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, contact 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

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.

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.