Science Curriculum Overview - Autumn 2026

Year 7	
What are you teaching? Autumn 1	**What are you teaching? Autumn 2**
C1 Particles and their behaviour, Elements, atoms and compounds	Cells and Forces
Why have you chosen to teach this unit, and this time?	**Why have you chosen to teach this unit, and this time?**
Chemistry is the least covered science at KS2. And there is no chemistry in the KS2 Year 6 National curriculum. This unit bridges the gap and enables students to be reintroduced to the ideas of different materials from KS2 but also now include particle theory at a basic level. C1 makes the safety lesson that is completed at the start of the course applicable straight away and enables the use of new apparatus such as bunsen burners which is not done at primary. It is strategically taught first to fire pupil imagination and enthuse them with the exciting aspects of practical work in the first term.	Cells and Forces are the threshold concepts of Biology and Physics and are taught so that we are able to ensure that students have a holistic science experience and exposure to the key ideas in science. Completion of these areas of science will enable the appropriate interleaving of concepts in a spiral manner and ensure that we promote mastery.
What are the 3 key pieces of knowledge you will have expected students to acquire by the end of this unit?	**What are the 3 key pieces of knowledge you will have expected students to acquire by the end of this unit?**
• Elements are the building blocks of all matter and are represented by particles. • Elements are bonded together to make compounds which are also shown as particles. • Giving energy to substances enables them to overcome the forces and change state.	• Cells are the building blocks for living things (Link to elements) • Cells are adapted for their function. • Forces cause objects to move and or change shape. • The effect of balanced and unbalanced forces is specific motion.

Is this topic on the National Curriculum? Yes **Will all staff be teaching this unit?** Yes	**Is this topic on the National Curriculum?** Yes **Will all staff be teaching this unit?** Yes

Year 8	
What are you teaching? Autumn 1	**What are you teaching? Autumn 2**
The periodic Table Health and Lifestyle	Electricity and Magnetism
Why have you chosen to teach this unit, and this time?	**Why have you chosen to teach this unit, and this time?**
Enables the review of particle theory and extends student knowledge so that they begin to understand that elements are specific. Recognition of patterns in the periodic table ensures that students begin to gain a better understanding of the nature of chemical reactions.	Key concept in Physics and reviews and revisits the electricity taught in year 4 and year 6 of the KS2 national curriculum. Students conduct electricity practicals and think about what this means in terms of the movement of energy through wires and components.
What are the 3 key pieces of knowledge you will have expected students to acquire by the end of this unit?	**What are the 3 key pieces of knowledge you will have expected students to acquire by the end of this unit?**
• That the building blocks of matter are classified in the periodic table. • That lifestyle can contribute to illness and disease. • Understand that national directives that help to keep the nation healthy	• That magnetism is a non-contact force. • That electricity helps to power things as it is the movement of energy in a circuit. • Recognise and use more electrical symbols in addition to those in year 6.
Is this topic on the National Curriculum? Yes **Will all staff be teaching this unit?** Yes	**Is this topic on the National Curriculum?** Yes **Will all staff be teaching this unit?** Yes

Year 9	
What are you teaching? Autumn 1	**What are you teaching? Autumn 2**
Cells & Atomic Structure and the periodic table	Energy & Organisation
Why have you chosen to teach this unit, and this time?	**Why have you chosen to teach this unit, and this time?**
Another review and further use of particle theory. Looking at cells and the different types of cells and naming the extra organelles that have large biological functions like mitochondria and ribosomes.	Ensures that students achieve the mastery of the organisation unit taught in the spring term of year 8. Then further looks at specific organs and their function in organ systems. It enables students to understand how systems function. This has to come before diseases as you need to know how something works before understanding how to treat it when it doesn't work.
What are the 3 key pieces of knowledge you will have expected students to acquire by the end of this unit?	**What are the 3 key pieces of knowledge you will have expected students to acquire by the end of this unit?**
• How to make make up a slide and use a microscope. • Atoms are made up of 3 subatomic particles • That atomic structure relates to the position of element in the periodic table.	• That energy cannot be created nor destroyed and only transferred from one store to another, and how. • That cells form tissue, tissues form organs and organs for systems. • That a group of systems form an organism and that organisms have things in common

Is this topic on the National Curriculum? Yes **Will all staff be teaching this unit?** Yes	**Is this topic on the National Curriculum?** Yes **Will all staff be teaching this unit?** Yes

Year 10	
What are you teaching? Autumn 1	**What are you teaching? Autumn 2**
Chemical Changes & Atomic Structure and radioactivity	Homeostasis/Energy Changes and Forces
Why have you chosen to teach this unit, and this time?	**Why have you chosen to teach this unit, and this time?**
Review and deepening understanding of the nature of chemical reactions and more work on particles and their effects. Completion of required practical and understanding how the generic equations can be written to show specific chemical reactions.	Deepening the understanding of Organisation taught in year 9. Further look at specific organs and their natural responses. Energy in chemical reactions reviewed from the point of view of cells and organs and further work on the forces and impact on motion completed in year 7.
What are the 3 key pieces of knowledge you will have expected students to acquire by the end of this unit?	**What are the 3 key pieces of knowledge you will have expected students to acquire by the end of this unit?**

• That a reaction can be described in terms of the loss of electrons or the gain of electrons. • What an ionic equation is and how to write them. • Unstable atoms can become stable by emitting radiation.	• That mammals are able to maintain a constant internal environment. • Mechanisms for negative feedback. • Chemical reactions can be described as endothermic and exothermic and why.
Is this topic on the National Curriculum? Yes **Will all staff be teaching this unit?** Yes	**Is this topic on the National Curriculum?** Yes **Will all staff be teaching this unit?** Yes

Year 11	
What are you teaching? Autumn 1	**What are you teaching? Autumn 2**
Chemical Changes /Atomic Structure (some)	Homeostasis / Energy Changes and forces (some)
Why have you chosen to teach this unit, and this time?	**Why have you chosen to teach this unit, and this time?**
Areas of weakness from the Year 10 mocks and formed the basis of teaching for mastery. Greater opportunity to review the primary idea of atomic structure and particle model whilst still ensuring that practical skills are further enhanced.	Culmination of cells.

What are the 3 key pieces of knowledge you will have expected students to acquire by the end of this unit?	What are the 3 key pieces of knowledge you will have expected students to acquire by the end of this unit?
• Recognise chemical reactions involving metals and acids • Know that a redox reaction has electron transferred from one atom to another. • Changes in the nuclei of atoms causes the emission of radiation	• That mammals are able to maintain a constant internal environment. • Mechanisms for negative feedback. • Chemical reactions can be described as endothermic and exothermic and why.
Is this topic on the National Curriculum? Yes **Will all staff be teaching this unit?** No depends on tier and pathway	**Is this topic on the National Curriculum?** Yes **Will all staff be teaching this unit?** No depends on tier and pathway

Science Curriculum Thread

We aim to create the very best scientists. We challenge students to think, act and speak like those working in the field would. We do this through quality first teaching and adhering to an established scheme of work encouraging the pursuit of knowledge and facts and applying these to unfamiliar contexts. We teach content from basics through to advanced concepts spiralling back and building on previous taught work.

We do this by using effective questioning techniques in each lesson to push our students to think beyond their first response. They are expected to carry out practical work in each topic, where it is appropriate, in a responsible manner and record data effectively in order to be able to analyse it and draw conclusions from it. Keywords are vital in science and are provided on each topic checklist in an unambiguous manner in order to allow students to recognise them. A glossary of terms is also provided to help any students who may need further clarification on the meaning of the keywords. Teachers use these words during lessons and expect verbal responses from students to include appropriate scientific language. Topics such as Cells which are effectively taught in each year at different levels. For example, in year 7 we learn what cells are and how they come together to make tissue. We learn more about specialised cells in year 8 and how they affect an organism's function. In year 9 we learn how cells obtain their nutrients and perform their processes. In year 10 we learn about bioenergetics and how particular cells of certain organisms play a role in this. In year 11 we learn about the evolution of features and the inheritance of the features locked in the nucleus of cells. This and other areas of the curriculum are spiralised from year 7 all the way to year 11.