

GCSE Food, Preparation and Nutrition

YR11 – Example of Revision Guide (You should explore in detail all the topics from the check list)



THE BIG YEAR 11 MASTER CHECKLIST

Before your GCSE Food exam, you should be confident explaining:

Nutrition

- Protein (HBV, LBV, Protein Complementation)
- Carbohydrates
- Fat
- Vitamins
- Minerals
- Fibre
- Water
- Energy
- Energy balance
- Balanced diet
- Deficiency diseases
- Health problems linked to diet (e.g. Obesity, High Cholesterol, Heart Problems, Osteoporosis, Diabetes Type 1 and 2, etc)

Food science

- Gelatinisation
- Dextrinisation
- Caramelisation
- Maillard reaction
- Coagulation
- Denaturation
- Gluten
- Shortening
- Aeration
- Raising agents
- Emulsification
- Foams

Food safety

- Food poisoning
- Pathogenic bacteria
- Conditions for Bacteria to grow
- Temperature control
- Cross-contamination
- Personal hygiene

- Food storage
- Use-by/best-before
- High-risk foods
- Temperatures

Easy way to remember

-18 → 5 → 63 → 75

- **-18°C** = Freeze 
- **5°C or below** = Fridge 
- **5–63°C** = Danger zone 
- **75°C** = Cook/reheat 

- Food hazards
- Vulnerable groups

Food choice

- Religion
- Culture
- Ethics
- Health
- Allergies
- Intolerances
- Lifestyle
- Cost
- Availability
- Sensory properties
- Vegetarian diets
- Vegan diets
- Special diets

Food provenance

- Primary processing
- Secondary processing
- Food miles
- Sustainability
- Seasonal foods
- Organic food
- Fair trade
- GM foods

- Farming
- Environmental impact
- Ethical issues

Practical skills

- Knife skills
- Weighing
- Measuring
- Fruit and vegetable preparation
- Meat and fish preparation
- Dough
- Pastry
- Sauces
- Raising agents
- Shaping
- Finishing
- Presentation
- Portion control

Labelling

- Ingredients
- Allergens
- Nutrition information
- Use-by
- Best-before
- Storage
- Cooking instructions
- Origin
- Weight

The most important exam rule

Don't stop at “**what?**”

Try to explain:

WHAT → WHY → RESULT

For example:

 **Weak:**

Keep chicken in the fridge.

✅ **Better:**

Raw chicken should be stored in the refrigerator because low temperatures slow the growth of pathogenic bacteria.

🏆 **Excellent:**

Raw chicken should be stored in a refrigerator at a safe chilled temperature because low temperatures slow the growth and multiplication of pathogenic bacteria. It should also be stored below ready-to-eat foods to reduce the risk of cross-contamination.

Topics:

For **each topic**, I'll include:

- Exactly what students need to **know**
- Key terms they need to **learn**
- What they need to be able to **explain**
- Examples they should know
- ★ The important things they **must not forget**

🌐 **1. FOOD, NUTRITION & HEALTH**

1.1 Protein

What is protein?

Protein is a **macronutrient** needed by the body for growth and repair.

Main functions:

- Growth of muscles, skin and organs.
- Repair of damaged cells and tissues.
- Making enzymes, hormones and antibodies.
- Can provide energy if needed.

Sources:

- Meat
- Fish
- Eggs
- Milk and dairy products
- Beans
- Lentils
- Nuts
- Soya

Protein deficiency:

A lack of protein can cause **poor growth, muscle wasting and weakened immunity.**

Exam explanation:

Protein is needed for growth and repair because it provides amino acids that the body uses to build and repair cells and tissues.

- **HBV (High Biological Value) protein** contains **all the essential amino acids** in sufficient amounts.
Examples: **eggs, milk, cheese, meat, fish.**
- **LBV (Low Biological Value) protein** lacks one or more essential amino acids or has them in insufficient amounts.
Examples: **beans, lentils, peas, cereals, nuts.**

Easy way to remember:

HBV = usually animal proteins → complete protein

LBV = usually plant proteins → incomplete protein

However, combining different LBV proteins can provide all essential amino acids—for example, **beans + rice.**

Too much protein in the body can cause the excess protein to be broken down. The extra nitrogen is removed as **urea** and excreted in urine. Excess protein can also provide extra energy, which may be stored as **fat.**

A lack of protein can cause **poor growth, muscle weakness, tiredness, and a weakened immune system.**

1.2 Carbohydrates

Carbohydrates are a **macronutrient** and the body's main source of energy.

There are two main types:

Starchy carbohydrates:

- Bread
- Pasta
- Rice
- Potatoes
- Cereals

Sugars:

- Fruit
- Honey
- Sweets
- Cakes
- Fizzy drinks

Functions:

- Provide energy.
- Fibre-containing carbohydrate foods can help maintain a healthy digestive system.

Too much free sugar:

Can increase the risk of **tooth decay and excess energy intake**, which can contribute to weight gain.

A lack of carbohydrates can cause **tiredness, weakness, dizziness, and difficulty concentrating** because carbohydrates are the body's main source of energy.

1.3 Fat

Fat is a macronutrient that provides a **concentrated source of energy**.

Functions:

- Provides energy.
- Stores energy.
- Insulates the body.
- Protects organs.
- Helps absorb vitamins **A, D, E and K**.
- Provides essential fatty acids.

There are two main types you need to understand:

Saturated fat

- Found in foods such as butter, cheese and fatty meat.
- Too much can increase blood cholesterol and increase the risk of cardiovascular disease.

Unsaturated fat

- Found in foods such as vegetable oils, nuts, seeds and oily fish.
- Generally considered the healthier type of fat.

- **Trans fats**

Trans fat is a type of fat that can form during food processing. Eating too much can raise LDL (“bad”) cholesterol and lower HDL (“good”) cholesterol, increasing the risk of heart disease.

Common sources include:

- Fried and fast foods
- Some packaged baked goods, pastries, and biscuits
- Foods made with **partially hydrogenated oils**
- Some margarines and shortenings

Too much fat in the diet can lead to **weight gain, obesity, and an increased risk of heart disease.**

A lack of fat can cause **dry skin, poor growth, and difficulty absorbing vitamins A, D, E and K.**

1.4 Vitamins

Vitamins are **micronutrients** needed in small amounts.

You need to know the main vitamins, their sources, functions and deficiency problems.

Vitamin	Main function	Sources	Deficiency
A	Vision, skin, immunity	Carrots, liver, eggs	Night blindness
B	Energy release, nervous system	Meat, cereals, dairy	Anaemia, fatigue
C	Healthy skin, healing, immunity	Citrus fruits, peppers	Scurvy
D	Healthy bones and teeth	Sunlight, oily fish, eggs	Rickets
E	Protects cells	Nuts, seeds, oils	Rare
K	Blood clotting	Green vegetables	Excess bleeding

Easy memory:

A = eyes 🧐

B = energy ⚡

C = healing 🩹

D = bones 🦴

E = cells

K = clotting 🩸

Exam tip: Don't just memorise the vitamin. Learn:

SOURCE → FUNCTION → DEFICIENCY

Water-soluble vitamins

These **dissolve in water** and are not stored much in the body, so they need to be eaten regularly.

- **Vitamin B**
- **Vitamin C**

Student tip: B and C = **water-soluble**

Fat-soluble vitamins

These **dissolve in fat** and can be stored in the body.

- **Vitamin A**
- **Vitamin D**
- **Vitamin E**
- **Vitamin K**

Student tip: ADEK = **fat-soluble**.

What happens to vegetables when boiled?

- They become **softer**.
- Some **vitamins and minerals can be lost** into the water, especially vitamin C and some B vitamins.
- Their **colour may change** if they are overcooked.
- Their **texture becomes softer** and easier to chew.

When vegetables are boiled, they become softer, and some water-soluble vitamins can be lost into the cooking water

1.5 Minerals

Minerals are also micronutrients.

Important ones include:

Calcium

- Sources: milk, cheese, yoghurt, green vegetables.
- Needed for strong bones and teeth.
- Deficiency can contribute to weak bones.

Iron

- Sources: red meat, beans, lentils, leafy green vegetables.
- Needed to make haemoglobin.
- Deficiency causes **anaemia**, leading to tiredness and weakness.

Sodium

- Needed for fluid balance and nerve/muscle function.
- Too much can contribute to high blood pressure.

Fluoride

- Helps protect teeth from decay.

Iodine

- **Functions:** Used by the **thyroid gland** to produce hormones that regulate the body's metabolic rate (metabolism) and growth.
- **Main Sources:** Seafood, fish, seaweed, milk, and dairy products.
- **Deficiency Effects:** Causes a swollen thyroid gland known as a **goitre**, alongside fatigue and a slowed metabolism.
- **Excess Effects:** Can disrupt regular thyroid gland functions.

Phosphorus

- **Functions:** Works closely with calcium to build and support strong teeth and bones. It is also involved in how the body stores and releases energy.
- **Main Sources:** Red meat, dairy products, fish, poultry, and whole oats.
- **Deficiency Effects:** Rare but causes weak muscles and bone pain.
- **Excess Effects:** Can interfere with calcium absorption, weakening bones over time

1.6 Fibre

Fibre is mainly found in plant foods.

Sources:

- Wholemeal bread
- Brown rice
- Wholewheat pasta
- Fruit
- Vegetables
- Beans
- Lentils
- Oats

Function:

Fibre helps food move through the digestive system and helps prevent **constipation**.

Exam explanation:

Fibre helps prevent constipation because it adds bulk to faeces and helps food waste move through the digestive system.

1.7 Water

Water is essential for life.

It:

- Helps regulate body temperature.
- Transports nutrients.
- Removes waste.
- Is involved in chemical reactions.
- Helps maintain normal body functions.

Dehydration occurs when the body loses more water than it takes in.

1.8 Energy

The body gets energy from:

- Carbohydrate
- Protein
- Fat

Fat provides the most energy per gram.

Energy requirements vary depending on:

- Age
- Sex
- Body size
- Physical activity
- Pregnancy
- Growth

1.9 Energy balance

Energy balance means the relationship between energy taken in from food and energy used by the body.

If: **Energy intake > energy expenditure**

→ excess energy is stored → weight gain may occur.

Energy intake < energy expenditure

→ body uses stored energy → weight loss may occur.

Energy intake = energy expenditure

→ body weight is more likely to remain stable.

BMR (Basal Metabolic Rate) is the amount of **energy your body needs at rest** to keep vital functions working, such as breathing, blood circulation and maintaining body temperature.

1.10 A balanced diet

A balanced diet provides the **correct amounts of nutrients and energy** needed to maintain health.

It should contain appropriate amounts of:

- Carbohydrates
- Protein
- Fat
- Vitamins
- Minerals
- Fibre
- Water

A balanced diet needs to be considered alongside **portion size, energy requirements and individual needs**.

Life Stages

- **Infants:** Lots of **energy, protein, vitamins and minerals** for rapid growth.
- **Children:** **Protein, calcium, iron and energy** for growth, bones and learning.
- **Teenagers:** More **energy, protein, calcium and iron** because of rapid growth and puberty.
- **Adults:** A **balanced amount of carbohydrates, protein, fats, vitamins and minerals** to maintain health.
- **Older adults:** More **protein, calcium, vitamin D, fibre and fluids** to maintain muscles, bones and digestion.

 2. FOOD SCIENCE

This section is extremely important because AQA can ask you to explain **what happens to food during cooking**.

2.1 Gelatinisation

This happens when **starch is heated with liquid**.

Example: Making a **white sauce**.

What happens?

1. Starch granules are mixed with liquid.
2. Heat causes the granules to absorb water.
3. The granules swell.
4. The mixture becomes thicker.

Exam answer:

During gelatinisation, starch granules absorb liquid when heated. They swell and the mixture thickens.

2.2 Dextrinisation

Dextrinisation occurs when **starch is heated using dry heat**.

Example:

Bread turning brown when toasted.

The starch breaks down into **dextrins**, producing a brown colour and toasted flavour.

2.3 Caramelisation

Caramelisation occurs when **sugar is heated**.

It causes:

- Browning
- Changes in flavour
- Changes in aroma

Example:

Caramel made from sugar.

2.4 Maillard reaction

The Maillard reaction is responsible for browning and flavour when certain foods are heated.

It involves **reducing sugars reacting with amino acids/proteins**.

Examples:

- Bread crust
- Roasted meat
- Toast
- Biscuits

This produces desirable **brown colour and flavour compounds**.

2.5 Coagulation

Coagulation occurs when **proteins change from a liquid/semi-liquid state to a more solid state when heated**.

Examples:

- Egg becoming firm when cooked.
- Protein in meat changing during cooking.

Example:

Raw egg → liquid

Cooked egg → firm

2.6 Denaturation

Denaturation is when the structure of a protein changes.

It can be caused by:

- Heat
- Mechanical action
- Acids

Example:

Beating an egg white changes the protein structure.

2.7 Gluten formation

Gluten develops when **wheat flour is mixed with liquid and worked/kneaded**.

Gluten gives dough:

- Elasticity
- Stretch
- Structure

This is particularly important in **bread making**.

2.8 Shortening

Fat can shorten gluten strands in pastry.

This gives pastry a:

- Short

- Crumbly
- Tender texture

Example:

Shortcrust pastry.

2.9 Aeration

Aeration means **adding air to a mixture**.

Example:

Creaming butter and sugar together.

Air becomes trapped in the mixture, helping produce a lighter texture when baked.

2.10 Emulsification

An emulsion is formed when **two liquids that normally don't mix are combined**, such as oil and water.

Example: **Mayonnaise**.

Egg yolk contains **lecithin**, which helps stabilise the emulsion.

2.11 Foam formation

Foams are formed when **air is trapped in a liquid or semi-liquid food**.

Example:

Whisking egg whites.

The protein helps stabilise the air bubbles.

2.12 Raising agents

Raising agents help mixtures increase in volume.

Examples:

- Baking powder
- Bicarbonate of soda
- Yeast
- Steam
- Air

Yeast produces carbon dioxide during fermentation.

Baking powder produces carbon dioxide when activated by moisture and heat.

3. FOOD SAFETY

3.1 Food poisoning

Food poisoning is illness caused by eating **contaminated food**.

It can be caused by:

- Pathogenic bacteria
- Viruses
- Parasites
- Toxins
- Chemicals

Common symptoms include:

- Vomiting
- Diarrhoea
- Stomach cramps
- Nausea
- Fever

3.2 Pathogenic bacteria

Pathogenic bacteria are harmful bacteria that can cause disease.

Salmonella

Often associated with:

- Raw poultry
- Eggs
- Raw meat

Can cause:

- Diarrhoea
- Vomiting
- Abdominal pain
- Fever

Prevention:

- Cook food thoroughly.
- Prevent cross-contamination.
- Wash hands.
- Store food correctly.

Campylobacter

Often associated with:

- Raw poultry
- Raw meat
- Contaminated water

It is an important cause of foodborne illness.

Prevention:

- Cook poultry thoroughly.
- Keep raw poultry away from ready-to-eat foods.
- Wash hands and equipment properly.

E. coli

Some strains of **E. coli** can cause serious food poisoning.

It can be associated with:

- Undercooked minced beef
- Contaminated vegetables
- Contaminated water
- Poor hygiene

Listeria

Listeria can be particularly dangerous for **pregnant women, babies and people with weakened immune systems**.

It can grow at **refrigerator temperatures**, although slowly.

It may be associated with:

- Ready-to-eat foods
- Soft cheeses
- Smoked fish
- Cooked meats

Staphylococcus aureus

This bacterium can be found on:

- Skin
- Nose
- Hands

Poor personal hygiene can transfer it to food.

Some strains produce toxins that can cause food poisoning.

3.3 Conditions for Bacteria to Grow

You need to know the conditions bacteria need to grow.

F — Food

Bacteria need nutrients.

T — Time

Given enough time, bacteria can multiply rapidly.

T — Temperature

Many pathogenic bacteria multiply rapidly in warm conditions.

M — Moisture

Bacteria need available water to grow.

Exam application

If you control these conditions, you can slow bacterial growth.

For example: Keeping food chilled reduces the temperature, slowing the growth and multiplication of many bacteria.

3.4 Temperature control

Temperature is one of the most important ways to control bacteria.

Food should be:

- Cooked thoroughly.
- Kept hot when required.
- Chilled appropriately.
- Reheated thoroughly.
- Frozen correctly.

Why cook food thoroughly?

Heat can destroy many pathogenic bacteria.

Why chill food?

Low temperatures slow bacterial growth.

Why is reheating important?

Food should be reheated thoroughly so harmful bacteria that may have multiplied during storage are reduced.

3.5 Cross-contamination

Cross-contamination occurs when harmful microorganisms are transferred from one place to another.

Example:

Raw chicken → chopping board → salad

If the salad isn't cooked, the bacteria may remain on it.

Prevention

- Use separate equipment where appropriate.
- Wash hands.
- Clean surfaces.
- Store raw meat separately.
- Keep raw meat below ready-to-eat foods.
- Don't use the same utensils for raw and cooked food without cleaning them properly.

3.6 Personal hygiene

Food handlers should:

- Wash hands thoroughly.
- Tie back long hair.
- Cover cuts with waterproof dressings.
- Wear clean protective clothing.
- Avoid touching their face/hair.
- Avoid preparing food when suffering from illnesses that could contaminate food.

Why?

Humans can carry microorganisms on their:

- Hands
- Skin
- Hair
- Nose

- Mouth

Good hygiene reduces the risk of transferring them to food.

3.7 Food storage

Food must be stored correctly to prevent bacterial growth and contamination.

Refrigerator

- Keep food covered where appropriate.
- Store raw meat/poultry below ready-to-eat foods.
- Keep the refrigerator at a safe temperature.
- Follow storage instructions.

Freezer

Freezing stops bacteria from multiplying but **does not necessarily kill all bacteria**.

When food is defrosted, bacteria can begin multiplying again.

Therefore, defrost food safely and use it according to instructions.

3.8 Use-by vs best-before

This is VERY important.

USE-BY = SAFETY

A use-by date is used for foods where eating them after the date could pose a **food safety risk**.

Examples can include:

- Fresh meat
- Fish
- Some dairy products

You should **not eat food after its use-by date**, even if it looks or smells okay.

BEST-BEFORE = QUALITY

Best-before relates mainly to **quality**.

Food may still be safe after this date if it has been stored correctly, although its:

- Taste, Texture, Appearance may have deteriorated.

Easy memory trick:

USE-BY = USE for safety

BEST-BEFORE = BEST quality

3.9 High-risk foods

High-risk foods are generally foods that are suitable for bacterial growth and are often ready to eat or require careful temperature control.

Examples:

- Cooked meat
- Poultry
- Fish
- Cooked rice
- Egg dishes
- Dairy products

These foods need careful:

cooking → cooling → storage → reheating

3.10 Food safety hazards

There are four main categories.

Biological

Something living or produced by a living organism.

Example:

Pathogenic bacteria

Chemical

Harmful chemicals entering food.

Example:

Cleaning chemicals

Physical

Foreign objects entering food.

Examples:

- Glass

- Hair
- Plastic
- Metal

Allergenic

An ingredient that can cause an allergic reaction.

Examples:

- Peanuts
- Milk
- Eggs
- Nuts

3.11 Vulnerable groups

Some people are more likely to become seriously ill from food poisoning.

These include:

- Babies and young children
- Pregnant women
- Elderly people
- People with weakened immune systems

Their immune systems may not be able to fight infection as effectively, or the consequences of infection may be more serious.

4. FOOD CHOICE

4.1 Religion

Religious beliefs can affect which foods people eat.

For example, some religions have rules about:

- Meat
- Alcohol
- Preparation methods
- Fasting

4.2 Culture

Culture influences:

- Ingredients

- Cooking methods
- Traditional dishes
- Eating habits

For example, different cultures have different staple foods and traditional cuisines.

4.3 Ethics

People may choose food based on ethical concerns.

Examples:

- Animal welfare
- Fair trade
- Environmental concerns
- Sustainable fishing

4.4 Health

Someone may change their diet because of health.

For example:

- Reducing saturated fat.
- Reducing sugar.
- Increasing fibre.
- Increasing fruit and vegetables.

4.5 Allergies and intolerances

Allergy

The immune system reacts to a food substance.

It can cause symptoms ranging from mild to potentially life-threatening.

Intolerance

The body has difficulty digesting or processing a food, without the same immune response as a food allergy.

Example:

Lactose intolerance.

4.6 Lifestyle

Food choices can be influenced by:

- Time

- Work
- Sport
- Family
- Cooking ability
- Convenience

A busy person may choose convenience foods because they require less preparation.

4.7 Cost

Price strongly influences food choice.

Someone with a limited budget may choose:

- Seasonal produce
- Supermarket own-brand products
- Cheaper cuts of meat
- Pulses
- Bulk ingredients

4.8 Availability

People can only buy foods that are available to them.

Availability is affected by:

- Season
- Location
- Shops
- Transport
- Price

4.9 Sensory characteristics

Food is judged using:

- **Appearance**
- **Taste**
- **Smell**
- **Texture**
- **Sound**

These are called **sensory properties**.

5. FOOD PROVENANCE

5.1 Where food comes from

Food can come from:

Plants

- Wheat
- Potatoes
- Fruit
- Vegetables

Animals

- Meat
- Fish
- Eggs
- Milk

5.2 Primary processing

Primary processing turns a raw agricultural product into something that can be used as a food ingredient.

Example:

Wheat → flour

5.3 Secondary processing

Secondary processing uses processed ingredients to make food products.

Example:

Flour → bread

5.4 Food miles

Food miles refer to the distance food travels from where it is produced to where it is consumed.

Longer transport distances can contribute to:

- Fuel use
- Carbon emissions
- Environmental impact

-

However, **food miles are not the only factor** determining environmental impact.

5.5 Sustainability

Sustainability means using resources in a way that allows them to remain available in the future.

Sustainable food production aims to reduce:

- Waste
- Pollution
- Excessive resource use
- Damage to ecosystems

5.6 Seasonal food

Seasonal food is food naturally produced at a particular time of year.

Benefits can include:

- Reduced need for artificial growing conditions.
- Potentially lower transport/storage requirements.
- Good freshness.

5.7 Organic food

Organic farming restricts the use of certain synthetic pesticides and fertilisers and follows specific production standards.

It does **not automatically mean a food is more nutritious**.

5.8 Fair trade

Fair trade aims to improve conditions and trading relationships for producers.

It can help producers receive fairer prices and support better working conditions.

5.9 GM foods

GM means **genetically modified**.

Genetic modification changes an organism's genetic material to produce a desired characteristic.

Potential advantages:

- Improved crop yields.

- Pest resistance.
- Improved nutritional characteristics.
- Crops suited to particular conditions.

Potential concerns:

- Environmental effects.
- Ethical concerns.
- Consumer acceptance.

6. FOOD PREPARATION & COOKING METHODS

Boiling

Food is cooked in liquid at its boiling point.

Advantages:

- Simple.
- No added fat required.

Disadvantages:

- Water-soluble vitamins can be lost into cooking water.

Steaming

Food is cooked using steam.

Advantages:

- Less nutrient loss than boiling because food doesn't sit directly in water.
- No added fat required.

Baking

Food is cooked using dry heat in an oven.

Examples:

- Cakes
- Bread
- Pastry

Grilling

Food is cooked using direct heat.

Examples:

- Toast
- Meat
- Vegetables

Can produce browning and desirable flavours.

Frying

Food is cooked in hot fat/oil.

Examples:

- Stir-frying
- Shallow frying
- Deep frying

It can add flavour and produce a crisp texture but can increase the fat/energy content of food.

Roasting

Food is cooked using dry heat in an oven.

Examples:

- Meat
- Potatoes
- Vegetables

Poaching

Food is cooked gently in liquid below boiling point.

Useful for delicate foods such as:

- Fish
- Eggs
- Fruit

Stewing

Food is cooked slowly in liquid.

Useful for:

- Tougher cuts of meat
- Vegetables

Slow cooking can tenderise meat.

Braising

Food is usually browned first and then cooked slowly in a small amount of liquid.

Microwaving

Microwaves cause water molecules in food to move, producing heat.

It is:

- Fast.
- Convenient.
- Useful for reheating and cooking.

Methods of heat transfer in cooking

- **Conduction** – heat moves through **direct contact**.
Example: a frying pan heating food.
- **Convection** – heat is transferred by the **movement of a liquid or gas**.
Example: hot air circulating in an oven.
- **Radiation** – heat travels as **waves** from a heat source.
Example: a grill or toaster.
- **Microwave radiation** – microwaves make **water molecules vibrate**, producing heat.
Example: heating food in a microwave.

7. PRACTICAL SKILLS

You need to understand not just **how** to perform a skill but **why** it is appropriate.

Knife skills

You should know techniques such as:

- Bridge hold
- Claw grip
- Slicing
- Dicing
- Chopping
- Julienne

Weighing and measuring

Accurate measurements are important because changing ingredient quantities can affect:

- Texture
- Flavour
- Structure

- Appearance
- Final yield

Dough making

You should understand:

- Mixing
- Kneading
- Proving
- Shaping
- Baking

Kneading develops gluten.

Proving allows yeast dough to rise.

You should understand how fat and flour are combined to produce the required texture.

For shortcrust pastry, overworking can develop gluten and make pastry tougher.

Sauce making

You should understand methods such as **gelatinisation** for making a starch-thickened sauce.

Example:

Flour + fat + milk → white sauce.

Presentation

Food should be:

- Attractive
- Appropriate for the target consumer
- Well portioned
- Neatly finished
- Appropriate in colour, shape and texture

8. FOOD LABELLING

Food labels provide information to consumers.

You should understand:

Ingredients list

Shows ingredients in descending order by weight.

Allergen information

Helps consumers identify ingredients that may cause allergic reactions.

Nutrition information

Can provide information such as:

- Energy
- Fat
- Saturates
- Carbohydrate
- Sugars
- Protein
- Salt

Storage instructions

Tell the consumer how the food should be stored safely.

Cooking instructions

Explain how the product should be cooked.

Date marks

Remember:

USE-BY → SAFETY

BEST-BEFORE → QUALITY

Pastry:

For AQA, students should understand **different types of pastry, ingredients, functions, methods, and how to avoid common faults.**

1.Types of Pastry

Shortcrust pastry

- Ingredients: flour, fat, water
- Method: rubbing-in
- Used for: pies, quiches and pasties
- Key point: fat coats the flour, limiting gluten development and making the pastry tender.

Sweet shortcrust pastry

- Ingredients: flour, fat, sugar, egg/water

- Method: rubbing-in
- Used for: fruit tarts and sweet pies
- Key point: sugar adds sweetness and helps browning.

Flaky pastry

- Ingredients: flour, fat, water
- Method: rolling and folding
- Used for: sausage rolls and turnovers
- Key point: layers form when the fat is folded between layers of dough.

Puff pastry

- Ingredients: flour, fat, water
- Method: repeated rolling and folding
- Used for: vol-au-vents and palmiers
- Key point: steam separates the layers, making the pastry rise.

Choux pastry

- Ingredients: flour, fat, water, eggs
- Method: cook flour mixture, then beat in eggs
- Used for: profiteroles and éclairs
- Key point: steam causes the pastry to rise and form a hollow centre.

Filo pastry

- Ingredients: very thin sheets of dough and fat
- Method: layering
- Used for: baklava and savoury pastries
- Key point: thin layers become crisp when baked.

2. Functions of the ingredients

Flour

- Provides **structure**.
- Contains gluten-forming proteins.
- In some pastries, gluten development needs to be limited to prevent a tough pastry.

Fat

- Adds **flavour and richness**.
- Makes pastry **short/tender** by coating flour particles and limiting gluten development.
- In puff/flaky pastry, layers of fat help create a **layered texture**.

Water

- Brings the ingredients together.
- Hydrates the flour so gluten can form.
- Too much water can make pastry **tough**.

Sugar

- Adds sweetness.
- Helps with **browning** and contributes to texture.

Egg

- Adds colour, flavour and richness.
- Helps with **binding and structure**.
- In choux pastry, eggs provide liquid and help the pastry expand.

3. The rubbing-in method

Students should know the stages:

1. **Sieve the flour.**
2. **Rub the fat into the flour** using fingertips until it resembles breadcrumbs.
3. Add the **liquid gradually**.
4. Bring together to form a dough.
5. **Do not overwork** the pastry.
6. Roll out and shape.
7. Bake.

Why use fingertips?

To keep the mixture cool. Warm hands can melt the fat, affecting the final texture.

4. Why does pastry need to be kept cool?

Keeping pastry cool helps prevent the fat from melting before baking.

If the fat melts too early:

- The pastry can become **greasy**.
- It may lose its shape.
- Shortcrust pastry may become less **short and crumbly**.
- Puff/flaky pastry may not form distinct layers.

5. Common pastry faults

Tough pastry

- Too much water.
- Too much handling.
- Overworking the dough.
- Too much gluten development.

Soggy pastry / soggy bottom

- Filling contains too much moisture.
- Pastry is undercooked.
- Oven temperature may be too low.
- Filling was too hot/wet when added.

Shrinking

- Pastry has been stretched during rolling.
- Too much gluten development.
- Not rested before baking.

Poor layers in puff pastry

- Fat melted into the dough.
- Pastry was not folded/rolled correctly.
- Pastry became too warm.

Pale pastry

- Insufficient baking.
- Oven temperature too low.
- Not enough browning.

★ **Key exam knowledge**

Students should be able to explain **why pastry works**, not just list ingredients.

A good exam answer might be:

Fat coats the flour particles, reducing gluten development. This produces a short, tender pastry rather than a tough, elastic texture.

And remember:

Pastry = ingredients + function + method + temperature + faults + how to prevent them.

★ **Pastry facts to remember**

- **Fat** → short, tender texture.
- **Flour** → provides structure.
- **Water** → helps form the dough and develops gluten.
- **Sugar** → sweetness and browning.
- **Egg** → colour, richness, binding and structure.
- Keep pastry **cool** to prevent the fat melting.
- Avoid **overworking** pastry because it can become tough.
- **Too much water** can also make pastry tough.
- **Stretching** pastry can cause it to shrink during baking.

Gluten formation

Gluten forms when **flour is mixed with water and kneaded**.

- **Glutenin and gliadin** are proteins found in wheat flour.
- When water is added, these proteins join together to form **gluten**.
- **Kneading** develops the gluten network, making dough **elastic and stretchy**.
- Gluten helps dough **trap gas**, allowing bread to rise.

Gluten is formed when flour and water are mixed and kneaded. It makes dough stretchy and helps bread rise.

Food Fortification

Food fortification means **adding vitamins and/or minerals to a food to increase its nutritional value**.

What students should know

- **Purpose:** To prevent or reduce nutrient deficiencies in the population.
- **Common fortified foods:** Breakfast cereals, bread, milk and spreads.
- **Nutrients added:** Vitamins and minerals such as **vitamin D, calcium, iron and folic acid**.
- **Example:** Some breakfast cereals have **iron and vitamins** added to them.
- Fortification can help people get enough nutrients **without having to change their usual diet**.

Exam definition

Food fortification is the **addition of vitamins and minerals to a food to improve its nutritional value and help prevent deficiencies**.

Don't confuse these

Fortification = nutrients are **added** to food.

Enrichment = nutrients lost during food processing are **replaced**.

Supplementation = taking nutrients separately, such as **vitamin tablets**.

Cheese and Yoghurt Making

Cheese making

The main steps are:

1. **Milk is pasteurised** – heated to kill harmful bacteria.
2. **Starter cultures are added** – bacteria ferment the **lactose** (milk sugar) into **lactic acid**.
3. **Rennet is added** – this causes the milk proteins, especially **casein**, to coagulate and form a solid **curd**.
4. The curd is **cut** and separated from the liquid **whey**.
5. The curds are **pressed** to remove more whey.
6. **Salt** is added for flavour and preservation.
7. Some cheeses are **ripened/matured**, allowing microorganisms and enzymes to develop the flavour and texture.

Key terms to remember:

lactic acid → casein → rennet → curds → whey → salt → ripening

Yoghurt making

8. Milk is **heated/pasteurised**.
9. It is cooled to a suitable temperature.
10. **Starter bacteria** are added.
11. The bacteria ferment **lactose into lactic acid**.
12. The lactic acid causes milk proteins to **coagulate**, making the yoghurt thicker.
13. It is cooled and stored in the refrigerator.

Important bacteria: *Lactobacillus bulgaricus* and *Streptococcus thermophilus*.

Exam tip

A common AQA question is:

“Explain how bacteria are involved in yoghurt production.”

A strong answer would be:

Starter bacteria ferment the lactose in milk and produce lactic acid. The increased acidity causes the milk proteins to coagulate, which thickens the milk and gives yoghurt its characteristic texture and flavour.

Jam making

Jam is made by cooking fruit with sugar and pectin.

1. **Prepare the fruit** – wash, peel and cut it.
2. **Add sugar and pectin** – pectin helps the jam set.
3. **Heat and boil** – water evaporates, and the mixture thickens.
4. **Pectin sets** – as the jam cools, it becomes thick and spreadable.
5. **Put into sterilised jars** and seal.

Jam is made by boiling fruit with sugar and pectin. The water evaporates and the pectin helps the jam set.

Sustainable fishing

Sustainable fishing means catching fish at a rate that allows fish populations to **breed and replace the fish being caught**, so stocks do not become depleted.

Key methods

- **Fishing quotas** – limit the number/weight of fish that can be caught. This leaves enough fish to reproduce.
- **Larger mesh nets** – allow **smaller, younger fish to escape**, so they can grow and reproduce.
- **Closed seasons** – fishing is stopped during breeding seasons, allowing populations to reproduce.
- **Minimum catch size** – prevents fishermen catching fish before they have reproduced.
- **Protected areas/no-take zones** – areas where fishing is banned, allowing fish populations to recover.

Food Production

Food security = having enough food for the population.

- Food production is affected by:
 - increasing population
 - changing diets
 - climate change
 - pests and diseases
 - limited land and water
- **Sustainable fishing** helps maintain fish stocks for future generations.
- **Fishing quotas** limit the number of fish caught.
- **Net mesh size** can be increased so young fish escape and can reproduce.
- **Selective breeding** can produce animals or crops with desirable characteristics, such as higher yields.
- **Biotechnology** can be used to improve food production, including genetically modified organisms.

9. AQA EXAM COMMAND WORDS

This is where many students lose marks.

IDENTIFY

Simply name something.

Identify one source of protein.

Answer: Eggs.

STATE

Give a fact.

State one function of protein.

Answer: Growth and repair.

DESCRIBE

Give characteristics or details.

Describe steaming.

Answer: Food is cooked using steam produced from boiling water.

EXPLAIN ★

Give a **reason + consequence**.

Explain why raw chicken should be stored below salad.

Good answer:

Raw chicken may contain pathogenic bacteria. Keeping it below the salad reduces the risk of juices dripping onto the salad and causing cross-contamination.

COMPARE

Give similarities **and/or differences**, depending on the wording.

Compare boiling and steaming.

You could say:

Both use water to transfer heat, but boiling cooks food directly in water whereas steaming cooks food using steam.

EVALUATE ★

Give:

1. Advantages
2. Disadvantages
3. A judgement/conclusion

For example:

Evaluate using organic ingredients.

You could discuss:

- Environmental benefits.

- Farming methods.
- Cost.
- Availability.
- Consumer perceptions.

Then make a conclusion:

Overall, organic ingredients may be a good choice where environmental considerations are important, but their higher cost may make them less suitable for consumers on a limited budget.