



Grove and Westwood Science Curriculum Overview



Key stage 1	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Cycle A	My family history	Polar Regions	Victorian Childhood	Down under and beyond	Where in the world	Greatest inventions
Knowledge	<p>Animals including humans</p> <p>S10: identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.</p> <p>S19: notice that animals, including humans, have offspring which grow into adults (through lifecycle of a human)</p> <p>S20: :find out about and describe the basic needs of animals, including humans, for survival (water, food and air)</p> <p>S21: describe the importance for humans of exercise, eating the right amounts of</p>	<p>Living things and their habitats</p> <p>S14: :identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other</p> <p>S15: identify and name a variety of plants and animals in their habitats, including micro-habitats</p> <p>S16: describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food.</p>	<p>Uses of everyday materials</p> <p>S22: identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses</p> <p>S23: find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.</p> <p>(Comparing Victorian toys to modern & making own Victorian toy)</p>	<p>Animals including humans & seasonal changes</p> <p>S20: :find out about and describe the basic needs of animals, including humans, for survival (water, food and air) (creating space kits)</p> <p>S5: observe changes across the four seasons</p> <p>S6: observe and describe weather associated with the seasons and how day length varies.</p>	<p>Living things and their habitats</p> <p>S8: identify and name a variety of common animals that are carnivores, herbivores and omnivores</p> <p>S15: identify and name a variety of plants and animals in their habitats, including micro-habitats</p> <p>S16: describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food.</p>	<p>Animals including humans</p> <p>S7: identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals</p> <p>S9: describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets) identifying and classifying</p> <p>S4: Compare and group together a variety of everyday materials on the</p> <p>S10:identify, name, draw and label</p> <p>S19: notice that animals, including humans, have offspring which grow into adults (through lifecycles of a butterfly/frog)</p> <p>S14: :identify that most living things live in habitats</p>

	different types of food, and hygiene.					to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other
Working Scientifically	To identify and classify	To research and gather data to answer to simple questions	To identify and classify	To use observations and ideas to help answer questions.	To set up a simple investigation and show findings in simple charts. Fair and comparative testing	To explore pattern seek to find the answers to simple questions.
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Cycle B	What it is like where we live	What are seasons?	Feeling hot, hot, hot!	Mary Seacole & Florence Nightingale	Local heroes	What are the wonders of our world?
Knowledge objectives	<p>Plants</p> <p>S12: identify and describe the basic structure of a variety of common flowering plants, including trees.</p> <p>S17: observe and describe how seeds and bulbs grow into mature plants (growing fruits/veg)</p> <p>S18: find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.</p>	<p>Plants</p> <p>S11: identify and name a variety of common wild and garden plants, including deciduous and evergreen trees (plants in the local environment)</p> <p>S12: identify and describe the basic structure of a variety of common flowering plants, including trees.</p>	<p>Everyday materials</p> <p>S2: identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock</p> <p>S3: describe the simple physical properties of a variety of everyday materials</p>	<p>Everyday materials</p> <p>S1: distinguish between an object and the material from which it is made based on their simple physical properties.</p> <p>S4: compare and group together a variety of everyday materials (Looking at objects found after the fire)</p>	<p>Uses of everyday materials</p> <p>S22: identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses</p> <p>S23: find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching. (Castle building)</p>	<p>Living things and their habitats</p> <p>S14: identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other</p> <p>S15: identify and name a variety of plants and animals in their habitats, including micro-habitats</p> <p>S13: explore and compare the differences between things that are living, dead, and things that have never been alive</p>
Working Scientifically	To set up simple comparative investigations	To use observations and ideas to help answer questions.	To research to gather and record data to help in answering questions.	To identify and classify	To set up simple comparative investigations	To investigate to find answers to questions.

Fair and comparative testing

Lower key stage 2	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Cycle A	The Americas	Our local area	Rivers and Water cycle	Crime and Punishment	Earthquakes and Volcanoes	Romans
Knowledge	<p>States of matter S27: compare and group materials together, according to whether they are solids, liquids or gases</p> <p>S28: observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C)</p> <p>S29: identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.</p>	<p>Animals, including humans S24: describe the simple functions of the basic parts of the digestive system in humans</p> <p>S25: identify the different types of teeth in humans and their simple functions</p>	<p>Sound S30: identify how sounds are made, associating some of them with something vibrating</p> <p>S32: find patterns between the pitch of a sound and features of the object that produced it</p> <p>S31: recognise that vibrations from sounds travel through a medium to the ear</p> <p>S33: find patterns between the volume of a sound and the strength of the vibrations that produced it</p> <p>S34: recognise that sounds get fainter as the distance from the sound source increases.</p>	<p>Electricity S35: identify common appliances that run on electricity</p> <p>S36: construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers</p> <p>S37: identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery</p> <p>S38: recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuits</p> <p>S39: recognise some common conductors and insulators, and associate metals with being good conductors.</p>	<p>Forces and Magnets S15: compare how things move on different surfaces</p> <p>S16: notice that some forces need contact between two objects, but magnetic forces can act at a distance</p>	<p>Animals, including humans S9: 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</p> <p>S10: identify that humans and some other animals have skeletons and muscles for support, protection and movement</p>

Working Scientifically	To ask relevant questions and using different types of scientific enquiries to answer them. ie. observations and investigations	To identify differences, similarities or changes related to simple scientific ideas and processes	To set up comparative and fair investigation recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables	To set up comparative and fair investigation.	To research and report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions	To use systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers
Cycle B	Our world	Ancient Egyptians	Climate & Weather	The stone age	Coasts	Bronze Age & Iron Age
Knowledge	Plants S11: identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers S12: explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant	Plants S13: investigate the way in which water is transported within plants S14: explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.	Living Things and their Habitats S21: recognise that living things can be grouped in a variety of ways S22: explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment S23: recognise that environments can change and that this can sometimes pose dangers to living things. S26: construct and interpret a variety of food chains, identifying producers, predators and prey.	Rocks S6: compare and group together different kinds of rocks on the basis of their appearance and simple physical properties S7: describe in simple terms how fossils are formed when things that have lived are trapped within rock S8: recognise that soils are made from rocks and organic matter.	Light S1: recognise that they need light in order to see things and that dark is the absence of light S2: notice that light is reflected from surfaces S3: recognise that light from the sun can be dangerous and that there are ways to protect their eyes S4: recognise that shadows are formed when the light from a light source is blocked by a solid object S5: find patterns in the way that the size of shadows change.	Forces and Magnets S17: observe how magnets attract or repel each other and attract some materials and not others S18: compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials. S19: describe magnets as having two poles. S20: predict whether two magnets will attract or repel each other, depending on which poles are facing.
Working Scientifically	To spot patterns and gather, record and present data in a variety of ways to help in answering questions	To use observations to draw simple conclusions, make predictions for new values	To identify differences, similarities or changes related to simple scientific ideas and processes	To research and use straightforward scientific evidence to answer questions or to support their findings	.SW6: recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables SW7: reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions	To set up comparative and fair investigation recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables

Upper key stage 2	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Cycle A	Protecting the environment	War and its impact	Journeys	Alpine regions	Our world in the future	Ancient Greeks
Knowledge	<p>Animals including humans, living things and their habitats. To understand the ways in which nutrients and water are transported within animals, including humans.</p> <p>To understand how living things are classified into broad groups according to common observable characteristics, similarities and differences. (microorganisms, plants and animals)</p> <p>To know and give reasons for classifying plants and animals based on specific characteristics.</p>	<p>Forces To understand that unsupported objects fall towards the Earth because of the force of gravity. (that acts between the Earth and the falling object)</p> <p>To understand the effects of air resistance, water resistance and friction, that act between moving surfaces.</p>	<p>Properties and changes of materials To know everyday materials can be grouped on the basis of their properties.</p> <p>To know how different materials respond to magnets.</p> <p>To know reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials.</p>	<p>Discrete Properties and changes of materials To know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution To know that melting and dissolving are different processes.</p> <p>To understand solids, liquids and gases to decide how mixtures might be separated.</p> <p>To understand that dissolving, mixing and changes of state are reversible changes</p> <p>To understand and explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible.</p> <p>To know changes associated with burning and the action of acid on bicarbonate of soda.</p>	<p>Earth and Space To understand the movement of the Earth, and other planets, relative to the Sun in the solar system.</p> <p>To understand how the geocentric model of the solar system gave way to the heliocentric model by considering the work of scientists.</p> <p>To understand that a moon is a celestial body that orbits a planet (Earth has one moon; Jupiter has four large moons and numerous smaller ones).</p> <p>To understand the movement of the Moon relative to the Earth.</p> <p>To know why some people think that structures such as Stonehenge might have been used as astronomical clocks.</p> <p>To understand the Sun, Earth and Moon as approximately spherical bodies.</p> <p>To understand the idea of the Earth's rotation to explain day and night and</p>	<p>Discrete Forces To know that some mechanisms allow a smaller force to have a greater effect. (e.g. including levers, pulleys and gears)</p>

					<p>the apparent movement of the sun across the sky.</p> <p>To know that the Sun is a star at the centre of our solar system and that it has eight planet.</p> <p>Taught through PSHE:To know the changes experienced in puberty.</p>	
Working Scientifically	To make systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs	To set up investigations and take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate	To use test results from investigations to make predictions to set up further comparative and fair tests	To plan different types of scientific investigations to answer questions, including recognising and controlling variables where necessary	To identify scientific evidence through research that has been used to support or refute ideas or arguments.	To identify scientific evidence that has been used to support or refute ideas or arguments.
Cycle B	Africa	Saxons	Vikings	Changes in our environment	The Mayan Civilisation	South America: The Amazon
Knowledge	<p>Evolution and inheritance To know that living things have changed over time. (i.e.that fossils provide information about living things that inhabited the Earth millions of years ago)</p> <p>To know living things produce offspring of the same kind. (note: normally offspring vary</p>	<p>Living things & their cycles</p> <p>To recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents</p> <p>To describe the changes as humans develop to old age.</p> <p>To understand the differences in the life cycles</p>	<p>Light To know that light appears to travel in straight lines.</p> <p>To understand the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye.</p> <p>To understand that we see things because light travels from light sources to our eyes or from light sources to</p>	<p>Discrete Electricity To know the effect of the number and voltage of cells used in the circuit on the brightness of a lamp or the volume of a buzzer.</p> <p>To understand variations in how components function. (i.e.the brightness of bulbs, the loudness of buzzers and the on/off position of switches)</p>	<p>Animals including humans To know how to keep their bodies healthy and how their bodies might be damaged.</p> <p>To know how some drugs and other substances can be harmful to the human body.</p> <p>To understand how the circulatory system enables the body to function.</p>	<p>Working scientifically skills focus To plan different types of scientific investigations to answer questions, including recognising and controlling variables where necessary.</p> <p>To carry out investigations, taking measurements, using a range of scientific equipment, with increasing accuracy and precision,</p>

	<p>and are not identical to their parents)</p> <p>To understand how animals and plants are adapted to suit their environment in different ways.</p> <p>To know adaptation may lead to evolution.</p> <p>To recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago</p>	<p>of a mammal, amphibian, an insect and a bird</p> <p>To understand the life process of reproduction in some plants and animals.</p>	<p>objects and then to our eyes.</p> <p>To understand the idea that light travels in straight lines and use this to explain why shadows have the same shape as the objects that cast them.</p>	<p>To know and use symbols when representing a simple circuit in a diagram.</p>	<p>To know the main parts of the human circulatory system.</p> <p>To know the functions of the heart, blood vessels and blood .</p> <p>To know the impact of diet, exercise, drugs and lifestyle on the way their bodies function.</p> <p>To understand the changes as humans develop to old age.</p> <p>To know the stages of growth and development in humans and record this on a timeline.</p> <p><u>Taught through PSHE:To know the changes experienced in puberty.</u></p>	<p>taking repeat readings when appropriate.</p> <p>To record data and results collected during investigations of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs</p> <p>To use results from investigations to make predictions to set up further comparative and fair investigations.</p> <p>To use research to report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations.</p> <p>To identify scientific evidence that has been used to support or refute ideas or arguments.</p>
Working Scientifically	To research and identify, scientific evidence that has been used to support or refute ideas or arguments.	To use test results from investigations to make predictions to set up further comparative and fair investigations	To planning different types of scientific investigations to answer questions, including recognising and controlling variables where necessary	To plan different types of scientific investigations to answer questions, including recognising and controlling variables where necessary	To research,report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations	All above

Working Scientifically	Everyday materials	Seasonal changes	Animals, including humans	Plants
asking simple questions and recognising that they can be answered in different ways	S1: distinguish between an object and the material from which it is made basis of their simple physical properties.	S5:observe changes across the four seasons	S7:identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals	S11:identify and name a variety of common wild and garden plants, including deciduous and evergreen trees
observing closely, using simple equipment	S2:identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock	S6:observe and describe weather associated with the seasons and how day length varies.	S8:identify and name a variety of common animals that are carnivores, herbivores and omnivores	S12:identify and describe the basic structure of a variety of common flowering plants, including trees.
performing simple tests	S3:describe the simple physical properties of a variety of everyday materials		S9:describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets)	
identifying and classifying	S4:compare and group together a variety of everyday materials on the		S10:identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.	
using their observations and ideas to suggest answers to questions	Living things and their habitats	Plants	Animals, including humans	Uses of everyday materials
gathering and recording data to help in answering questions.	S13:explore and compare the differences between things that are living, dead, and things that have never been alive	S17:observe and describe how seeds and bulbs grow into mature plants	S19:notice that animals, including humans, have offspring which grow into adults	S22:identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses
	S14:identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other	S18:find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.	S20:find out about and describe the basic needs of animals, including humans, for survival (water, food and air)	S23:find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.
	S15:identify and name a variety of plants and animals in their habitats, including micro-habitats		S21:describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.	
	S16:describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food.			