

# GCSE SCIENCE (DOUBLE AWARD)



## INTRODUCTION

GCSE Science (Double Award) involves the study of all three sciences. These will be assessed in separate units but will result in one qualification worth two GCSEs. The course will develop your understanding of many areas of science and also develop your practical and problem-solving skills.

## WHAT WILL I STUDY?

### Unit 1: Biology 1

- Cells and movement across membranes
- Respiration and the respiratory systems in humans
- Digestion and the digestive system in humans
- Circulatory system in humans
- Plants and Photosynthesis
- Ecosystems, nutrient cycles and human impact on the environment

### Unit 2: Chemistry 1

- The nature of substances and chemical reactions
- Atomic structure and the Periodic Table
- The ever-changing Earth
- Rate of chemical change

### Unit 3: Physics 1

- Electric circuits
- Generating electricity
- Making use of energy
- Domestic electricity
- Features of waves

### Unit 4: Variation, Homeostasis and Microorganisms

- Classification and biodiversity
- Cell division and stem cells
- DNA and inheritance
- Variation and evolution
- Response and regulation
- Kidneys and homeostasis
- Micro-organisms and their applications
- Disease, defence and treatment

### Unit 5: Chemistry 2

- Bonding, structure and properties
- Acids, bases and salts
- Metals and their extraction
- Chemical reactions and energy
- Crude oil, fuels and organic chemistry

### Unit 6: Physics 2

- Distance, speed and acceleration
- Newton's laws
- Work and energy
- Stars and planets
- Types of radiation Half-life

### Unit 7: Practical Assessment

## HOW WILL I BE ASSESSED?

The qualification is split into 7 units, which of are all marked by WJEC. All units are available as Higher or Foundation units and are assessed by exam.

- Units 1 –6 are worth 15% each of the total marks
- Unit 7 is worth 10% of the total marks

## WHAT SKILLS WILL I DEVELOP?

You will develop a variety of skills that will help you understand and apply scientific concepts in practical and real-world situations. These include:

### 1. Practical Skills (Lab Skills)

- Being able to accurately observe and measure physical properties in experiments (e.g., temperature, mass, volume).
- Gathering data from experiments, organising it, and drawing meaningful conclusions.
- Learning to use microscopes, thermometers, Bunsen burners, and other lab tools properly and safely.
- Designing and conducting experiments to test hypotheses and draw conclusions from data.

### 2. Analytical Skills

- You'll work with graphs, tables, and charts to analyse patterns, trends, and relationships in scientific data.
- Evaluating evidence and making decisions based on the data you collect, often weighing different factors or possibilities.
- Applying scientific concepts to solve real-world problems or hypothetical situations.

## CAREERS IN SCIENCE

This course is ideal for students seeking to study Science beyond GCSE and thinking of gaining an 'A' level in a Science or wanting to follow a Science-based career.

It is valuable for those who wish to impress employers and colleagues with their ability to explain and think about the way the world works and the challenges we face.

Some science-based careers include:

- Aerospace engineer
- Dentist
- Doctor
- Electrical engineer
- Nurse
- Paramedic
- Pharmacist
- Radiographer
- Veterinary surgeon

**EVERY CHILD WILL SUCCEED**

# GCSE SEPARATE SCIENCES

## (TRIPLE SCIENCE)



### INTRODUCTION

Nearly every serious issue we face at the moment requires some understanding of science to appreciate it...

"£50m project will pinpoint the genetic variations that cause disease ..."

"Warning on biofuels..."

"New organ hope as scientists uses cells to grow beating heart ..."

From energy supply to climate change and from your mobile phone to genetic engineering, disease and recycling, science plays a vital part of your life. What is more, the skills you learn studying science are highly valued by all employers.

### WHAT WILL I STUDY?

You will study for 3 GCSE grades in Science – GCSE Biology, GCSE Chemistry and GCSE Physics.

You will study 3 units for each of the courses. Unit 1 for each course is studied in Year 10 and Unit 2 will be studied in Year 11. Unit 3 is the practical assessment and is studied alongside Units 1 and 2, but assessed in Unit 3.

Topics for each course include:

GCSE Biology

Unit 1 Cells, Organ Systems And Ecosystems

Unit 2 Variation, Homeostasis And Micro-Organisms

GCSE Chemistry

Unit 1 Chemical Substances, Reactions And Essential Resources

Unit 2 Chemical Bonding, Application Of Chemical Reactions And Organic Chemistry

GCSE Physics

Unit 1 Electricity, Energy And Waves

Unit 2 Forces, Space And Radioactivity

### HOW WILL I BE ASSESSED?

There are two examinations for each course and one piece of controlled assessment (Unit 3) for each of the courses.

Each examination is 45% of the total qualification.

10% of the qualification is Unit 3, the controlled assessment.

### WHAT SKILLS WILL I DEVELOP?

You will develop a variety of skills that will help you understand and apply scientific concepts in practical and real-world situations. These include:

#### 1. Practical Skills (Lab Skills)

- Being able to accurately observe and measure physical properties in experiments (e.g., temperature, mass, volume).
- Gathering data from experiments, organising it, and drawing meaningful conclusions.
- Learning to use microscopes, thermometers, Bunsen burners, and other lab tools properly and safely.
- Designing and conducting experiments to test hypotheses and draw conclusions from data.

#### 2. Analytical Skills

- You'll work with graphs, tables, and charts to analyse patterns, trends, and relationships in scientific data.
- Evaluating evidence and making decisions based on the data you collect, often weighing different factors or possibilities.
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- Veterinary surgeon