



# 1. Food Preparation & Nutrition Knowledge Organiser: Food, Nutrition & Health

## Keywords

1. Basal Metabolic Rate (BMR)
2. Physical Activity Level (PAL)
3. Estimated Average Requirement (EARs)
4. Energy Density
5. Reference Intake (RI)
6. Body Mass Index

## Key Points

1. Protein is required by the body for growth, maintenance and repair.
2. Proteins are built up of units of amino acids.
3. Fats can be classified as either saturated and unsaturated.
4. Saturated fats are considered to be more harmful to health because they raise levels of cholesterol.
5. Carbohydrate provides the body with energy.
6. Most of our energy should come from complex starchy foods.
7. Vitamins are micronutrients, required in small amounts to do essential jobs in the body.
8. Water soluble vitamins are easily destroyed during preparation and cooking.
9. Water makes up two thirds of the body so it is vital to drink regularly to stay hydrated.
10. Nutritional needs change throughout life, but everyone needs to consider the current healthy eating guidelines when planning meals.
11. Energy balance is the balance of energy consumed through eating and drinking compared to energy burned through physical activity.

## Key words

1. Amino Acids
2. High Biological Value (HBV)
3. Low Biological Value (LBV)
4. Protein Complementation
5. Kwashiorkor
6. Fatty Acids
7. Glycerol
8. Saturated Fats
9. Unsaturated Fats
10. Fat Soluble vitamins
11. Water Soluble Vitamins
12. Cholesterol
13. Hydrogenation
14. Trans fats
15. Dietary Fibre
16. Photosynthesis
17. Monosaccharides
18. Disaccharides
19. Polysaccharides
20. Non starch Polysaccharide (NSP)
21. Constipation
22. Diverticular Disease

## Keywords

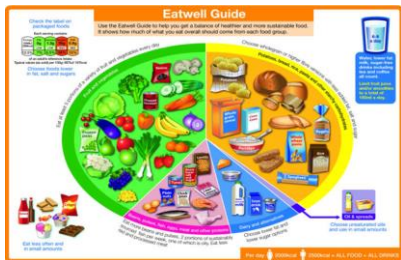
1. Eatwell Guide
2. Puberty
3. Menstruation
4. Iron Deficiency anaemia
5. Osteoporosis
6. Foetus

## Keywords

1. Fortified
2. Rickets
3. Osteomalacia
4. Antioxidant
5. Thiamin
6. Riboflavin
7. Spina bifida
8. Ascorbic acid
9. Peak Bone Mass
10. Haemoglobin
11. Anaemia
12. Thyroid
13. Dehydration
14. Lactating

## Test Yourself

1. Explain the difference between the terms micronutrient and macronutrient
2. What do the following terms mean – function; source; deficiency; excess?
3. Give examples of food sources that contain: Glucose; Fructose; Sucrose
4. What are the main functions of carbohydrates in the diet?
5. Why is sugar sometimes referred to as 'empty calories'?
6. Why should we include more starchy foods and fewer sugary foods in our diet?
7. Explain the terms intrinsic and extrinsic sugars
8. What are the functions of fat in the diet?
9. Give an example of protein complementation.
10. Explain the difference between insoluble and soluble fibre
11. What are the fat soluble vitamins
12. What is peak bone mass?
13. Why is a good supply of folic acid needed in early pregnancy?
14. What is Osteoporosis?



# 2. Food Preparation & Nutrition Knowledge Organiser: Food Preparation Skills

You must be able to understand two different methods of using knives to prepare food safely. Explain the techniques used when preparing different foods that require knife skills. Know how to classify different types of fish. Explain how to choose, handle and prepare different types of fish. Understand the structure of meat and how this affects the cooking methods used. Understand that a recipe consists of specific quantities of ingredients that are prepared, using a variety of skills, to produce the required outcome. Know that making and shaping dough is a precursor to making a variety of flour-based mixtures. Understand the function of ingredients in dough.

### TYPES OF FISH

Fish can be classified according to their origin. Fish live in fresh or salt water, have fins and scales. They have scales, instead of hair.

- Freshwater fish include trout, carp and salmon.
- Sea water fish include haddock, plaice, sea bass, sea bream, cod, mackerel and herring.
- Shellfish include crabs, prawns, mussels, scallops, oysters, cockles and squids.

**Salmon:** The fish should smell pleasantly of the sea or seaweed. It should be moist or fatty, or strong when it is open. There is a pink to red tint to the flesh.

**Trout:** The fish should smell slightly of the sea. The flesh should be moist and tender. The scales should be bright and shiny.

**Sea Bass:** The gills should be moist in colour, indicating that a good amount of oxygenated water is still present in the blood.

**Cod:** Any fish that has distinctive markings should be discarded. The scales should be bright and shiny. The flesh should be moist and tender. The scales should be bright and shiny.

**Crab:** When buying crab, check it is going to be cooked in its own shell. Water should not be added. The legs should be firm. The claws should be firm. The legs should be firm. The claws should be firm.

### When selecting fresh fish, the following points should be considered:

- Smell:** Fresh fish should smell pleasantly of the sea or seaweed. It should be moist or fatty, or strong when it is open. There is a pink to red tint to the flesh.
- Appearance:** The fish should be moist and tender. The scales should be bright and shiny.
- Structure:** The gills should be moist in colour, indicating that a good amount of oxygenated water is still present in the blood.
- Handling:** Any fish that has distinctive markings should be discarded. The scales should be bright and shiny. The flesh should be moist and tender. The scales should be bright and shiny.

### TYPING A FISH

1. Wash the fish thoroughly.
2. Remove the scales.
3. Remove the head and tail.
4. Make a diagonal cut behind the head.
5. Turn the fish over and repeat the cut.
6. Remove the skin.
7. Remove the bones.
8. Wash the fillets.

### TYPES OF POULTRY

- TURKEY:** A heavy weight carcase from 5-12 kg. Fresh turkey should have firm white flesh, capable, bony feet and smooth legs. Long turkey tend to have more flavour. Feet need careful cooking on the fish can become very dry.
- DUCK:** Ducks vary in weight from 800 g to 2.5 kg. A large duck will serve four people. The flesh is rich and fatty.
- GOOSE:** Geese are larger birds weighing 6-12 kg. Geese have very rich, crisp flesh with a slightly fatty skin. The end is rich and fatty.
- WILD BIRDS:** Wild birds are 450g. A ready bird with a distinctive gamey flavour and rich, tender flavoured meat. Most of the meat comes from the breast and these are best quickly pan-fried and served pink. Good source of protein and iron.
- GUINEA FOWL:** A brood similar to chicken. The flesh tends to be tough in the children. One bird serves one person.
- QUAIL:** A downy-looking game bird, bred for the table in the UK. It has a good proportion of lean, juicy flesh is bone and a delicate flavour. When serving quail it is customary to eat the bones as well, as they are soft and the breast does not come off easily.
- OSTRICH:** Ostrich is a 'red meat' similar in colour and taste to beef. It is lower in fat grams, but average compared to chicken and turkey, and much lower in iron and calcium than beef. Most of all the meat from an ostrich comes from the leg, thigh and back. Ostrich has no breast meat.

### Cooking methods suitable for and meat and poultry

- boiling:** suitable for larger cuts of meat and whole poultry. The cooking liquid is usually used to produce a rich stock, sauce or soup.
- steaming:** suitable for small pieces of meat or poultry. The cooking liquid is usually not used. The steam is used to cook the food. Steaming can be done on the hob or in a steamer.
- stir-frying:** suitable for small pieces of meat or poultry. The cooking liquid is usually not used. The steam is used to cook the food. Steaming can be done on the hob or in a steamer.
- braising:** a cooking method of moist cooking in which the food is cooked in liquid or oil and then served slowly in a sauce or stock.
- roasting:** a term applied to meat or poultry cooked in the oven. Roasting can be done in a roasting tin or on a spit. A good quality of fat or oil is used.
- grilling:** when roasting, this process of moist cooking is used. The food is cooked in a roasting tin or on a spit. A good quality of fat or oil is used.
- grilling:** when roasting, this process of moist cooking is used. The food is cooked in a roasting tin or on a spit. A good quality of fat or oil is used.

### TYPES OF CUTS

- Batonnet:** 1/2" x 1/2" x 3" ABOUT THE SIZE OF A FRENCH FRIE.
- Medium Dice:** 1/2" x 1/2" x 1/2" CREATED BY CUTTING BATONNET INTO CUBES.
- Allumette:** 1/4" x 1/4" x 2" ALSO CALLED THE MATCHSTICK CUT.
- Small Dice:** 1/4" x 1/4" x 1/4" MADE BY CUTTING ALLUMETTE INTO CUBES.
- Julienne:** 1/8" x 1/8" x 2" MADE BY CUTTING JULIENNE INTO CUBES.

### BREAD

1. Preheat the oven to 220°C or gas mark 7.
2. Combine 400g strong plain flour and a sachet of fast-action dried yeast.
3. Add 100g of warm water and 10g of salt.
4. Mix a well in the center and pour in the rest of the water (15-17°C).
5. Mix the dough to form a ball and knead for 10 minutes.
6. Add more water if necessary to produce an elastic dough.
7. Roll out the dough to 18cm x 18cm x 1.5cm.
8. Roll up the dough to 18cm x 18cm x 1.5cm.

### Ingredients:

- 450g strong flour
- 2 tsp fast action dried yeast
- 270ml warm water
- 10g salt

### THE SCIENCE OF BREAD MAKING

**PROOFING DOUGH:** During the proofing stage, the yeast produces CO<sub>2</sub> and ethanol. The CO<sub>2</sub> is trapped in the dough, causing it to rise. The ethanol is evaporated during baking.

**BAKING:** The heat causes the CO<sub>2</sub> to expand, causing the bread to rise. The heat also causes the starch to gelatinize and the protein to coagulate, setting the structure of the bread.

### WHAT DO THE INGREDIENTS IN BREAD ACTUALLY DO?

- LIQUID:** Water is needed to hydrate the flour and activate the yeast. It also helps to dissolve the salt and sugar.
- WHEAT FLOUR:** Flour provides the structure of the bread. The gluten in the flour is responsible for the bread's elasticity.
- SALT:** Salt is used to enhance the flavor of the bread and to control the yeast's activity.
- YEAST:** Yeast is responsible for the fermentation of the dough, producing CO<sub>2</sub> and ethanol.

### OTHER INGREDIENTS IN BREAD MAKING

- Butter:** Adds flavor and moisture to the bread.
- Eggs:** Adds structure and moisture to the bread.
- Sugar:** Feeds the yeast and adds flavor to the bread.
- Oil:** Adds moisture and flavor to the bread.
- Herbs and Spices:** Add flavor to the bread.

## 2. Food Preparation & Nutrition Knowledge Organiser: Food Preparation Skills

### Key words - Veg

1. Bridge hold
2. Claw grip
3. Jardinière
4. Julienne
5. Macedoine
6. Chiffonade
7. Batonnet
8. Dicing
9. Chopping
10. Paring
11. Flexible
12. Filleting
13. Serrated
14. Cooking

### Keywords - Fish

1. Salting
2. Connective tissue
3. Coagulate
4. Crustacean
5. Mollusc
6. White fish
7. Flat fish
8. Oil fish
9. Shellfish
10. Classification
11. Omega 3 fatty acid

### Keywords - Meat

1. Collagen
2. Elastin
3. Myoglobin
4. Muscle Fibre
5. Maillard Reaction
6. Non enzymic browning
7. Gelatine
8. Cross Contamination

### Keywords

1. Ingredients
2. Precise
3. Combined
4. Rubbing-in
5. Binding
6. Coating
7. Enriched dough
8. Glazing

### Keywords

1. Gliadin
2. Glutenin
3. Gluten
4. Carbon Dioxide
5. Shortcrust
6. Choux

### Test Yourself

1. Name the two methods of holding food when cutting it.
2. Explain the meaning of poultry, game and offal
3. Name 3 meat products
4. Give reasons why chicken is a popular consumer choice today
5. Which type of fish contains the most Omega 3 fatty acids?
6. Describe two quality checks for fresh fish.
7. Tough meat has what length of fibres?
8. Where would you store meat when not preparing it?
9. Why are some cuts of meat more suitable for stewing and some for roasting?
10. Give the main reason for cooking meat
11. How does the use of a marinade help to tenderise meat?
12. Explain how a tough cut of meat becomes tender during sewing
13. What glaze would you use on enriched dough?
14. What type of flour is used to make bread dough?
15. What gas does yeast produce?

### Key Points

1. Specific types of knives are designed for different cutting and shaping tasks.
2. Knives are dangerous if not handled correctly and care should be taken at all times.
3. A flat and stable cutting surface is essential to avoid injury when cutting food.
4. There are specific terms used for vegetable cuts relating to the size and shape of the outcome.
5. White fish carry oil in the liver; oil fish carry oil throughout the flesh.
6. It's important to wash your hands after handling fish to prevent cross contamination.
7. The length and type of cooking method depends on the type of muscle fibre.
8. Enzymic activity occurs when cut fruit and vegetables react with oxygen to turn them brown.
9. Various foods can be coated with ingredients to create a new layer to protect, add texture and flavour – this is called coating or enrobing.
10. Dough is made by mixing flour with liquid, and sometimes includes leavening (raising) agents as well as other ingredients and flavourings.

# 3. Food Preparation & Nutrition Knowledge Organiser: Food Science

You must be able to know and understand the reasons why food is cooked and how heat is transferred to food. Know the reasons for selecting different cooking methods. Understand protein denaturation and coagulation. Know about the properties of protein in gluten formation. Understand enzymic browning and oxidation in fruit and vegetables. Understand the functional and chemical properties of carbohydrates, which are gelatinisation, dextrinisation and caramelisation. Understand the processes of raising or aerating using physical and mechanical methods. Know and understand the working properties of chemical and biological raising agents.

## REASONS WHY WE COOK FOOD

**REASON FOR COOKING**

- To kill **pathogenic bacteria** and toxins making the food safer to eat
- To soften the food making it easier to chew and swallow
- To make the food more digestible
- It improves and intensifies the flavour of food
- The food looks more attractive and appealing
- It reduces the 'bulk' of the food
- Provides variety to our meals
- To enable certain ingredients to work together
- We eat hot food to keep warm in cold weather

**EXAMPLES**

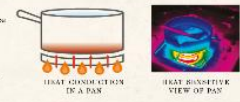
- Meat, fish, kidney beans
- Tenderised meat, softened vegetables and fruit
- Animal protein foods, starchy foods
- Roasted vegetables, scrambled egg, ragù sauce
- Grilled bacon, poached egg, roast chicken
- Lacy vegetables – cooking reduces their volume, so more can be eaten
- Roasting, grilling, frying, boiling, stewing all give different textures to food
- Starch for thickening sauces, melting gelatine and chocolate, raising agents in cakes
- Casseroles, soups and stews

## CONDUCTION

**DESCRIPTION:** The transfer of heat by direct contact from a hot surface. This is a relatively slow method of heat transfer because there must be physical contact between the surfaces to transfer energy between molecules. Surfaces used to be good conductors of heat. That is why saucepans and frying pans are made of metal, but with plastic handles.

**EXAMPLES:** Frying, boiling, roasting, searing or broiling (also touching the hot surface of a frying pan).

**USERS:** Dry roasting, griddling, searing, sautéing




**CONVECTION**

**DESCRIPTION:** The transfer of heat by the mass movement of heated particles into a cooler mass or area. Natural convection uses the tendency of warm liquids or gases to rise and cooler ones to sink, leading to a constant circulation of heat. Mechanical convection uses the fan in an oven to move heat around quickly and evenly. Food cooks evenly because the oven does not have hot or cold areas in it. Convection ovens can rotate on a vertical axis and food is heated from the outside. The inside heats up slowly.

**EXAMPLES:** Hot water, air or oil surrounding the food such as heated potatoes, chicken stew, meat loaf, poached eggs, deep-fried fish.

**Natural convection – making a hot air or oil sauce, gravy**

**USERS:** Dry heat methods: boiling, convection and deep fry fry. Wet heat methods: boiling, steaming, stewing, poaching, sautéing, pressure cooking.



**RADIATION (INFRA RED RADIANT HEAT)**

**DESCRIPTION:** The heat is transferred using electromagnetic radiation waves of heat or light to cook the food.

There is no physical contact between the heat source and the food being cooked.

**EXAMPLES:** Waves of heat are directed at the food e.g. grilling, sausages, bacon, Welsh rarebit, kebabs.


**USERS:** Roast, grilling and barbecuing foods.

**RADIATION (MICROWAVE)**

**DESCRIPTION:** The absorption in the microwave oven creates electricity to make waves called microwaves which penetrate the food.

**EXAMPLES:** Ready meals, microwave ready meals, scrambled eggs, burgers, buns.

**USERS:** Heating up leftovers, quick defrosting of frozen food, food items such as lasagne.



## FRYING METHODS

**SHALLOW FRYING**

Small pieces of food are cooked in a shallow amount of very hot fat/oil.

**EXAMPLES:** Chicken, steak, sausages, vegetables

**ADVANTAGES:** A quick method of cooking, uses minimum fat.

**DISADVANTAGES:** Frying foods should not be left unattended, unhealthy method due to the fat/oil used, over heated fat/oil can combust causing a fire fire.

**DEEP FRYING**

Foods are submerged into very hot fat/oil.

**EXAMPLES:** Chips, chicken pieces, fish fillets

**ADVANTAGES:** Gives food a golden and crunchy surface, very quick cooking method.

**DISADVANTAGES:** Deep fat fryers should not be left unattended, very unhealthy method due to the fat/oil used, over heated fat/oil can combust causing a fire fire.

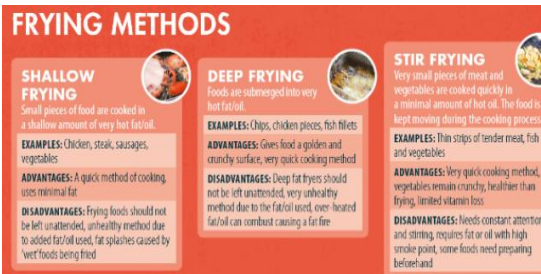
**STIR FRYING**

Very small pieces of meat and vegetables are cooked quickly in a minimal amount of hot oil. The food is kept moving during the cooking process.

**EXAMPLES:** Thin strips of tender meat, fish and vegetables

**ADVANTAGES:** Very quick cooking method, vegetables remain crunchy, healthier than frying, limited vitamin loss.

**DISADVANTAGES:** Needs constant attention and stirring, requires fat or oil with high smoke point, some foods need preparing beforehand.



## DRY HEAT METHODS

**BAKING**

Food is cooked using the dry, hot air of the oven.

**EXAMPLES:** Cakes, pastries, puddings, bread and biscuits, some fish.

**ADVANTAGES:** Food has good colour and texture, several items can be cooked at once, exterior of food is browned and adds flavour.

**DISADVANTAGES:** Needs very specific cooking times and temperatures.

**ROASTING**

Food is cooked using the dry, hot air of the oven but is basted with hot fat to prevent it from drying out.

**EXAMPLES:** Joints of meat, vegetables.

**ADVANTAGES:** Good flavour, crisp texture and appearance, possible to bake another dish whilst roasting for fuel economy.

**DISADVANTAGES:** Joints of meat take a long time to cook, the food has to be basted with extra fat, meat can become hard and chewy if cooked at a high temperature.

**TOASTING**

Dry radiant heat is applied to food. May be direct but brief exposure to heat in an oven, or longer exposure to mild heat. It is NOT simply putting bread in a toaster.

**EXAMPLES:** Bread, nuts, seeds, whole spices.

**ADVANTAGES:** Toasting bread lowers the Glycaemic Index, flavours are released and enhanced.

**DISADVANTAGES:** Dry roasting of spices or herbs in a frying pan needs lots of attention to avoid burning.

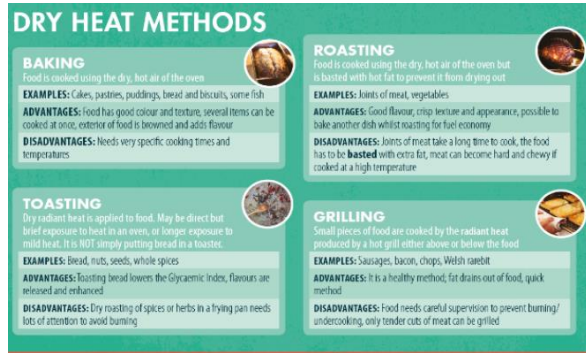
**GRILLING**

Small pieces of food are cooked by the radiant heat produced by a hot grill either above or below the food.

**EXAMPLES:** Sausages, bacon, chops, Welsh rabbit.

**ADVANTAGES:** It is a healthy method, fat drains out of food, quick method.

**DISADVANTAGES:** Food needs careful supervision to prevent burning/undercooking, only tender cuts of meat can be grilled.




## MOIST HEAT METHODS

**BOILING**

Starchy food is cooked in vigorously boiling water called a 'rolling boil'.

**EXAMPLES:** Potatoes, pasta and rice.

**ADVANTAGES:** A quick method of cooking, healthy – no added fat.

**DISADVANTAGES:** Some water-soluble vitamins are lost, food becomes soft (especially spaghetti), less suitable for diets at a higher protein.

**SIMMERING**

Food submerged in boiling water, food bubbles just that it gently bubbles.

**EXAMPLES:** Mince, fish, eggs, soups, fruit and vegetables.

**ADVANTAGES:** Ideal for meat pies or fish.

**DISADVANTAGES:** Tender foods can fall apart if the simmer becomes a boil. Loss of water-soluble vitamins, especially iron, zinc and green leafy vegetables.

**POACHING**

Food is cooked in a small amount of gently simmering liquid.

**EXAMPLES:** Mince, fish and eggs.

**ADVANTAGES:** Small pieces of tender meat such as fish can cook very evenly and quickly, a healthy way of cooking.

**DISADVANTAGES:** Loss of water-soluble vitamins, the food can break apart, some foods may lose their natural flavour.

**STEWING**

Food is simmered in liquid, cooked slowly to tenderise the flavours and to make tougher cuts of meat. If cooked in the oven it is a stew and if cooked in the oven it is a casserole.

**EXAMPLES:** Tough cuts of meat, fish, soups, beans and vegetables.

**ADVANTAGES:** Tough cuts of meat are tenderised, good flavour, water-soluble vitamins are absorbed in the sauce/soupy.

**DISADVANTAGES:** Needs to plan ahead because stews take a long time to cook, take up to 2 or 3 hours to develop their flavour and develop the flavours.

**BRAISING**

Usually cooked in a stew, the vegetables are surrounded by liquid with the **meat** cooked in the steam on top of the vegetables. The dish must have a well fitting lid.

**EXAMPLES:** Tough cuts of meat, beans and vegetables.

**ADVANTAGES:** Tough cuts of meat are tenderised, good flavour, water-soluble vitamins are contained in the sauce/soupy.

**DISADVANTAGES:** Braised dishes take 1-2 hours to cook.

**STEAMING**

Food is cooked in the steam of boiling water.

**EXAMPLES:** Tender meat, fish, vegetables, sweet potatoes.

**ADVANTAGES:** Good for the vitamins and nutrients, healthier method, food is easy to digest.

**DISADVANTAGES:** Food can over-boil so cook them for a shorter time, the water has to be topped up with water, attention can fill with concentration.

**BLANCHING**

Food is plunged in briefly into boiling water or steam, then removed and placed in chilled water.

**EXAMPLES:** Often used with baby vegetables.

**ADVANTAGES:** healthy, can enhance the colour of green vegetables, the blanching process stops enzymes in their work, otherwise could spoil the flavour, colour or texture.

**DISADVANTAGES:** Steaming and blanching may be lost, not suitable for all types of food.

**PRESSURE COOKING**

Food is cooked in a pressure cooker where the temperature of the boiling liquid can be increased from 100°C to 120°C, allowing the food to cook very quickly.

**EXAMPLES:** Tough cuts of meat, vegetables, soups, rice, starchy puddings.

**ADVANTAGES:** Food is cooked quickly (3 times faster than boiling), saves a lot of time, less fuel is used, water-soluble vitamins are lost to the fat.

**DISADVANTAGES:** Food is overcooked, food can become very soft.



1. Starch granules in water  
2. Starch granules softening  
3. Starch granules swelling and absorbing water

1. Obtained apple  
2. Obtained potato  
3. Dextrinisation on bread

Some molecules of caramelisation

### 3. Food Preparation & Nutrition Knowledge Organiser: Food Science

#### Key words

1. Palatability
2. Microwave
3. Radiation
4. Conduction
5. Convection

#### Keywords

1. Denaturation
2. pH level
3. Marinade
4. Enzymic Browning
5. Oxidation

#### Keywords

1. Gelatinisation
2. Viscosity
3. Consistency
4. Dextrinisation
5. Caramelisation

#### Keywords

1. Shortening
2. Plasticity
3. Aeration
4. Creaming
5. Foam
6. Emulsification.

#### Keywords

1. Physical raising agents
2. Chemical raising agents
3. Yeast
4. Bicarbonate of soda
5. Baking Powder
6. Fermentation
7. Carbon Dioxide

#### Test Yourself

1. State four reasons why we cook our food
2. Describe the 3 methods of heat transfer
3. Give examples of foods cooked by each method
4. How is heat transferred in a microwave oven?
5. Explain the difference between denaturing, coagulation, gelatinisation and dextrinisation
6. What is the term used to explain the way heat changes the texture of egg proteins?
7. What causes the browning of cut fruit and vegetables?
8. How would you stop apple in a fruit salad from going brown?
9. What is the main heat transfer method when boiling food?
10. What sort of heat transfer commonly causes dextrinization?
11. What term describes thickening a sauce using starch?
12. What term describes how fat makes a short texture product?
13. Which basic cake making process traps air into the cake?
14. How does egg white trap air?
15. How does steam raise a baked product and give an example of a food product this occurs in?

#### Key Points

1. Cooking food makes it safe, allows it to keep for longer and makes it more palatable.
2. Cooking methods can achieve specific characteristics in food.
3. Heat is transferred by conduction, convection and radiation. Cooking commonly uses a combination of heat transfer methods.
4. Proteins are denatured during cooking. Egg proteins coagulate or set when they are heated.
5. Wheat flour contains the protein gluten. Gluten forms the structure of pastries, breads and cakes.
6. Enzymes can cause the browning of fruit and vegetables. Fruit and vegetables need careful handling during preparation to prevent enzymic browning.
7. Gelatinisation is the function of starches as thickening agents.
8. Sauces can be different thicknesses when the proportion of ingredients is altered.
9. Dextrinisation is the term used to describe browning of starch caused by heat.
10. Caramelisation is the browning of sugars caused by heat.
11. Fat makes pastry short and crumbly.
12. Fats give colour and flavour to pastry. The plasticity of fat allows it to be used for rubbing in, spreading and creaming.
13. Fats can help aeration in baking.
14. Emulsions are mixtures of liquids that do not normally mix. E.g oil and water. Egg yolks contain lecithin, a natural emulsifier. Eggs help stabilise mayonnaise.



## 4. Food Preparation & Nutrition Knowledge Organiser: Food Safety

### Keywords

1. Bacteria
2. Microorganisms
3. Moulds
4. Enzymes
5. Temperature
6. Moisture
7. Time
8. Nutrients
9. pH level
10. Oxidation

### Keywords

1. Starter culture
2. Probiotic
3. Pathogens
4. Food Poisoning
5. Contamination
6. Salmonella
7. Staphylococcus Aureus
8. Clostridium Perfringens
9. Clostridium Botulinum
10. Bacillus Cereus
11. Food Borne disease
12. E Coli
13. Listeria
14. Campylobacter
15. Norovirus

### Keywords

1. Use by date
2. Best before date
3. Frozen Food
4. Chilled Food
5. High risk foods
6. Low risk foods
7. Danger zone
8. Hygiene

### Test Yourself

1. What are microorganisms?
2. What is food spoilage?
3. What does ambient temperature mean?
4. What are high risk foods and give some examples?
5. What is the ideal temperature for bacterial growth?
6. What is the most important bacteria used in food manufacturing?
7. What are the two date marks you need to check when buying food?
8. What is the recommended temperature for chilled food?
9. What is the temperature range of the danger zone?
10. Explain the term cross contamination.
11. List four occasions during food preparation when you must wash your hands.
12. What does HACCP stand for?
13. Learn the different types of food preservation and for each type identify 2 foods that can be preserved in this way

### Key Points

1. Bacteria are found everywhere and need the right temperature, warmth, time, nutrients, pH level and oxygen to grow and multiply.
2. Microorganisms (bacteria) are used to make a wide range of food products.
3. Bacteria are used to make cheese, yogurt and bread.
4. The most important bacteria in food manufacturing are Lactobacillus species.
5. Bacterial contamination is the presence of harmful bacteria in our food, which can lead to food poisoning and illness.
6. As a food handler you must do everything possible to prevent this contamination.
7. What are the main symptoms of food poisoning?
8. Name three bacteria responsible for food poisoning?
9. Which groups of people are more at risk of food poisoning?
10. When handling food at any stage care must be taken to prevent contamination.
11. Everything possible must be done to control the conditions that allow bacteria to multiply causing food poisoning.



## 5. Food Preparation & Nutrition Knowledge Organiser: Food Choices

### Key words

1. Kosher
2. Halal
3. Vegetarian
4. Ovo-lacto vegetarian
5. Vegan
6. Lacto vegetarian
7. Ethical
8. Diabetes
9. Coeliac
10. Gluten
11. Protein
12. Malnutrition
13. Lactose intolerance
14. Allergy
15. Anaphylaxis
16. Epi pen

### Keywords

1. Senses
2. Taste
3. Aroma
4. Texture
5. Olfactory
6. Sensory analysis
7. Palate
8. Sensory characteristics
9. Rating Tests
10. Ranking tests
11. Star profile
12. Triangle testing
13. Paired preference tests

### Keywords

1. Regional
2. Multicultural
3. Cuisine

### Keywords

1. Cardiovascular
2. Eatwell Guide
3. Healthy eating
4. Physical Activity Levels (PAL)
5. Availability
6. Seasonality, Lifestyle

### Test Yourself

1. What are the factors that affect the food we eat?
2. What religions traditionally do not eat pork?
3. Which foods can people with coeliac disease not include in their diets?
4. Name two traditionally British dishes.
5. Why is it important to use codes when tasting foods?
6. List the stages used to carry out a controlled sensory analysis
7. What is triangular testing?
8. What information must be included on food labels by law?
9. What is the difference between functional and fortified foods?
10. How has customer demand changed school meals over recent years?
11. Name some different technological developments within the food industry and how these have affected food choice

### Key Points

1. If you can't tolerate certain foods you have to change your diet.
2. Some religions have their own dietary laws and rules.
3. Diabetes is a condition caused because the pancreas doesn't produce any or enough insulin.
4. Coeliac disease is a condition where people have an adverse reaction to gluten.
5. Lactose intolerance is caused when the body is unable to digest lactose (a sugar found in milk and dairy products).
6. An allergy to nuts can cause anaphylaxis.
7. The reasons why people become vegetarian include religion, dietary laws, ethical reasons, health or family.
8. Cuisine relates to the established range of dishes and foods of a particular country or religion.
9. Cuisine is also concerned with the use of distinctive ingredients and specific cooking and serving techniques.
10. Accurate sensory testing of foods helps manufacturers and cooks develop food products and improve recipes.
11. The human olfactory system (smell) and taste sensors are important when tasting food.
12. EU= European Union
13. FSA=Food Standards Agency
14. People need to make informed choices about the food they buy based on their income, lifestyle and preferences from the food available to them.
15. Many factors affect the food choices that people make.

## 6. Food Preparation & Nutrition Knowledge Organiser: Food Provenance

You must be able to demonstrate knowledge and understanding of the environment issues associated with food and its production. Demonstrate knowledge and understanding of where ingredients are grown, reared and caught. Have a clear understanding of different farming methods and their effect on the environment. Demonstrate knowledge and understanding of the impact that food has on local and global markets. Demonstrate a knowledge of primary and secondary processing. Know and understand how processing affects the sensory and nutritional properties of ingredients.



### 8 WAYS TO REDUCE FOOD MILES

- BUY LOCAL** - choosing locally produced food can make the biggest impact on food miles so it is important to read food labels. Buying food from your local area is the best way to reduce food miles, followed by food from the region. Even choosing food from anywhere within the UK is helpful in reducing food miles.
- SHOP AT FARMERS MARKETS** - a great place to source local seasonal foods is at farmers and organic markets.
- LEARN TO COOK FROM SCRATCH** - a lot of commercial food is not made locally. They come from national food producers and are then packaged for the individual stores.
- WALK OR CYCLE TO THE SHOP** - if you only have a couple of things to buy and a shop within walking or cycling distance, consider a walk rather than going by car.
- EAT SEASONALLY** - this ensures that you are eating foods that are produced locally for your area. Eat strawberries in the summer. Plan your meals around what is being harvested around you at the time.
- PICK YOUR OWN** - go to local farms where you can pick anything from raspberries to asparagus.
- SHOP LESS FREQUENTLY** - go once a month or less by making use of stockpiling techniques so that you are never without the things you use most and can create meals from scratch.

**Study tip**  
Explain what is meant by sustainable food and what it requires of producers and consumers.

### Sustainability of food

Food sustainability looks at the impact of producing and consuming food on the world's economy. Sustainability means that the resources we use should not exceed the earth's capacity to replace them. Sustainable food should be produced, processed, bought, sold and eaten with consideration to the following principles:

- Aiming to be waste-free** by reducing food waste and packaging. Food should have the minimum packaging and where possible be produced from materials that are reusable or recyclable.
- Buying local and seasonal foods** minimizes the energy used in food production, transport and storage, and helps protect the local economy.
- Eating a healthy diet** and reducing foods of animal origin. Meat and dairy products are the most energy and greenhouse-gas intensive food products. Consuming more vegetables and fruits, grains and pulses.
- Choosing Fairtrade certified products.** This scheme ensures workers are paid fairly for their work.
- Selecting fish only from sustainable sources,** such as wild-caught fish certified by the Marine Stewardship Council (MSC). Overfishing is the biggest threat to marine wildlife and their habitats.
- Getting the balance right.** Cut down on sugar, salt and fat, and include five portions of fruit and vegetables in the diet. Poor diet in the UK is leading to illnesses such as obesity, whilst 15% of the global population go hungry.
- Growing our own,** and buying the rest from a wide range of outlets rather than relying on large companies who lower prices at the expense of farmers, local communities and the environment.

(Source: www.eatingwithing, Toronto Guide to Good Food, June 2018)

### TYPES OF PACKAGING MATERIALS

**PAPER AND CARDBOARD**  
Cartons and bags, e.g. egg boxes, juice cartons, pizza boxes  
Paper and cardboard are a great choice environmentally: they can be recycled and can biodegrade. They are also cheap to produce, strong but lightweight, and can be printed on. However they are not water resistant and can be easily damaged.

**GLASS**  
Jars and bottles, e.g. jams, baby food and soups  
Glass presents some commercial advantages: it is reusable and easily recycled. It is also rigid and moisture proof. Unfortunately it is easily broken which makes it dangerous to handle.

**PLASTIC**  
Bottles, trays and puns, e.g. ready meal containers, water bottles and yoghurt pots  
Plastic can be easily shaped into a number of products. It can be recycled, but it causes a problem with litter due to the fact that it does not biodegrade.

**METAL**  
Aluminium and steel, e.g. cans and foil trays  
Packing food in metal containers is one of the oldest methods of food preservation. It can be used with a variety of food and drink items, allowing them to be stored for long periods of time. Both steel and aluminium can be recycled.



**Reduce:** Choose products which have the least amount of packaging and take reusable bags when shopping to avoid using too many plastic bags.

**Reuse:** Look out for products that are available in refill packs such as cleaning products and coffee. Glass milk bottles are returnable and jars can be reused for storage or home preservation e.g. pickled onions.

**Recycle:** Products such as paper, cardboard, metal, glass and plastic can be taken to recycling banks or collected weekly or fortnightly.

### EGG FARMING

- Battery** - hens move freely inside the barn, but the light and feed are controlled.
- Battery or laying cage** - hens are kept in cages indoors where the light, temperature and feed are controlled. This is the cheapest method of egg production.
- Free range** - eggs come from hens that are allowed to roam in open air runs and live in hen houses at night to protect them from foxes.
- Organic** - hens live on organic land and are fed an organic diet.

**Over-farming can have a massive impact on the environment**

**About 33% of all food produced ends up being wasted.**



## 6. Food Preparation & Nutrition Knowledge Organiser: Food Provenance

### Key words

1. Transportation
2. Food Miles
3. Food Origin
4. Climate Change
5. Carbon Footprint
6. Recycling
7. Packaging
8. Landfill
9. Food Waste
10. Composting
11. Sustainable food

### Keywords

1. Traceability
2. Field to fork
3. Barn reared animals
4. Organic
5. Genetically Modified (GM)
6. Free range
7. Hydroponics
8. Fish Farms
9. Intensive farming

### Keywords

1. Green house gases (GHG's)
2. Crop rotation
3. Fairtrade
4. Red Tractor
5. Climate change
6. CFC's
7. Sustainability of food
8. Deforestation

### Keywords

1. Homogenised
2. Primary and Secondary processing
3. Pasteurised
4. Skimmed
5. Semi skimmed
6. Ultra heat treated (UHT)
7. Sterilised
8. Evaporated, Condensed

### Keywords

1. Preservation
2. Temperature
3. Drying
4. Chemical Preservation
5. Modified Atmospheric Packaging
6. Vacuum packaging, Irradiation

### Key Points

1. Food and packaging waste contributes to greenhouse gases (GHG's)
2. Seasonal and sustainable foods address many environmental issues.
3. MSC – Marine Stewardship Council = Seafood can be traced back to a certified sustainable fishery.
4. Food miles are the distance food travels from its point of origin to your table. Recycling and producing less waste can help reduce carbon emissions.
5. Nearly a third of all food produced ends up in landfill sites where it gives off methane gas as it decomposes.
6. Cheaper foods are ones that are GM/intensively farmed
7. Best quality protein foods are ones where the welfare of the animals has been considered.
8. Hydroponic farming is the production of food using specially developed nutrient rich liquids rather than soil.
9. Free range farming allows animals to access outdoor areas as part of their life. Increased demand for fish stocks has seen stocks diminishing in the wild due to over fishing.
10. Barn reared animals live in an environment similar to intensive farming
11. Under EU law, all foods need to be traceable from field to fork.
12. Carbon emissions and global climate change affect food and water supplies. Sustainable food production ensures less negative impact on the environment and the farmers.

### Test Yourself

1. Explain what food miles are.
2. Give two ways that fish stocks can be made more sustainable than intensive farming.
3. What are the benefits are free range farming>
4. Why is it important that the origins of food can be traced?
5. What does the flag on the Red Tractor logo mean?
6. How does Fairtrade support farmers in developing countries?
7. Which two gases contribute to global warming?
8. What is the outer skin on the wheat grain called?
9. What is homogenised milk?
10. What type of flour is used to make pasta?
11. Which vitamins may be lost during irradiation?
12. How does vacuum packaging differ to MAP?

# 2. Food Preparation & Nutrition Knowledge Organiser: Food Preparation Skills Basic

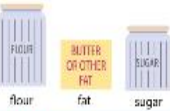
## Mixtures – cakes; biscuits; batters

### Cake making

The basic ingredients used in cake making are:



Other ingredients such as dried fruit, spices, chocolate or nuts may be added for extra flavour and texture. The quantity and proportion of ingredients used depends upon the method of cake making, and variation in the processes and techniques used to make the cakes will produce a different end product.



### Biscuits

Biscuits are made using the same basic methods as for cakes – rubbing in, creaming, whisking and melting. The basic ingredients in biscuit mixtures include flour, sugar and fat.

Method of making	Rubbed in	Creaming	Whisking	Melting
Examples	Shortbread	Victoria, Shrewsbury	Sponge fingers	Ginger nuts, flapjacks



There are five main methods of cake making:

Method	Proportion of Fat to Flour	Proportion of Sugar to Flour	Examples
<b>RUBBED IN</b>	1/2 or less	1/2 or less	Black cake, Raspberry loaf, Fruit cake, Victoria cake
<b>CREAMING</b>	equal	equal	Queen cake, Fairy cakes, Victoria sandwich, Madeira, Cherry Charlotte
<b>WHISKING</b>	no fat used	equal	Swiss roll, Genoise sponge cake
<b>MELTING</b>	1/2 or less	equal	gingerbread, parkin, flapjacks
<b>ALL-IN-ONE</b>	equal	equal	Small cakes, muffins

TECHNIQUE USED TO MAKE: Fat rubbed into flour, sugar and other dry ingredients added, egg and liquid if used, mixed.

TECHNIQUE USED TO MAKE: Fat and sugar are creamed, egg added and flour folded in with any other ingredients.

TECHNIQUE USED TO MAKE: Eggs and sugar are whisked, flour folded in.

TECHNIQUE USED TO MAKE: Fat melted with sugar and syrup or marmalade, egg added with the flour and other ingredients.

TECHNIQUE USED TO MAKE: All ingredients mixed together at the same time.

The basic ingredients are:



### Batters

A batter is a mixture of flour, egg and liquid such as milk. There are two main types and consistencies – thin or pouring, and thick or coating. Thin batter is used to make pancakes, toad in the hole and Yorkshire pudding. Thick batter is used to make fritters and to coat pieces of raw fish before deep fat frying. A tempura is a light Japanese batter made from cornflour, flour, sea salt and sparkling water. It is used to coat vegetables before frying in hot oil.



CAKES, MUFFINS, SCALES, BATTERS AND BISCUITS

### SETTING

1. Mark the butter gently, push the base and sides of a 2cm spongeform cake tin with a little melted butter.
2. Mix the butter gently, push the base and sides of a 2cm spongeform cake tin with a little melted butter.
3. Toast the gelatine leaves in a bowl of warm water for about 10 minutes.
4. Add the mascarpone, lemon zest, whipped cream and caster sugar in a bowl.
5. Gently beat the lemon juice and water in a saucepan. Squeeze the seeds from the gelatine then add to the warmed lemon juice, stirring to dissolve.
6. Fold the gelatine mixture into the mascarpone mixture.
7. Meltle through the lemon curd a spoonful of a thick.
8. Flour the wrists on top of the base, smoothing with palette knife. Cover and leave to set in the refrigerator.

Ingredients:  
100g butter  
300g ginger nut biscuits  
3 sheets gelatine  
150g mascarpone  
1 lemon, zest and juice  
250ml whipping cream  
175g caster sugar  
4 tbsp lemon curd

### Key words

- Aeration
- Whisking
- Rubbing In
- Melting
- Creaming
- Dextrinisation
- Caramelisation
- Preservative
- Enrich
- Steam
- Enrobing

### Key terms

- Ingredients** – the foods or substances needed to make a particular dish.
- Raising agent** – a substance added to a food product that makes them rise when cooked.
- Proportion** – a part or amount to be considered in relation to the whole.
- Gluten** – formed from the two wheat proteins gliadin and glutenin, in presence of water. Gluten is developed by kneading.
- Consistency** – thickness or viscosity.
- Accompaniment** – things that accompany something else in a complementary way, for example, table sauces, or foods that work well with other foods or drinks.

### Test Yourself

1. Name the 4 different methods of cake making and give examples.
2. What are the functions of the ingredients in a basic cake recipe?
3. Explain how aeration can occur in cake making
4. How could you adapt a basic cake recipe to make it: a. healthier; b. have a different colour; c have a different flavour; d have a different surface appearance

### WHIPPED CREAM

1. Place the cream into a bowl.
2. Use an electric whisk, and put it on the medium speed setting.
3. The cream will be very frothy and bubbly. You start that as you continue to whisk it will become fluffier and lighter in colour.
4. Keep whisking until there are trails in the cream you will have reached the soft peak stage.
5. When the trails in the cream become more solid you will have reached the soft peak stage.
6. You should now reduce the speed of the whisk and continue until the trails in the cream have become stiffer.
7. Serve it immediately or cover well and store in the refrigerator for a few hours.

## Basic Mixtures – Sauces

### Sauces

Sauces are either used as part of a dish – for example a pasta bake – or may be served as an accompaniment to a food – for example pepper sauce with a steak. The main point to consider is how the sauce will complement the dish. For example, a delicate lemon sauce might complement a grilled sole but would be unsuitable served with a grilled steak.

What can a good sauce add to a food or a dish?

- flavour
- colour
- moisture
- nutritional value.



▲ Sauces add flavour, colour and interest to a dish.

Types of sauces commonly used include:

- Roux based, all-in-one or infused sauces such as béchamel and velouté
- Blended sauces such as a custard or cornflour sauce
- Reduction sauces such as tomato, a jus or gravy
- Emulsions such as mayonnaise, a hollandaise sauce or salad dressing.

A good quality roux based sauce has the following characteristics:

- an acceptable flavour
- smooth
- glossy
- desired consistency.

### Roux based sauces

A roux is a combination of fat and flour cooked for a particular length of time, depending on the colour of the sauce required. The example on page 173 uses a white roux sauce with milk as the liquid. To make an infused sauce, ingredients such as herbs, carrots, peppercorns and onion are gently heated in milk and or stock in order to flavour the liquid. The flavoured liquid is then used to make the roux.

Basic ingredients in white roux sauces include fat, flour, liquid and seasoning. Other ingredients such as cheese, parsley and mushrooms may be added for flavouring.

The proportion of liquid to flour depends upon the desired consistency of the sauce. If too much liquid is used the sauce will not be as thick as required; if too little is used the sauce will be too thick.

A white sauce can be made using the one-stage method. All the weighed and measured ingredients are placed in a pan and brought to the boil until thickened, or alternatively placed in a jug and cooked in a microwave oven.

There are three consistencies:

**Pouring** – to 250ml liquid, use 15g fat and 15g flour. Uses to serve as an accompaniment.

**Coating** – to 250ml liquid use 25g fat and 25g flour. Uses to coat food in dishes such as cauliflower cheese.

**Panada** – to 250g liquid, use 50g fat and 25g flour. Uses to bind ingredients together such as in a recipe for croquettes.

### Blended sauces

Milk and cornflour are mixed together and heated until the sauce thickens. There is no fat in a blended sauce.

### Reduction sauces

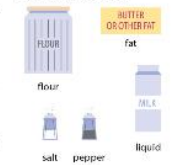
Sauces made from the meat's own juices. It is usually boiled to reduce the liquid, to intensify the flavour and to thicken the consistency of the sauce. A jus is a reduced sauce made from concentrated stock.

### Emulsions

Sauces made with oil and vinegar which are shaken together with an added emulsifying agent to stabilise the mixture.

### Cakes, Pastry, Sauces, Batters and Biscuits

The basic ingredients are:



**Activity**  
List at least 10 sweet and savoury dishes where a sauce forms part of the dish, for example cauliflower cheese.

**Study tip**  
Learn the different types of sauce with examples.

**Check it**  
1. What is a roux?  
2. What are the qualities of a good roux sauce?

**Key point**  
Sauces are used to complement other ingredients or foods by adding colour, texture and moisture. They can also add nutritional value to a dish.



### Sauces – Basic Recipes

**ROUX SAUCES**

**Pouring**  
15g margarine/butter  
15g flour  
250ml liquid (milk or stock)

**Coating**  
25g margarine/butter  
25g flour  
250ml liquid (milk or stock)

**Panada**  
50g margarine/butter  
50g flour  
250ml liquid (milk or stock)

**Functions Of Sauce Ingredients**

THICKENS the mixture (starch grains RELATIVELY on heating).

Adds FLAVOUR, which is absorbed by the flour when the sauce is heated.

**Possible Modifications**

Substitute semi-skimmed milk for full fat milk  
This gives the BEST TEXTURAL VALUE of the sauce.  
It is useful for individuals following a REDUCED FAT DIET.

Add to the sauce –

**Use Of Sauces In Food Products**

**HINT**  
Use the VISCOSITY CIRCLE TEST to check the THICKNESS of a sauce. Use this information to your MANUFACTURING SPECIFICATION.

**NOTE**  
Manufacturers of non fat MILKSHAKE STRAINED in their sauce.

**LEMON MERINGUE PIE**  
**STRAWBERRY JELLY**

### TOMATO SAUCE

1. Wash the garlic and chop it.
2. Heat two tablespoons of oil in a saucepan and fry the garlic until soft.
3. Add the tomatoes, seasoning and pepper flakes.
4. Cook over a medium low heat for 10 mins. Add the chopped meat, and mix well.
5. Cook over a low heat for an additional 7 minutes.
6. The sauce can be blended to make it smooth or left with texture.

**Ingredients:**  
1 clove garlic, cooking oil, 100g tinned plum tomatoes, seasoning, 1 bunch basil leaves

### ROUX SAUCE AND GELATINISATION

1. Melt the butter in a saucepan and add the flour then...
2. Stir continuously over a moderate heat with a wooden spoon to form a thick but loose - don't allow it to brown.
3. Stir the roux in a jug or in a pan until it flows freely.
4. Remove pan from the heat and add a small amount of the milk and stir well.
5. Add the milk a little at a time stirring well to avoid lumps. Keep doing this until all the milk has been added.
6. Reduce the pan to the heat and stir all the time in a jug or in a pan. Continue to cook the sauce for 10 mins, stirring at the time to fully gelatinise the starch to the correct consistency.

**Ingredients:**  
20g flour, 20g butter, 500ml liquid (milk or stock), salt, pepper

**NOTE:** Milk can be infused with onion, carrot, celery and bouquet garni. This mixture is stored and used with the rest of the new sauce recipe, and the onion is removed.

## Test yourself

1. Name the 3 types of sauces that can be made using the roux method
2. Explain how you could test the thickness of a sauce
3. Explain how flour, cornflour and arrowroot thicken a sauce
4. Why might a sauce contain lumps?
5. What modifications could you make to a sauce to: a. add flavour; b. reduce the fat content?

### Key words

Roux  
Coating  
Panada  
Cornflour  
Arrowroot  
Blended  
Glaze  
Thicken  
Gelatinisation  
Viscosity  
Modified starches

## 2. Food Preparation & Nutrition Knowledge Organiser: Food Preparation Skills Basic

### Mixtures – Pastry Making

#### Pastry making

The basic ingredients in pastry are:



The quantity or proportion of ingredients vary according to the type of pastry and the techniques used to make the pastries also vary.

#### Basic techniques used in all pastry



#### Study tip

Name each type of pastry and give examples.

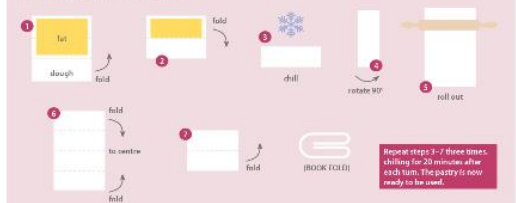
#### Check it

Can you list at least 4 important techniques when making pastry?

#### Key point

The gluten content of flour is an important factor in making successful pastry. Shortcrust and suet require a soft, low gluten flour to keep the pastry short and crumbly. Crusts, flaky and rough puff require a strong, high gluten flour to enable the pastry to stretch and form layers during cooking.

#### Laminating pastry dough



The six main types of pastry are:

	<b>SHORTCRUST* / ALL-IN-ONE</b> <b>RECOMMENDED FAT TO USE:</b> butter or cooking fat, margarine or butter <b>PROPORTION OF FAT TO FLOUR:</b> ½ fat to flour <b>TYPE OF FLOUR:</b> soft plain <b>TECHNIQUE USED TO MAKE:</b> fat cut into cubes and rubbed in to the flour, liquid added *for a richer pastry, egg yolk and sugar are added
	<b>SUET</b> <b>RECOMMENDED FAT TO USE:</b> shredded suet <b>PROPORTION OF FAT TO FLOUR:</b> ½ fat to flour <b>TYPE OF FLOUR:</b> self-raising <b>TECHNIQUE USED TO MAKE:</b> suet and flour mixed with liquid
	<b>FLAKY PUFF / ROUGH PUFF</b> <b>RECOMMENDED FAT TO USE:</b> a mixture of lard or cooking fat and block margarine or butter <b>PROPORTION OF FAT TO FLOUR:</b> ½ fat to flour <b>TYPE OF FLOUR:</b> strong flour <b>TECHNIQUE USED TO MAKE:</b> ½ of the fat rubbed in, liquid added to form a dough. Dough rolled out and fat added (see diagram above)
	<b>CHOUX</b> <b>RECOMMENDED FAT TO USE:</b> margarine, butter or cooking fat <b>PROPORTION OF FAT TO FLOUR:</b> ½ fat to flour <b>TYPE OF FLOUR:</b> strong flour <b>TECHNIQUE USED TO MAKE:</b> fat and liquid heated in a sauce, flour worked in, egg added to the paste

**Pastry**

There are FOUR main types of pastry –

<b>FLAKY/ROUGH PUFF</b>	<b>DROUX</b>	<b>SHORTCRUST</b>
200g plain flour	125g plain flour	200g plain flour
150g fat	100g fat	100g fat
1g salt	100ml water	1g salt
125ml ice cold water	10ml lemon juice	40ml cold water
10ml lemon juice	200g eggs (4)	Oven temperature: 200°C/ Gas Mark 6
Oven temperature: 220°C/ Gas Mark 8 (this may alter according to the product being made).	Oven temperature: Varies, depending on product.	
		<b>SUET</b>
		200g plain flour and 10g baking powder OR 100g soft raising flour
		200g shredded suet/vegetable suet
		2g salt
		125ml water
		Oven temperature: Varies, depending on product.

**PASTRY TYPE** | **CAN BE USED FOR:**

Shortcrust	quiches, jam tarts, leath, meringue pie
Crusts	chocolate eclairs, choux tarts
Flaky/rough puff	strawberry roll, vanilla slice, jib tops
Suet	Steak & kidney pudding, jam roly-poly

#### Functions Of Pastry's Main Ingredients

- FAT** - 'SHORTENS' the product; the fat coats the flour particles and prevents too much water being absorbed so that long strands of gluten cannot form. Pastry needs to have a 'SHORT' texture and long gluten strands would prevent this. Lard or solid vegetable oil has more shortening properties than margarine, but DOES NOT give a good FLAVOUR. Therefore, a COMBINATION of the two fats give the best result.
- FLOUR** - helps form the STRUCTURE of pastry and is the MAIN INGREDIENT. When the pastry is cooked PEXTICISATION occurs. The starch is converted into sugar, which is CARAMELISED, giving the pastry its COLOUR.
- WATER** - BINDS the ingredients together, and helps to form the STRUCTURE of the pastry.
- SALT** - adds FLAVOUR to the pastry.

#### Possible Modifications

- The following modifications can be made to shortcrust pastry –
- SUBSTITUTE WHOLEMEAL FLOUR FOR WHITE FLOUR** (Amount substituted can vary).
- Increases the NSP content of the product.
  - Affects taste, texture and appearance.
  - Extra WATER is necessary, as the bran in wholemeal flour makes it more ABSORBENT.
- ADD CHEESE**
- This can be added before the water OR put on top before bake.
  - Increases the FAT CONTENT, which is already HIGH.
  - Alters taste and appearance.
- ADD SUGAR**
- Changes savoury pastry to sweet pastry.

#### Aeration

- FOLDING and SEALING** flaky pastry traps the fat in pockets.
  - When the pastry is cooked, the fat melts which **PRODUCE STEAM** and causes the pastry to RISE.
  - Choux pastry also rises as a result of STEAM.
- 

### Test yourself

- Name 4 different types of pastry
- For each type of pastry name 2 food products that can be made from each
- Explain what is meant by the term 'shorten'
- Explain the function of ingredients in pastry making
- How could you reduce the amount of saturated fat in a shortcrust pastry pie?
- Why would you bake a pastry case 'blind' and explain how you would do this?

### Key words

- Choux  
Flaky  
Shortcrust  
Suet  
Shorten  
Dextrinisation  
Bind  
Sealing  
Glazing  
Baking Blind  
Shrinking

## 2. Food Preparation & Nutrition Knowledge Organiser: Food Preparation Skills Basic

### Mixtures – Pastry Making continued

#### CHOUX

- 1 Preheat the oven to gas mark 6, 200°C or 390°C for fan ovens. 
- 2 Grease a baking tray and sprinkle with water. 
- 3 Sift 80g flour and salt onto kitchen paper. 
- 4 Put 50g of chopped-up butter in a medium-sized saucepan – add 150ml of cold water. 
- 5 Stir with a wooden spoon over a moderate heat until the butter has melted and the mixture comes to the boil. Turn the heat off. 
- 6 Tip in all the flour and mix thoroughly with the wooden spoon to form a roux. 
- 7 Beat the mixture vigorously using a wooden spoon or electric whisk. Continue for a minute until you have a smooth ball of choux paste. 
- 8 Thoroughly beat the eggs in a jug – then add them to the mixture a tablespoon at a time. 

**Ingredients:**  
150g strong flour  
100g unsalted butter  
250ml cold water  
4 eggs

- 9 Beat vigorously until you have a smooth glossy paste. 
- 10 Insert a plain piping nozzle and carefully fill the piping bag with the mixture. Pipe into even-sized sausage shapes to make 12 balls. 
- 11 Bake the choux for 15 mins, then reduce temperature to gas mark 5/ 180°C (180°C fan) for a further 10 mins. 
- 12 Make a slit along the length of each choux on the side. Allow to cool. 
- 13 Fill with whipped cream and top with melted chocolate. 
- 14 To make profiteroles, pipe the mixture into small, even sized balls. 
- 15 Wet your finger and smoothly clean any points on each ball. 
- 16 Bake for 10-15 mins. 

#### SHORTCRUST PASTRY

- 1 Sieve flour and salt into a bowl. 
- 2 Cut the fat into cubes and add to the flour. 
- 3 Rub the fat into the flour using fingertips. 
- 4 Initially the pastry will be large clumps. 
- 5 With further rubbing the mixture will eventually resemble breadcrumbs. 
- 6 Add sufficient cold water to make a stiff dough. Mix with a metal knife. 
- 7 Knead pastry very lightly to bring together. 
- 8 Wrap in cling film and chill. 

**Ingredients:**  
125g plain flour  
55g butter  
salt  
30-45ml cold water

#### FLAKY PASTRY

- 1 Mix the fat together on a plate so that they are evenly distributed. Shape the fat into a block and divide into four equal pieces. 
- 2 Sieve the flour and salt, and rub in one quarter of the fat until it resembles breadcrumbs. 
- 3 Add enough water to mix to a soft, pliable dough. 
- 4 Roll the pastry in a rectangle, three times as long as it is wide. Mark into three squares. 
- 5 Place the fat in small lumps on the pastry to cover two of the three sections. Lots of air gaps are formed in between the lumps. This helps form the layered flakiness associated with this type of pastry. 
- 6 Fold the bottom third to the middle and the top third to the bottom. Seal the edges. Refrigerate for at least 30 minutes to harden. 
- 7 Repeat steps 4-6 three times with the remaining fat, giving the pastry a quarter turn before rolling each time. 
- 8 Repeat the rolling, folding, and sealing one more time without fat. Leave the pastry to rest for at least 10 minutes. 

**Ingredients:**  
225g strong flour  
80g lard  
80g butter  
salt  
30-45ml cold water