



The Science Curriculum (part 1..Biology and Geology components) at Sheepscombe Primary School

The Sheepscombe School Community believes that: At Sheepscombe, we believe curiosity is key to scientific learning. We give special emphasis in inspiring our children to develop a keen sense of curiosity, so that they want to find out about how things work and investigate the underlying science with purpose and enjoyment. To do so, we offer a variety in our curriculum. In our science lessons, we offer children regular opportunities to investigate, experiment and make scientific discoveries in a fun, safe and practical way, using a range of equipment and materials. In our Forest School sessions, children are encouraged to be connected to their local environment through play and enriched learning, where they can discover and explore the wonders of the natural world. We plan regular science-based trips and experiences so to expose them to science in higher and further education as well as in the work place, to stimulate minds motivate - through our relationships with local science-orientated employers, secondary schools, universities and events such as the Cheltenham Science festival. “Curiosity is mother of inventions” Albert Einstein. “The important thing is not to stop questioning.”	National Curriculum – Aims The National Curriculum for science aims develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics. To develop understanding of the nature, processes and methods of science through different types of science enquiries that help them to answer scientific questions about the world around them. To ensure children are equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future.	Early Years Foundation Stage The Early Learning Goal of Understanding the World involves guiding children to make sense of their physical world and their community. The frequency and range of children’s personal experiences increases their knowledge and sense of the world around them. In addition, listening to a broad selection of stories, non-fiction and poems develops their understanding of our culturally, socially, technologically and ecologically diverse world. Our children get to explore the natural world around them, making observations and drawing pictures of animals and plants. They learn about some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class. Children are supported to understand some important processes and changes in the natural world, including the seasons and changing states of matter. Our Early Years children attend Forest School where they are encouraged to make connections to their local environment through play and enriched learning.
National Curriculum – Purpose of Study A high-quality science education provides the foundations for understanding the world through the specific disciplines of biology, chemistry and physics. Science has changed our lives and is vital to the world’s future prosperity, and all pupils should be taught essential aspects of the knowledge, methods, processes and uses of science. Through building up a body of key foundational knowledge and concepts, pupils should be encouraged to recognise the power of rational explanation and develop a sense of excitement and curiosity about natural phenomena. They should be encouraged to understand how science can be used to explain what is occurring, predict how things will behave, and analyse causes.		

In EYFS and KS1 all children will:
At Sheepscombe we will work scientifically and carry out investigations in Nature and Biology. In mixed age classes, children will complete many of the same science investigations but the knowledge base and skills development are pitched for the year group as laid out in the criteria below. This leaves scope for aspirational teaching matched to need, allowing each child to think deeply and to reach their full potential. We use the Developing Experts resources to teach Science.

In Key Stage 2 all children will: see a development in the progression of Working Scientifically skills whilst also seeing a broadening of children’s scientific knowledge in Nature and Biology. We use the Developing Experts resources to teach Science.

Merlin Class				Kestrel Class		Eagle Class	
Little Lambs	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Use all their senses in hands-on exploration of natural materials.	Begin to take part in simple experiments and investigations	Working scientifically Ask simple questions and recognise that they can be answered in different ways.	Working scientifically Ask simple questions using scientific language.	Working Scientifically Ask relevant questions and use different types of scientific enquiries to answer them	Working Scientifically Use scientific evidence to ask relevant questions, using different types of scientific enquiries to answer them.	Working Scientifically Plan different types of scientific enquiries and use test results to make predictions to set up further comparative fair test.	Working Scientifically Plan different types of scientific enquiries and record data and results of increasing complexity.
Explore collections of materials with similar and/or different properties.	Describe what they see, hear and feel whilst outside.	Perform simple tests using equipment.	Perform simple comparative tests. Identify, group and classify, noticing similarities and differences.	Make systematic and careful observations and, where appropriate, take accurate measurements.	Set up simple practical enquiries, including comparative and fair tests.	Take measurements, using a range of scientific equipment, with increasing accuracy and precision.	Describe and evaluate their own and other people’s scientific ideas related to topics in the national curriculum (including ideas that have changed over time), using evidence from a range of sources.
Talk about what they see,	Take part in focused observation of the natural world.	Identify and classify.	Gather and record data and observations to help in answering questions including from secondary sources of information.	Record and report findings using simple scientific language, drawings, charts and diagrams.	Make systematic, careful observations and take accurate measurements, using a range of equipment.	Report and present findings from enquiries, in oral and written forms such as displays and other presentations.	

Develop a wide vocabulary. Begin to develop early observational and investigational skills. Ask out loud: “I wonder if...?” Plant seeds and care for growing plants. Understand the key features of the life cycle of a plant and an animal. Begin to understand the need to respect and care for the natural environment and all living things.	Describe and comment on things they have seen whilst outside, including plants and animals. Name and describe some plants and animals Recognise familiar plants and animals whilst outside Recognise some environments that are different from the one in which they live. Begin to know about some contrasting environments within both their local and national region Name specific features of the world, both natural and made by people. Begin to communicate their understanding of their own environment and contrasting environments through conversation and in play. Understand the effect of changing seasons on the natural world around them. Provide opportunities for children to note and record the weather and learn about the seasons. Observe how animals behave differently as the seasons change. Look for children incorporating their understanding of the seasons and weather in their play	Gather and record data and observations to help in answering questions Animals, including Humans Identify, name, describe and compare a variety of common animals including fish, amphibians, reptiles, birds, mammals, carnivores, herbivores and omnivores. Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense. Plants Identify, name a variety of common wild and garden plants, including deciduous and evergreen trees. Identify and describe the basic structure of a variety of common flowering plants, including trees. Seasonal Changes Observe changes across the four seasons. Observe and describe weather associated with the seasons and how day length varies.	Animals, including Humans Understand that animals, including humans, have offspring which grow into adults Describe the basic needs of animals, including humans, for survival (water, food and air). Describe the importance of exercise for humans, eating the right amounts of different types of food, and hygiene. Living Things and their habitats Explore and compare the differences between things that are living, dead, and things that have never been alive. Identify that most living things live in habitats to which they are suited. Identify and name a variety of plants and animals in their habitats, including micro-habitats. Describe how animals obtain their food from plants and other animals, using the idea of a simple food chain Plants Observe and describe how seeds and bulbs grow into mature plants. Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.	Use results to draw simple conclusions and make predictions. Animals including Humans Identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat. Identify that humans and some other animals have skeletons and muscles for support, protection and movement. Plants Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers. Explore the requirements of plants for life and growth and how they vary from plant to plant. Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal. Rocks Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties. Describe in simple terms how fossils are formed when things that have lived are trapped within rock. Recognise that soils are made from rocks and organic matter	Record and report findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables. Use results to draw simple conclusions; make predictions for new values, suggest improvements and raise further questions (Year 4 focus). Animals including Humans Describe the simple functions of the basic parts of the digestive system in humans, including teeth. Construct and interpret a variety of food chains, identifying producers, predators and prey. Living Things and their Habitats Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment. Recognise that environments can change and that this can sometimes pose dangers and have an impact on living things.	Identify scientific evidence that has been used to support or refute ideas or arguments. Animals including Humans Describe the changes as humans develop to old age. Living Things and their Habitats Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird Describe the life process of reproduction in some plants and animals	Find things out using a wide range of secondary sources of information. Use appropriate scientific language and ideas from the national curriculum to explain, evaluate and communicate his/her methods and findings Animals including Humans Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood. Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function. Describe the ways in which nutrients and water are transported within animals, including humans. Evolution and Inheritance Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago. Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents. Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution Living Things and their Habitats Describe how living things are classified into broad groups according to common observable characteristics. Give reasons for classifying plants and animals based on specific characteristics.
--	--	---	---	--	--	--	---