

	<u>Topic 1</u>	<u>Topic 2</u>	<u>Topic 3</u>	<u>Topic 4</u>	<u>Topic 5</u>	<u>Topic 6</u>
Year 6 Science	<u>The human circulatory system</u>	<u>Changing circuits</u>	<u>Keeping healthy</u>	<u>Why we group and classify living things</u>	<u>Evolution and inheritance</u>	<u>Light and how it travels</u>
Key Substantive Knowledge: What will students learn?						
Year 6 Science	This unit explores the human circulatory system, identifying the heart, blood vessels, and blood functions. It examines how diet, exercise, drugs, and lifestyle affect body function and details nutrient and water transport in animals. Emphasis is on data recording and presenting findings. The human circulatory system KS2 Y6 Science Lesson Resources Oak National Academy	This unit explores how circuit components like lamps and buzzers function, including the effect of cell number and voltage. It covers using symbols in circuit diagrams, planning scientific enquiries, taking precise measurements, recording data, and presenting findings with evidence and conclusions. Changing circuits KS2 Y6 Science Lesson Resources Oak National Academy	This unit examines how diet, exercise, drugs, and lifestyle impact body function. It focuses on planning scientific enquiries, controlling variables, taking precise measurements, and recording complex data. Emphasis is on presenting findings, drawing conclusions, and evaluating scientific evidence. Keeping healthy KS2 Y6 Science Lesson Resources Oak National Academy	This unit covers the classification of living things, including micro-organisms, plants, and animals, based on observable characteristics. It explores reasons for classification and focuses on planning scientific enquiries, recording data, presenting findings, and evaluating scientific evidence Why we group and classify living things KS2 Y6 Science Lesson Resources Oak National Academy	This unit explores how living things have changed over time, using fossils as evidence of past life. It covers how offspring vary from parents and how adaptation leads to evolution. Emphasis is on planning scientific enquiries, recording data, and evaluating scientific evidence. Evolution and inheritance KS2 Y6 Science Lesson Resources Oak National Academy	This unit explores how light travels in straight lines, explaining how we see objects and why shadows form the shape of the object casting them. It focuses on planning scientific enquiries, taking precise measurements, making predictions, and evaluating evidence to present findings. Light and how it travels KS2 Y6 Science Lesson Resources Oak National Academy
Key Substantive Knowledge: What will students learn?						
	<u>Autumn 1</u>	<u>Autumn 2</u>	<u>Spring 1</u>	<u>Spring 2</u>	<u>Summer 1</u>	<u>Summer 2</u>
Year 7 Science	<u>Forces</u>	<u>Solid, liquid, gas states and changes of state</u>	<u>Cells</u>	<u>Our solar system and beyond</u>	<u>Solutions</u>	<u>Ecosystems</u>
Key Knowledge: What will students learn?						

Year 7 Science	This unit focuses on quantifying and comparing energy transfers in different processes, such as motion changes, electrical circuits, and fuel burning. It examines forces as interactions between objects, using diagrams and measurements, including contact and non-contact forces. Forces KS3 Y7 Science Lesson Resources Oak National Academy	This unit covers the properties of solids, liquids, and gases using the particle model, including gas pressure. It explains changes of state in terms of the particle model while developing skills in using appropriate techniques, apparatus, and materials in lab work. Solid, liquid, gas states and changes of state KS3 Y7 Science Lesson Resources Oak National Academy	This unit explores cell structures, their functions, and differences between plant and animal cells. It includes adaptations of unicellular organisms and the organisation of multicellular organisms. Skills in using safe techniques, recording data, and evaluating methods in lab work are developed. Cells KS3 Y7 Science Lesson Resources Oak National Academy	This unit explores gravity as the force between masses, including weight calculation using gravitational field strength. It covers the relationship between Earth, the Moon, and the Sun, the concept of light years, and seasonal changes due to Earth's tilt. Our solar system and beyond KS3 Y7 Science Lesson Resources Oak National Academy	This unit explores the concepts of pure substances, mixtures, and diffusion in liquids and gases. It emphasises accuracy, precision, and the use of appropriate techniques during investigations. The focus is on making predictions and recording reliable observations. Solutions KS3 Y7 Science Lesson Resources Oak National Academy	This unit explores the interdependence of organisms in ecosystems, including food webs and insect-pollinated crops. It examines how organisms interact with their environment and the impact of toxic materials. It also highlights the importance of biodiversity and preserving genetic material. Ecosystems KS3 Y7 Science Lesson Resources Oak National Academy
	Key Knowledge: What will students learn?					
	<u>Autumn 1</u>	<u>Autumn 2</u>	<u>Spring 1</u>	<u>Spring 2</u>	<u>Summer 1</u>	<u>Summer 2</u>
Year 8 science	<u>Human digestive system</u>	<u>Atoms, elements and compounds</u>	<u>Biodiversity</u>	<u>Understanding chemical reactions</u>	<u>Moving by force</u>	<u>Species and classification (differences between species)</u>
Year 8 Science	This unit examines the human digestive system, including the roles of tissues, organs, enzymes, and beneficial bacteria. It also focuses on evaluating risks, interpreting data, identifying patterns, and suggesting improvements to enhance the reliability of investigations.	This unit explores the basic atomic model, the differences between atoms, elements, and compounds, and the varying physical and chemical properties of elements. It covers chemical symbols, formulae, SI units, and IUPAC nomenclature, emphasising their use in describing elements and compounds.	This unit examines environmental changes and their impact on species' survival and adaptation, potentially leading to extinction. It also develops skills for interpreting data and observations, evaluating errors, and using SI units and IUPAC chemical nomenclature in scientific contexts.	This unit covers the conservation of mass in changes of state and chemical reactions, including atom rearrangement. It also focuses on representing reactions with formulae and equations, exploring combustion, decomposition, and displacement, and distinguishing chemical from physical changes.	This unit explores speed, forces, and motion, including effects on objects. It covers deriving equations, calculations, and distance-time graphs. Learn to use force arrows, identify balanced and unbalanced forces, and understand their impact on movement.	This unit explores the differences between species and how to interpret observations and data to identify patterns and draw conclusions. It also focuses on making and recording observations using various methods, evaluating their reliability, and suggesting improvements for investigations.

	Human digestive system KS3 Y8 Science Lesson Resources Oak National Academy	Atoms, elements and compounds KS3 Y8 Science Lesson Resources Oak National Academy	Biodiversity KS3 Y8 Science Lesson Resources Oak National Academy	Understanding chemical reactions KS3 Y8 Science Lesson Resources Oak National Academy	Moving by force KS3 Y8 Science Lesson Resources Oak National Academy	Species and classification (differences between species) KS3 Y8 Science Lesson Resources Oak National Academy
--	---	--	---	---	--	---

National Curriculum links to topic

National Curriculum links to topic Aims: <u>Key stage 2</u> Pupils should be taught: <u>Key stage 3</u> Pupils should be taught:	With this curriculum, we aim to develop an interest in passion for science by exploring answers to big questions like “How do forces make things happen?” We combine substantive and disciplinary knowledge to make practical skills, mathematical proficiency, and scientific practices meaningful. The sequencing of our curriculum content underpins its design so that pupils build on and make links with existing knowledge. At its simplest, this means ensuring, for example, that pupils will learn about a living thing (organism) using common processes such as criteria for life before being introduced to cells and cell structures. Curriculum threads, which provide coherence by mapping vertical concepts across the curriculum, mirror the ‘big questions’ in science. For example, ‘How do we explain how substances behave?’ is first addressed in key stage 1 by identifying everyday materials and their properties. This foundational knowledge is built upon in key stage 2 with reversible and irreversible changes. By key stage 3, pupils delve into more complex topics like solutions and separation techniques, preparing them for advanced concepts in key stage 4 like rates of reaction and industrial chemistry. The sequencing of our curriculum content underpins its design so that pupils build on and make links with existing knowledge. At its simplest, this means ensuring, for example, that pupils will learn about a living thing (organism) using common processes such as criteria for life before being introduced to cells and cell structures. Curriculum threads, which provide coherence by mapping vertical concepts across the curriculum, mirror the ‘big questions’ in science. For example, ‘How do we explain how substances behave?’ is first addressed in key stage 1 by identifying everyday materials and their properties. This foundational knowledge is built upon in key stage 2 with reversible and irreversible changes. By key stage 3, pupils delve into more complex topics like solutions and separation techniques, preparing them for advanced concepts in key stage 4 like rates of reaction and industrial chemistry.