Department Name: Science

Department's vision: Students will be able to use practical, analytical and mathematical skills to apply their scientific knowledge to a range of new contexts, allowing them to evaluate information and make informed decisions about the world around them.

Year Group	Topic One	Topic Two	Topic Three	Topic Four	Topic Five	Topic Six
Year 7	Chemistry 1: Matter Physics 1: Forces and Motion	Biology 1: Cells & Systems	Physics 2: Light & Space Chemistry 2: Reactions	Biology 2: Inheritance	Physics 3: Electricity and magnetism	Scientific skills
What will students know by the end of the topic...	1) Chemical particles and how to separate them. 2) Types of forces and how objects move.	1) How cells, organs and systems function. How food is digested and what makes a balanced diet.	1) How light behaves and how this affects our Solar System 2) Different types of chemical reactions	1) Reproduction, what makes us all different and how characteristics are inherited.	1) The affects of electrical components and what magnetism is.	How to plan, safely carry out and analyse scientific investigations
Year 8	Physics 4: Energy and Energy Resources Biology 3: Healthy Body	Chemistry 3: The Earth	Physics 5: Particles & Matter Chemistry 4: Periodic table	Physics 6: Sound and Waves	Biology 4: Organisms and their environment	Scientific skills
What will students know by the end of the topic...	1) How energy is stored & transferred.. Renewable and non-renewable energy. 2) What is health. How we stay healthy.	1) The structure of the Earth, using the Earth's resources and pollution.	1) What are pressure and density. 2)Atomic structure and the periodic table.	1) What are waves, how they behave and how sound travels.	1) How species interact in ecosystems. How plants photosynthesise. How and why organisms evolve.	How to plan, safely carry out and analyse scientific investigations
Year 9	B1) Cell Biology C1) Atomic Structure & the Periodic table	P1) Energy P3) Particles	C2) Bonding, Structure & the Properties of Matter	B2) Organisation of Living Organisms	P5) Motion	Required Practicals
What will students know by the end of the topic...	B1) Specialisations of cells & cell growth C2) How elements are organised	P1) Energy stores and changes P3) How particles behave	C2) How atoms are held together by bonding	B2) Organisation of cells into tissues & organs in plants and animals	P5) Newton's Laws and how to measure movement	Identify & control variables. Safely manipulate equipment. Analyse, interpret & evaluate data.
Year 10	B4) Bioenergetics C4) Chemical Changes P2) Electricity	B3) Infection & Response. C5) Energy Changes P4) Atoms & radiation	C3) Quantitive Chemistry P6) Waves P8) Space (separate Physics only)	B5) Homeostasis C9) The composition & evolution of our atmosphere	B7) Ecology C10) Using resources P7) Magnests and electromagnistism	Required Practicals
What will students know by the end of the topic...	B4) Detail of respiration & photosynthesis C4) Different types of chemical reactions P2) The flow of electricity in a circuit	B3) Disease transmission & prevention C5) Energy changes in chemical reactions P4) Types & properties of ionising radiation	C3) How to calculate the outcomes of chemical reactions P6) Properties of different waves P8) The physics of space	B5) Control systems in the body C9) The composition & evolution of our atmosphere	B7) How species interact with their environment C10) The Earth's natural resources P7) Uses of magnets and electromagnets	Identify & control variables. Safely manipulate equipment. Analyse, interpret & evaluate data.
Year 11	B6) Inheritance, Variation & Evolution C6) Rate of Chemical Change	C7) Organic Chemistry C8) Chemical Analysis	P5) Forces	Exam Preparation	Exam Preparation	Required Practicals
What will students know by the end of the topic...	B6) How characteristics are inherited and how evolution occurs C6) What affects a chemical reaction	C7) The structure, properties and reactions of carbon compounds C8) Tests to detect specific chemicals	P5) Types of forces and their effects.			Identify & control variables. Safely manipulate equipment. Analyse, interpret & evaluate data.
Year 12	Biology (A Level) Biological Molecules, Cells, Exchange of substances, Genetic Information	Chemistry (A Level) Physical, Inorganic & Organic	Physics (A Level) Mechanics, Light, Materials, Electrical Circuits, Working as a Physicist	Applied Science (BTEC Extended Certificate) Unit 1: Principles & Applications Unit 2: Practical Procedures & Techniques Unit 3: Science Investigation Skills Unit 12: Diseases & Infections		
Year 13	Biology (A Level) Energy transfers, Responses, Evolution & Ecosystems, Gene Expression	Chemistry (A Level) Physical, Inorganic & Organic	Physics (A Level) Mechanics, Fields, Space, Nuclear & Particle Physics, Thermodynamics			

Key Stage Four Specification Link

Combined Science: Trilogy | Biology | Chemistry | Physics

Key Stage Five Specification Link

Biology | Chemistry | Physics | Applied Science

The following trips run through this subject...

What will students see in their books or folders?

Theory notes
Annotated diagrams
Model answers
Worked examples
Extended answers
Self, peer & teacher assessed work
Quizzing

This subject supports students' reading and literacy through…

Emphasis on the correct use of subject specific vocabulary
The development of extended writing
Reading articles about familiar and unfamiliar scientific topics
Summarising material that has been read

This subject supports students' numeracy through…

Using mathematical skills to process data e.g. calculating means and rates of reaction
Plotting & interpreting graphs including determining slope and intercept
Using & rearranging equations
Using angular measurement
Calculating area, surface area, volume

This subject promotes the following revision strategies as the most effective means of retaining content…

Flash cards
Mind maps
Look, say, cover, write, check
Practising past exam questions

Opportunities for exploring this subject further are available through …

STEM activities
Science club
Recommended websites
Science in the News
Biology Twitter feed