

Alignment to the National Curriculum



	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Autumn 1	BIOLOGY Plants Identifying and naming common plants and describing basic structures	BIOLOGY Plant growth Plants grow from seeds, and require water, light and a suitable temperature	CHEMISTRY Rocks Comparisons of types of rocks and how fossils are formed	BIOLOGY Classifying organisms Introduction to classifying animals and their environment	CHEMISTRY Separating mixtures Identifying and separating mixtures; difference between reversible and non-reversible changes	PHYSICS Electricity Investigating variations in series and parallel circuits, and how electricity is generated
Autumn 2	BIOLOGY / PHYSICS Seasonal changes Observing changes across four seasons and describing associated weather	BIOLOGY Needs of animals Animals need water, food and air to survive and to have offspring	PHYSICS Light Relationship between light and how we see; the formation of shadows	BIOLOGY Food & digestion The human digestive system and simple food chains	BIOLOGY, CHEMISTRY, PHYSICS Energy Introducing the concept of energy stores and energy transfers, and relating this to prior knowledge	BIOLOGY Evolution Fossils; introduction to the idea that adaptation may lead to evolution
Spring 1	CHEMISTRY Everyday materials Distinguishing objects from the material it's made from, and describing simple properties	CHEMISTRY Uses of everyday materials Comparisons of an object's material with its use; impact of bending, twisting on solid objects	BIOLOGY Organisms The role of muscles and skeletons; the importance of nutrients	CHEMISTRY Particle model and states of matter States of matter in relation to particle arrangement	BIOLOGY Life cycles Life cycles of a mammal, amphibian, insect and bird, and some reproduction processes	PHYSICS Light How light travels and is reflected, and how this allows us to see
Spring 2	Consolidation and review	BIOLOGY Living things & their habitats Basic introduction to habitats and micro-habitats, and simple food chains	BIOLOGY Plants The key features of flowering plants and what they need to survive	PHYSICS Sounds Relationship between strength of vibrations and volume of sound	BIOLOGY Human development Human development to old age	BIOLOGY Further classification Further classification of organisms based on characteristics
Summer 1	BIOLOGY Animals Identifying and naming fish, amphibians, reptiles, birds and mammals; carnivores, herbivores and omnivores	CHEMISTRY Solids, liquids and gases Understanding how the same substances can exist as solids, liquids and gases	PHYSICS Forces & motion Introducing pushes and pulls; opposing forces, and balanced forces	PHYSICS Electricity Simple series circuits	PHYSICS Forces Gravity, air and water resistance and friction; introduction to pulleys	BIOLOGY Functions of the human body Human circulatory system; transport of nutrients within the body
Summer 2	BIOLOGY Humans Human body parts and senses	Consolidation and review	PHYSICS Friction & magnetism Contact and non-contact forces, including friction and magnetism	CHEMISTRY Properties of materials Considering physical and chemical properties	PHYSICS Earth and space Movements of planets and the Moon, and relationship to day and night	CHEMISTRY Physical and chemical changes Identifying physical and chemical changes

Substantive knowledge

The units that are not highlighted in colour align directly to the topics in the [Programmes of Study](#) and cover – at a minimum – the statutory content set out.

The statutory content in some topics in the Programmes of Study is substantial. Where this is the case, more time has been dedicated to it and the content is split into two complementary units. This allows sufficient time for mastery.

Three additional units purposefully take pupils beyond the Programmes of Study:

- **Year 2: Solids, liquids and gases.** This introduces pupils to the idea that familiar substances (like water or chocolate) can exist as solids, liquids or gases. It will support understanding of states of matter and the particle model in Year 4, and preempts the misconception that substances only ever exist in one state.
- **Year 5: Energy.** This introduces pupils to energy stores and transfers at a very basic level, and has been designed to preempt misconceptions that need to be unpicked at secondary. It also allows pupils to review content from previous topics across biology, chemistry and physics (like food webs, electricity, and states of matter), and consider them through the lens of energy.
- **Year 6: Physical & chemical changes.** This unit gives pupils the opportunity to run more sophisticated practical investigations. It provides a good transition to Year 7.

There are opportunities for pupils to consolidate or review knowledge in KS1, to ensure that these early concepts are fully mastered before KS2. They also allow time for pupils to revisit ideas in different seasons (e.g. observing changes in spring from autumn).

Disciplinary knowledge (working scientifically)

As specified in the National Curriculum, disciplinary knowledge is not taught as a separate strand. Instead, very specific aspects of disciplinary knowledge (for example, recognising and managing risk; or measuring using a Newtonmeter) are explicitly taught as part of the units set out here. They are deliberately practiced in the context of relevant and appropriate experiments, and then reviewed at regularly intervals across the key stages.

