

SEE (Oldham) Science (Academic Year 2025/26)

Science Overview

Science education provides the foundations for understanding the world through the specific disciplines of **biology**, **chemistry** and **physics**. All pupils should be taught a **broad, balanced curriculum** covering essential aspects of the knowledge, methods, processes and uses of science. They should be encouraged to develop a sense of excitement and curiosity about natural phenomena and should understand how science can be used to explain what is occurring, predict how things will behave, and analyse causes.

The **aim of this curriculum** is to ensure that all learners:

- develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics
- develop understanding of the nature, processes and methods of science through different types of science enquiries that help them to answer scientific questions about the world around them
- are equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future

The **programmes of study** describe a sequence of knowledge and concepts. It is important that learners develop secure understanding of each key block of knowledge and concepts in order to progress to the next stage.

Cross curricular links are extremely important. Learners should:

- apply their **mathematical knowledge** to their understanding of science, including collecting, presenting and analysing data.
- be familiar with, and use, both everyday terms and technical terminology accurately and precisely. They should build up an extended specialist **vocabulary**.
- be made aware how science links to other curriculum areas such as PE, PSHE, geography and history.

Working scientifically is a key element of science, and practical activities will be embedded into as many lessons as possible. Learners will be engaged in model making, planning and carrying out experiments, analysing data and evaluating.

Health & safety will be routinely considered and a risk assessment carried out prior to any practical being included on the programme of study. However, due to the limited laboratory facilities in the provision, the use of equipment and materials of high risk is minimal.

KS3/KS4	Science
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AQA Unit Award Scheme – all KS3 and KS4 learners

Learners will achieve a certificate each time they successfully complete a unit of learning. They can build up a portfolio of certificates to evidence their skills, knowledge and experience.

AQA Entry Level Certificate (AQA Science 5960) – all KS4 learners

120 guided learning hours.

Consists of 6 units – **2 biology, 2 chemistry, 2 physics**.

Learners complete 1 **teacher designed assignments (TDA)** practical investigation each unit. These are marked internally /15

Learners complete 1 **externally set assignment (ESA)** each unit. These short exams are marked internally /20

Results are recorded on a candidate record form, which is sent off with the evidence to the moderator (May of Y11)

Learners can achieve a **single award** on completion of 3 TDA's and 3 ESA's

Learners can achieve a **double award** on completion of 6TDA's and 6 ESA's

The award can be **Level 1, Level 2** or **Level 3**, depending on the marks achieved in the assignments.

Cambridge iGCSE Single Award (0653) - selected KS4 learners

130 guided learning hours.

Learners follow the ELC route above, but have more contact hours to fill in the extra content needed for the GCSE award.

Learners can achieve **1 x GCSE in science**, ranging from grades 1-1 up to 5-5.

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KS3 Programme of study (NC statements, taught alongside KS4 curriculum)

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 7	THE HUMAN BODY Microscopy Cells and organisation Nutrition and digestion Gas exchange	PARTICLE CHEMISTRY Atoms, elements, compounds Changes in state	ENERGY Renewable / non-renewable resources Energy stores Energy transfers	CHEMICAL REACTIONS OF ACIDS Acids and bases Neutralisation Acids and metal	ECOLOGY Feeding relationships Food chains Ecosystems Interdependence	FORCES Force diagrams Measuring forces Contact/non-contact forces
Assessment	The human body End of term assessment	Particle Chemistry End of term assessment	Energy End of term assessment	Chemical reactions End of term assessment	Ecology End of term assessment	Year 7 End of year assessment
Year 8	PLANT BIOLOGY Plant cells Photosynthesis Gas exchange Plant reproduction	SEPARATING CHEMICALS Diffusion Filtering Distillation Chromatography	LIGHT AND SOUND Waves transferring energy Light waves Transmission of light Sound waves	CHEMISTRY OF THE PERIODIC TABLE AND MATERIALS Arrangement of table Metals, non-metals Alloys Properties & reactions	BODY SYSTEMS The skeletal system muscular system Respiration	ELECTRICITY Current / voltage Circuits Static
Assessment	Plant biology End of term assessment	Separating End of term assessment	Light and sound End of term assessment	Periodic table End of term assessment	Body systems End of term assessment	Year 8 End of year assessment
Year 9	HEALTHY BODY Health Fighting disease Reproduction	EARTH CHEMISTRY Structure of the Earth Rock cycle Earth's Atmosphere Human impact on climate	MAGNETISM AND ELECTROMAGNETIC SPECTRUM Magnetic fields + poles Earth's magnetism Electromagnetic spectrum	CHEMICAL REACTIONS AND EQUATIONS Combustion Neutralisation Exo / endothermic Equations	GENETICS AND EVOLUTION Variation Inheritance, chromosomes, DNA	SPACE PHYSICS Galaxies Solar system Day / night Gravity
Assessment	Healthy body End of term assessment	Earth chemistry End of term assessment	Magnetism End of term assessment	Chemical reactions End of term assessment	Genetics & evolution End of term assessment	Year 9 End of year assessment

SEE (Oldham) **Science (Academic Year 2025/26)**
KS4 Programme of Study - AQA Entry Level Certificate (AQA Science 5960)

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 10	C1: BIOLOGY THE HUMAN BODY 3.1.1 What is the body made of? 3.1.2 How the body works	C3: CHEMISTRY ELEMENTS MIXTURES AND COMPOUNDS 3.3.1 Atoms, elements and compounds 3.3.2 How structure affects properties 3.3.3 Separating mixtures	C5: PHYSICS ENERGY AND FORCES 3.5.1 Energy transfers and resources 3.5.4 Atoms and nuclear radiation	C3: CHEMISTRY ELEMENTS MIXTURES AND COMPOUNDS 3.3.4 Metals and alloys 3.3.5 Polymers C4: CHEMISTRY CHEMISTRY IN OUR WORLD 3.4.1 Reactions of acids 3.4.2 Energy and rate of reaction	C2: BIOLOGY ENVIRONMENT, EVOLUTION AND INHERITANCE 3.2.1 What are feeding relationships? 3.2.2 What determines where species live? 3.2.3 How life has developed on Earth	C5: PHYSICS ENERGY AND FORCES 3.5.2 Forces at work 3.5.3 Speed and stopping distances C6: PHYSICS ELECTRICITY, MAGNETISM AND WAVES 3.6.1 Electrical current 3.6.2 Domestic electricity
Assessment	TDA: Compare energy released when burning food	TDA: investigate separating using chromatography	TDA: Investigating factors that affect rate of cooling	TDA: Compare the rate of chemical reactions ESA: Unit C3	TDA: compare growth of seeds in different conditions ESA: Unit C2	TDA: Investigate which materials are the best electrical conductors ESA: Unit C5
Year 11	C1: BIOLOGY THE HUMAN BODY 3.1.3 How the body fights disease 3.1.4 How the body is coordinated	C4: CHEMISTRY CHEMISTRY IN OUR WORLD 3.4.3 The Earth's atmosphere 3.4.4 Fuels and human impact 3.4.5 Water for drinking	C6: PHYSICS ELECTRICITY, MAGNETISM AND WAVES 3.6.3 Magnetism and electromagnetism 3.6.4 Types of waves 3.6.5 Electromagnetic waves	Opportunity to catch up any missing TDA's and ESA's. 3 of each = single award 6 of each = double award Collation of work, completion and submission of student record forms and declaration sheets to moderator before deadline		
Assessment	TDA: Compare speed of catching reflex action ESA: Unit C1	TDA: investigate the mass of dissolved solids in water ESA: Unit C4	TDA: investigate penetrating power of electromagnetic waves ESA: Unit C6			