden
- **PROVE:** in a warm area to enable the gluten to form and to help the bread rise. Carbon dioxide is formed when proving by the process of fermentation. The yeast grows when it feeds on the sugar. Carbon dioxide is produced and air pockets may be visible after this stage is complete
- **KNOCK BACK:** knead the bread again to remove carbon dioxide or air pockets. This improves the texture
- **SHAPE:** roll into desired shape to make bread rolls, pizza base, naan bread or fruit whirls.
- **EVEN SIZE:** ensure you have cut your bread dough into even sizes. This will keep cooking time similar and prevent under/ over cooking parts of the dough.

Skill 7: Using raising agents

A range of ingredients and methods are used to encourage a product to rise when cooked. Raising agents contribute to the overall texture of a final product.

1. EGGS:

Whole egg

When whisking eggs, air is trapped to form a foam. It becomes more stable when sugar is added.

Food examples include: Swiss roll, muffins and cookies

Points to consider:

- **BEAT EGGS:** beat eggs until they rise in volume
- **ADD SUGAR:** to stabilise the foam
- **FOLD IN:** fold in the plain flour gently to avoid air being lost.



Egg Whites



Egg whites are most effective at trapping air.

Food examples include: Making Meringues, folding into mousses and making soufflés involves separating egg

Points to consider:

- **CLEAN, DRY BOWL:** water will prevent air being trapped and result in an eggy base
- **SEPARATE:** egg whites must be successfully separated from the yolk. The presence of a small amount of yolk may be enough to destroy a meringue
- **PEAKS:** Whisk egg whites to form peaks and until they have increased in volume
- **SUGAR:** the general rule of 50g of sugar per egg white applies. Beat this gradually until the figure of 8 can be easily seen on the top of the mixture. The egg whites should be glossy and thick.

2. SELF RAISING FLOUR

Raising agents will already have been added to this type of flour. This type of flour is common when baking as it raises the mixture with minimal effort and time. Carbon dioxide is trapped when the starch and the liquid combines. This enables the product to rise easily.

Food examples include: scones, sponge cakes, fruit flan and pizza dough.

Scones

Points to consider:



- **RUB IN:** rub the fat into the flour to help coat it and add air
- **KNEAD LIGHTLY:** to encourage gluten. Do not over handle as the dough will become sticky and the end product heavy
- **REST:** allow to rest for a small time to allow the carbon dioxide to form and help the product rise
- **SHAPE EVENLY:** to ensure even cooking time.

3. BAKING POWDER

This is a chemical raising agent. It produces carbon dioxide when in contact with liquid. This causes the product to rise.

Points to consider:

- **WORK FAST:** this chemical raising agent must be added quickly and placed into the oven for cooking
- **MIX EVENLY.**

4. BICARBONATE OF SODA

Often, bicarbonate of soda and corn flour is used to make baking powder. This is a chemical raising agent also. This white powder produces carbon dioxide to help a product rise. Yogurt or buttermilk is often used in recipes with bicarbonate of soda to help the gluten stretch, rise and set.

Food examples include: Fruit soda bread and ginger bread.

Points to consider:

- **ACIDIC:** ensure this is combined with ingredients that are high in acid such as yogurt or buttermilk. This helps it rise
- **MEASURE CAREFULLY:** too much of this product can leave a metallic taste and will form a coating on the surface of the product
- **PLAIN FLOUR:** self-rising flour mixed with bicarbonate of soda would create the effect mentioned above.

5. YEAST

During bread making, yeast is used to cause fermentation. The carbon dioxide created during this process acts as a chemical raising agent.

6. STEAM

Some pastry products are made with water. When heated, water causes steam inside a product causing it to rise. This will harden when cooled. This process occurs when making choux pastry for profiteroles or choux buns.

Skill 8: Setting a mixture

There are many ways to set a mixture; using heat and removing heat.

1. Using heat

Denaturation

When heat is added to a protein rich food, the protein changes the chemical structure.

Coagulation

When denaturation occurs, the protein thickens and sets into a solid product.

Food examples include choux pastry, quiche or pudding.



2. Removing heat

Gelation

This occurs when products set into a solid without heat. When making a starch based sauce, gelatinisation occurs. This must be cooled before it hardens and solidifies. Chilling (custard trifle) or freezing (ice cream) is an example of setting with the removal of heat.



3. Using gelatine

Sachets of gelatine can be purchased in order to help thicken popular chilled desserts. Heat is used in the form of boiling water and when mixed into a recipe and left to chill, will set and create the desired consistency for example cheesecake

4. Whisking cream

Whipping cream is a method used to help set mixtures such as cheesecake when gelatine is not being used. It can ensure a light creamy texture whilst stabilising the food to hold air and keep the structure in the dish.



Useful Resource: <https://www.food4life.org.uk/learning-areas/key-stage-3/food-skills-and-cooking/food-skills-and-cooking-techniques>