



Year 7 Focus

In Year 7 we teach on a rota system a total of 12 topics, 4 from each discipline, Biology, Chemistry and Physics. Each topic takes on average 3-4 weeks to complete including an assessment. We aim to build knowledge and skills from Primary School by starting with the fundamentals in each discipline. All students will begin their Science education with our 'Bootcamp', where we teach a combination of basic Scientific Skills including equipment and how to conduct an investigation.

Our first rotation consists of States of Matter, Cells, Forces and Motion. These topics have been chosen as they form the basis of understanding across the disciplines and provide immediate opportunities for different experimental techniques.

Our second rotation consists of Atoms, Elements and Compounds, Reproduction, Energy and Fuels. These topics can build on the previous set, using knowledge of States of Matter to progress to what all materials are made of. The Cells topic is applied in a specific context of Reproduction and the Forces and Motion links directly to Energy and Fuels.

Our third rotation consists of The Periodic Table, Photosynthesis, and Heat Transfers. These topics again build from previous knowledge, transferring ideas of atoms and elements to the construction of the Periodic Table. Photosynthesis again draws on ideas from Cells and plant reproduction. Heat Transfers comes directly from the ideas on Energy.

Our final rotation consists of Acids and Alkalis, Ecosystems and Space. After learning about what all materials are made of, we use the Acids and Alkalis topic to start talking about how atoms and elements change in the context of chemical reactions. The Ecosystems builds on the knowledge of plants and allows us to discuss issues with maintaining biodiversity. Space is slightly more stand-alone, but is a fascinating topic our students always love.

Fertile Questions	States of Matter – Can everything exist in more than one form?
	Atoms, elements and compounds – Is everything built from identical parts?
	The Periodic Table – What is a good way to organise substances?
	Acids and Alkalis – Can one substance change another?
	Cells – How are living things organised?
	Reproduction – Does reproduction always involve sex?
	Photosynthesis – How do plants sustain life on Earth?
	Ecosystems – How do organisms interact with each other and their environments?
	Forces and Motion – Are sports men and women Physics geniuses?
	Energy and Fuels – Where does all the energy on Earth come from?
	Heat Transfers – Why are silver blankets placed round a runner after a marathon?
	Space – If needed, could humans colonise the solar system?

SCIENCE

KS3 Curriculum Map





Year 8 Focus

In Year 8 we teach on a rota system a total of 10 topics, 3 from Biology, 4 from Chemistry and 3 from Physics. Each topic takes on average 4-6 weeks to complete including an assessment. We aim to build knowledge and skills from Year 7 by moving on from the fundamentals in each discipline to more specific applications. All these topics provide additional opportunities to develop practical and investigative skills.

Our first rotation consists of Pure and Impure, Nutrition and Health, and Electricity. These topics have been chosen as they move on from Year 7 and build knowledge and skills. The Pure Impure topic allows students to take ideas from atoms, elements, compounds and chemical reactions and apply them to how to identify products. Nutrition and Health relies on an understanding of how we are built and how we function. Electricity is a fundamental Physics concept that uses knowledge of energy transfers and forces.

Our second rotation consists of Earth and the Atmosphere, Respiration and Circulation, and Waves. Within the Earth and the Atmosphere we use some of the ideas from Pure and Impure in a practical setting. Respiration and Circulation are two key processes that rely heavily on Nutrition and an understanding of health. Waves again builds on prior knowledge of energy transfers.

Our final rotation consists of Materials, Genetics, Chemical Reactions and Energetics, Fluids and Solids. These are some of the more complex topics where we move onto content that will be examined in the GCSE. In Materials we look at how reactions occurs and properties of substances. Genetics uses ideas from Cells and Reproduction to explain how we pass on our characteristics. Chemical Reactions and Energetics looks in detail at different kinds of reactions and the energy changes within them. Fluids and Solids allows us to investigate how forces act in both states and how movement is possible.

FertileQuestions	Fluids and Solids – What allows an oil tanker to stay afloat?
	Earth and the Atmosphere – Will we always be able to live on Earth?
	Materials – Would you buy a magnesium car?
	Chemical Reactions and Energetics – Why does respiration keep us alive, but combustion kill us?
	Nutrition and Health – Do poor diets lead to preventable disease?
	Respiration and Circulation – Can humans run forever?
	Genetics – Are we born this way?
	Electricity – What does it take to power your phone?
	Waves – Are we really the right way up?
	Pure and Impure – Can you untangle a liquid?

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KS3 Curriculum Map

