



Science at Hurst Green

“Living, loving and learning with God”

National Curriculum 2014 – Statutory Coverage

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.

Aims

The national curriculum for science aims to ensure that all pupils:

- Develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics
- 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
- Are equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future.

Scientific Knowledge and Conceptual Understanding

The programmes of study describe a sequence of knowledge and concepts. While it is important that pupils make progress, it is also vitally important that they develop secure understanding of each key block of knowledge and concepts in order to progress to the next stage. Insecure, superficial understanding will not allow genuine progression: pupils may struggle at key points of transition (such as between primary and secondary school), build up serious misconceptions, and/or have significant difficulties in understanding higher-order content. Pupils should be able to describe associated processes and key characteristics in common language, but they should also be familiar with, and use, technical terminology accurately and precisely. They should build up an extended specialist vocabulary. They should also apply their mathematical knowledge to their understanding of science, including collecting, presenting and analysing data. The social and economic implications of science are important but, generally, they are taught most appropriately within the wider school curriculum: teachers will wish to use different contexts to maximise their pupils' engagement with and motivation to study science.

The Nature, Processes and Methods of Science

'Working scientifically' specifies the understanding of the nature, processes and methods of science for each year group. It should not be taught as a separate strand. The notes and guidance give examples of how 'working scientifically' might be embedded within the content of biology, chemistry and physics, focusing on the key features of scientific enquiry, so that pupils learn to use a variety of approaches to answer relevant scientific questions. These

types of scientific enquiry should include: observing over time; pattern seeking; identifying, classifying and grouping; comparative and fair testing (controlled investigations); and researching using secondary sources. Pupils should seek answers to questions through collecting, analysing and presenting data. 'Working scientifically' will be developed further at key stages 3 and 4, once pupils have built up sufficient understanding of science to engage meaningfully in more sophisticated discussion of experimental design and control.

Spoken Language

The national curriculum for science reflects the importance of spoken language in pupils' development across the whole curriculum – cognitively, socially and linguistically. The quality and variety of language that pupils hear and speak are key factors in developing their scientific vocabulary and articulating scientific concepts clearly and precisely. They must be assisted in making their thinking clear, both to themselves and others, and teachers should ensure that pupils build secure foundations by using discussion to probe and remedy their misconceptions.

Key Stage 1

The principal focus of science teaching in key stage 1 is to enable pupils to experience and observe phenomena, looking more closely at the natural and humanly-constructed world around them. They should be encouraged to be curious and ask questions about what they notice. They should be helped to develop their understanding of scientific ideas by using different types of scientific enquiry to answer their own questions, including observing changes over a period of time, noticing patterns, grouping and classifying things, carrying out simple comparative tests, and finding things out using secondary sources of information. They should begin to use simple scientific language to talk about what they have found out and communicate their ideas to a range of audiences in a variety of ways. Most of the learning about science should be done through the use of first-hand practical experiences, but there should also be some use of appropriate secondary sources, such as books, photographs and videos.

'Working scientifically' is described separately in the programme of study, but must always be taught through and clearly related to the teaching of substantive science content in the programme of study. Throughout the notes and guidance, examples show how scientific methods and skills might be linked to specific elements of the content.

Pupils should read and spell scientific vocabulary at a level consistent with their increasing word reading and spelling knowledge at key stage 1.

Lower Key Stage 2 – Years 3 and 4

The principal focus of science teaching in lower key stage 2 is to enable pupils to broaden their scientific view of the world around them. They should do this through exploring, talking about, testing and developing ideas about everyday phenomena and the relationships between living things and familiar environments, and by beginning to develop their ideas about functions, relationships and interactions. They should ask their own questions about what they observe and make some decisions about which types of scientific enquiry are likely to be the best ways of answering them, including observing

changes over time, noticing patterns, grouping and classifying things, carrying out simple comparative and fair tests and finding things out using secondary sources of information. They should draw simple conclusions and use some scientific language, first, to talk about and, later, to write about what they have found out.

‘Working scientifically’ is described separately at the beginning of the programme of study, but must always be taught through and clearly related to substantive science content in the programme of study. Throughout the notes and guidance, examples show how scientific methods and skills might be linked to specific elements of the content.

Pupils should read and spell scientific vocabulary correctly and with confidence, using their growing word reading and spelling knowledge.

Upper Key Stage 2 – Years 5 and 6

The principal focus of science teaching in upper key stage 2 is to enable pupils to develop a deeper understanding of a wide range of scientific ideas. They should do this through exploring and talking about their ideas; asking their own questions about scientific phenomena; and analysing functions, relationships and interactions more systematically. At upper key stage 2, they should encounter more abstract ideas and begin to recognise how these ideas help them to understand and predict how the world operates. They should also begin to recognise that scientific ideas change and develop over time. They should select the most appropriate ways to answer science questions using different types of scientific enquiry, including observing changes over different periods of time, noticing patterns, grouping and classifying things, carrying out comparative and fair tests and finding things out using a wide range of secondary sources of information. Pupils should draw conclusions based on their data and observations, use evidence to justify their ideas, and use their scientific knowledge and understanding to explain their findings.

‘Working and thinking scientifically’ is described separately at the beginning of the programme of study, but must always be taught through and clearly related to substantive science content in the programme of study. Throughout the notes and guidance, examples show how scientific methods and skills might be linked to specific elements of the content.

Pupils should read, spell and pronounce scientific vocabulary correctly.

Progression in Knowledge

National Curriculum statements in red are from other linked topics

EYFS – Understanding the World

Birth to Three

Materials, Sound and Forces	Living things and their habitats/plants	Animals including Humans	Seasonal Change
<ul style="list-style-type: none"> Repeat actions that have an effect. Explore materials with different properties. Explore natural materials, indoors and outside. 	<ul style="list-style-type: none"> Explore and respond to different natural phenomena in their setting and on trips. 	<ul style="list-style-type: none"> Notice differences between people. 	<ul style="list-style-type: none"> Explore and respond to different natural phenomena in their setting and on trips.

3 and 4 Year olds

Materials, Sound and Forces	Living things and their habitats/plants	Animals including Humans	Seasonal Change
<ul style="list-style-type: none"> Use all their senses in hands on exploration of natural materials. Explore collections of materials with similar and/or different properties. Talk about what they see, using a wide vocabulary. Explore how things work. 	<ul style="list-style-type: none"> Plant seeds and care for growing plants. Begin to understand the need to respect and care for the natural environment and all living things. 	<ul style="list-style-type: none"> Understand the key features of the life cycle of a plant and an animal. Continue developing positive attitudes about the differences between people. 	<ul style="list-style-type: none"> Understand the key features of the life cycle of a plant and an animal.

<ul style="list-style-type: none"> • Explore and talk about different forces they can feel. • Talk about the differences between materials and changes they notice. 			
Reception			
Materials, Sound and Forces	Living things and their habitats/plants	Animals including Humans	Seasonal Change
<ul style="list-style-type: none"> • Explore the natural world around them. 	<ul style="list-style-type: none"> • Explore the natural world around them. • Describe what they see, hear and feel whilst outside. 	<ul style="list-style-type: none"> • Explore the natural world around them. 	<ul style="list-style-type: none"> • Describe what they see, hear and feel whilst outside. • Understand the effect of changing seasons on the natural world around them.
Year 1			
Living Things and Their Habitats	Plants		Animals, Including Humans
<ul style="list-style-type: none"> • Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. (Y1 - Plants) • Identify and describe the basic structure of a variety of common flowering plants, including trees. (Y1 - Plants) • Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. (Y1 - Animals including humans) 	<ul style="list-style-type: none"> • Identify and 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. 		<ul style="list-style-type: none"> • Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. • Identify and name a variety of common animals that are carnivores, herbivores and omnivores. • Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets).

<ul style="list-style-type: none"> • Identify and name a variety of common animals that are carnivores, herbivores and omnivores. (Y1 - Animals including humans) • Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets). (Y1 – Animals, including humans) • Observe changes across the four seasons. (Y1 - Seasonal change) 		<ul style="list-style-type: none"> • Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.
Year 1 Greater Depth		
	<ul style="list-style-type: none"> • Can they begin to describe what each part of a plant does? (e.g. roots, stem, leaves, petals, pollen) on a range of plants. 	<ul style="list-style-type: none"> • Can they begin to classify animals according to a number of given criteria? • Can they point out differences between living and non-living things? • Can they name some parts of the human body that cannot be seen? • Can they say why certain animals have certain characteristics? • Can they name a range of wild animals?
Seasonal Changes	Materials and Rocks	Light
<ul style="list-style-type: none"> • Observe changes across the four seasons. • Observe and describe weather associated with the seasons and how day length varies 	<ul style="list-style-type: none"> • Distinguish between an object and the material from which it is made. • Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock. • Describe the simple physical properties of a variety of everyday materials. • Compare and group together a variety of everyday materials on the basis of their simple physical properties 	<ul style="list-style-type: none"> • Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense. (Y1 - Animals, including humans) • Describe the simple physical properties of a variety of everyday materials. (Y1 - Materials)

Year 1 Greater Depth		
<ul style="list-style-type: none"> • Can they observe features in the environment and explain that these are related to a specific season? • Can they observe and talk about changes in the weather? • Can they talk about weather variation in different parts of the world? 	<ul style="list-style-type: none"> • Can they describe things that are similar and different between materials? • Can they explain what happens to certain materials when they are heated, e.g. bread, ice, chocolate? • Can they explain what happens to certain materials when they are cooled, e.g. jelly, heated chocolate? 	<ul style="list-style-type: none"> •
Sound	Earth and Space	
<ul style="list-style-type: none"> • Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense. (Y1 - Animals, including humans) 	<ul style="list-style-type: none"> • Observe changes across the four seasons. (Y1 - Seasonal changes) • Observe and describe weather associated with the seasons and how day length varies. (Y1 - Seasonal changes) 	
Year 2		
Plants	Living things and their habitats	Animals in including humans
<ul style="list-style-type: none"> • 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. • Identify and name a variety of plants and animals in their habitats, including microhabitats. (Y2 - Living things and their habitats) 	<ul style="list-style-type: none"> • 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 and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other. • Identify and name a variety of plants and animals in their habitats, including microhabitats. Describe how animals obtain their food from plants and other animals, using the idea of a simple food 	<ul style="list-style-type: none"> • Notice that animals, including humans, have offspring which grow into adults. • Find out about and describe the basic needs of animals, including humans, for survival (water, food and air). • Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene. • 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. (Y2 - Living things and their habitats)

	<p>chain, and identify and name different sources of food.</p> <ul style="list-style-type: none"> • Notice that animals, including humans, have offspring which grow into adults. (Y2 - Animals including humans) 	
Year 2 Greater Depth		
<ul style="list-style-type: none"> • Can they describe what plants need to survive and link it to where they are found? • Can they explain that plants grow and reproduce in different ways? 	<ul style="list-style-type: none"> • Can they name some characteristics of an animal that help it to live in a particular habitat? 	<ul style="list-style-type: none"> • Can they explain that animals reproduce in different ways?
Evolution and inheritance	Materials	Rocks
<ul style="list-style-type: none"> • 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. (Y2 - Living things and their habitats) • Notice that animals, including humans, have offspring which grow into adults. (Y2 - Animals, including humans) 	<ul style="list-style-type: none"> • Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses. • Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching. 	<ul style="list-style-type: none"> • Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses. (Y2 - Uses of everyday materials)
Year 2 Greater Depth		
	<ul style="list-style-type: none"> • Can they describe the properties of different materials using words like, transparent or opaque, flexible, etc.? • Can they sort materials into groups and say why they have sorted them in that way? • Can they say which materials are natural and which are manmade? 	

	<ul style="list-style-type: none"> • Can they explain how materials are changed by heating and cooling? • Can they explain how materials are changed by bending, twisting and stretching? • Can they tell which materials cannot be changed back after being heated, cooled, bent, stretched or twisted? 	
Forces		
<ul style="list-style-type: none"> • Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching. (Y2 - Uses of everyday materials) 		
Year 3		
Plants	Living things and their habitats	Animals Including Humans
<ul style="list-style-type: none"> • 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 (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant. • Investigate the way in which water is transported within plants. • Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal. 	<ul style="list-style-type: none"> • Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal. (Y3 - Plants) 	<ul style="list-style-type: none"> • 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.

Year 3 Greater Depth		
<ul style="list-style-type: none"> Can they classify a range of common plants according to many criteria (environment found, size, climate required, etc.)? 		<ul style="list-style-type: none"> Can they explain how the muscular and skeletal systems work together to create movement? Can they classify living things and non-living things by a number of characteristics that they have thought of? Can they explain how people, weather and the environment can affect living things? Can they explain how certain living things depend on one another to survive?
Evolution and Inheritance	Seasonal Change	Materials
<ul style="list-style-type: none"> Describe in simple terms how fossils are formed when things that have lived are trapped within rock. (Y3 - Rocks) Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal. (Y3 - Plants) 	<ul style="list-style-type: none"> Recognise that light from the sun can be dangerous and that there are ways to protect their eyes. (Y3 - Light) 	<ul style="list-style-type: none"> Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties. (Y3 - Rocks) Describe in simple terms how fossils are formed when things that have lived are trapped within rock. (Y3 - Rocks) 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. (Y3 - Forces and magnets)
Rocks	Light	Forces
<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> Recognise that they need light in order to see things and that dark is the absence of light. Notice that light is reflected from surfaces. 	<ul style="list-style-type: none"> Compare how things move on different surfaces. Notice that some forces need contact between two objects, but magnetic forces can act at a distance. Observe how magnets attract or repel each other and attract some materials and not others.

<ul style="list-style-type: none"> Recognise that soils are made from rocks and organic matter. 	<ul style="list-style-type: none"> Recognise that light from the sun can be dangerous and that there are ways to protect their eyes. Recognise that shadows are formed when the light from a light source is blocked by an opaque object. Find patterns in the way that the size of shadows change. 	<ul style="list-style-type: none"> 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. Describe magnets as having two poles. Predict whether two magnets will attract or repel each other, depending on which poles are facing.
Year 3 Greater Depth		
<ul style="list-style-type: none"> Can they classify igneous and sedimentary rocks? Can they begin to relate the properties of rocks with their uses? 	<ul style="list-style-type: none"> Can they explain why lights need to be bright or dimmer according to need? Can they say what happens to the electricity when more batteries are added? Can they explain why their shadow changes when the light source is moved closer or further from the object? 	<ul style="list-style-type: none"> Can they investigate the strengths of different magnets and find fair ways to compare them?
Year 4		
Plants	Living things and their habitats	Animals including humans
<ul style="list-style-type: none"> Recognise that living things can be grouped in a variety of ways. (Y4 - 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. (Y4 - Living things and their habitats) Recognise that environments can change and that this can sometimes pose dangers to living things. (Y4 - Living things and their habitats) 	<ul style="list-style-type: none"> Recognise that living things can be grouped in a variety of ways. 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 to living things. Construct and interpret a variety of food chains, identifying producers, predators and prey. (Y4 - Animals, including humans) 	<ul style="list-style-type: none"> Describe the simple functions of the basic parts of the digestive system in humans. Identify the different types of teeth in humans and their simple functions. Construct and interpret a variety of food chains, identifying producers, predators and prey.

Greater Depth		
	<ul style="list-style-type: none"> • Can they give reasons for how they have classified animals and plants, using their characteristics and how they are suited to their environment? • Can they explore the work of pioneers in classification? (e.g. Carl Linnaeus) • Can they name and group a variety of living things based on feeding patterns? (producer, consumer, predator, prey, herbivore, carnivore, omnivore). 	<ul style="list-style-type: none"> • Can they classify living things and non-living things by a number of characteristics that they have thought of? • Can they explain how people, weather and the environment can affect living things? • Can they explain how certain living things depend on one another to survive?
Evolution and Inheritance	Materials	Sound
<ul style="list-style-type: none"> • Recognise that environments can change and that this can sometimes pose dangers to living things. (Y4 - Living things and their habitats) 	<ul style="list-style-type: none"> • Compare and group materials together, according to whether they are solids, liquids or gases. • 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). • Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature. Recognise some common conductors and insulators, and associate metals with being good conductors. (Y4 - Electricity) 	<ul style="list-style-type: none"> • Identify how sounds are made, associating some of them with something vibrating. • Recognise that vibrations from sounds travel through a medium to the ear. • Find patterns between the pitch of a sound and features of the object that produced it. • Find patterns between the volume of a sound and the strength of the vibrations that produced it. • Recognise that sounds get fainter as the distance from the sound source increases.
Greater Depth		
	<ul style="list-style-type: none"> • Can they group and classify a variety of materials according to the impact of temperature on them? 	<ul style="list-style-type: none"> • Can they explain why sound gets fainter or louder according to the distance? • Can they explain how pitch and volume can be changed in a variety of ways?

	<ul style="list-style-type: none"> • Can they explain what happens over time to materials such as puddles on the playground or washing hanging on a line? 	<ul style="list-style-type: none"> • Can they work out which materials give the best insulation for sound?
Electricity		
<ul style="list-style-type: none"> • Identify common appliances that run on electricity. • Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers. • 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. Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit. • Recognise some common conductors and insulators, and associate metals with being good conductors. 		
Year 4 Greater Depth		
<ul style="list-style-type: none"> • Can they explain how a bulb might get lighter? • Can they recognise if all metals are conductors of electricity? • Can they work out which metals can be used to connect across a gap in a circuit? • Can they explain why cautions are necessary for working safely with electricity? 		

Year 5

Plants	Living Things and Their Habitats	Animals Including Humans
<ul style="list-style-type: none"> Describe the life process of reproduction in some plants and animals. (Y5 - Living things and their habitats) 	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> Describe the changes as humans develop to old age. Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird. (Y5 - Living things and their habitats) Describe the life process of reproduction in some plants and animals. (Y5 - Living things and their habitats)
Greater Depth		
	<ul style="list-style-type: none"> Can they observe their local environment and draw conclusions about life-cycles, e.g. plants in the vegetable garden or flower border? Can they compare the life cycles of plants and animals in their local environment with the life cycles of those around the world, e.g. rainforests? 	<ul style="list-style-type: none"> Can they create a timeline to indicate stages of growth in certain animals, such as frogs and butterflies? Can they describe the changes experienced in puberty? • Can they draw a timeline to indicate stages in the growth and development of humans?
Evolution and Inheritance	Seasonal Changes	Materials
<ul style="list-style-type: none"> Describe the life process of reproduction in some plants and animals. (Living things and their habitats - Y5) 	<ul style="list-style-type: none"> Use the idea of the Earth's rotation to explain day and night and the apparent movement of the Sun across the sky. (Y5 - Earth and space) 	<ul style="list-style-type: none"> Compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets. Know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution. Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating.

		<ul style="list-style-type: none"> • Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic. • Demonstrate that dissolving, mixing and changes of state are reversible changes. • Explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda.
Greater Depth		
		<ul style="list-style-type: none"> • Can they describe methods for separating mixtures? (filtration, distillation) • Can they work out which materials are most effective for keeping us warm or for keeping something cold? • Can they use their knowledge of materials to suggest ways to classify? (solids, liquids, gases) • Can they explore changes that are difficult to reverse, e.g. burning, rusting and reactions such as vinegar with bicarbonate of soda? • Can they explore the work of chemists who created new materials, e.g. Spencer Silver (glue on sticky notes) or Ruth Benerito (wrinkle free cotton)?
Light	Forces	Earth and Space
<ul style="list-style-type: none"> • Compare and group together everyday materials on the basis of 	<ul style="list-style-type: none"> • Explain that unsupported objects fall towards the Earth because of the force of 	<ul style="list-style-type: none"> • Describe the movement of the Earth, and other planets, relative to the Sun in the

<p>their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets. (Y5 - Properties and changes of materials)</p>	<p>gravity acting between the Earth and the falling object.</p> <ul style="list-style-type: none"> Identify the effects of air resistance, water resistance and friction, that act between moving surfaces. Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect. 	<p>solar system. Describe the movement of the Moon relative to the Earth.</p> <ul style="list-style-type: none"> Describe the Sun, Earth and Moon as approximately spherical bodies. Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky
<p>Greater Depth</p>		
	<ul style="list-style-type: none"> Can they describe and explain how motion is affected by forces? (including gravitational attractions, magnetic attraction and friction) Can they design very effective parachutes? Can they work out how water can cause resistance to floating objects? Can they explore how scientists, such as Galileo Galilei and Isaac Newton helped to develop the theory of gravitation? 	<ul style="list-style-type: none"> Can they compare the time of day at different places on the earth? Can they create shadow clocks? Can they begin to understand how older civilizations used the sun to create astronomical clocks, e.g. Stonehenge? Can they explore the work of some scientists? (Ptolemy, Alhazen, Copernicus)
<p>Year 6</p>		
<p>Plants</p>	<p>Living things and their habitats</p>	<p>Animals Including Humans</p>
<ul style="list-style-type: none"> Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals. (Y6 - Living things and their habitats) Give reasons for classifying plants and animals based on specific 	<ul style="list-style-type: none"> Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including microorganisms, plants and animals. Give reasons for classifying plants and animals based on specific characteristics. Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to 	<ul style="list-style-type: none"> 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.

<p>characteristics. (Y6 - Living things and their habitats)</p>	<p>their parents. (Y6 - Evolution and inheritance)</p> <ul style="list-style-type: none"> Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution. (Y6 - Evolution and inheritance) 	<ul style="list-style-type: none"> Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals. (Y6 - Living things and their habitats) Give reasons for classifying plants and animals based on specific characteristics. (Y6 - Living things and their habitats) KS3
<p>Year 6 Greater Depth</p>		
<ul style="list-style-type: none"> Can they explain why classification is important? Can they readily group animals into reptiles, fish, amphibians, birds and mammals? Can they sub divide their original groupings and explain their divisions, such as vertebrates and invertebrates? Can they find out about the significance of the work of scientists such as Carl Linnaeus, a pioneer of classification? 	<ul style="list-style-type: none"> Can they explain why classification is important? Can they readily group animals into reptiles, fish, amphibians, birds and mammals? Can they sub divide their original groupings and explain their divisions, such as vertebrates and invertebrates? Can they find out about the significance of the work of scientists such as Carl Linnaeus, a pioneer of classification? 	<ul style="list-style-type: none"> Can they compare the organ systems of humans to other animals? Can they make a diagram of the human body and explain how different parts work and depend on one another? Can they name and locate the major organs in the human body?
<p>Evolution and Inheritance</p>	<p>Rocks</p>	<p>Light</p>
<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago. (Y6 - Evolution and inheritance) 	<ul style="list-style-type: none"> Recognise that light appears to travel in straight lines. Use 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>normally offspring vary and are not identical to their parents.</p> <ul style="list-style-type: none"> Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution. 		<ul style="list-style-type: none"> Explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes. Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.
Greater Depth		
<ul style="list-style-type: none"> Can they research and discuss the work of famous scientists, such as Charles Darwin, Mary Anning or Alfred Wallace? Can they explain how some living things adapt to survive in extreme conditions? 		<ul style="list-style-type: none"> Can they explain how different colours of light can be created? Can they use and explain how simple optical instruments work? (periscope, telescope, binoculars, mirror, magnifying glass, Newton's first reflecting telescope) Can they explore a range of phenomena, including rainbows, colours on soap bubbles, objects looking bent in water and coloured filters?
Electricity		
<ul style="list-style-type: none"> Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit. Compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches. Use recognised symbols when representing a simple circuit in a diagram. 		
Year 6 Greater Depth		

<ul style="list-style-type: none">• Can they explain the advantages of a parallel circuit?• Can they explain how to make changes in a circuit?• Can they explain the impact of changes in a circuit?		
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Progression in Working Scientifically Skills

The National Curriculum statements in italics in these tables indicate that they feature more than once

EYFS

Playing and Exploring	Active Learning	Creating and Thinking Critically
<p>Children investigate and experience things, and ‘have a go’</p> <ul style="list-style-type: none"> Realise that their actions have an effect on the world, so they want to keep repeating them. Make choices and explore different resources and materials. Plan and think ahead about how they will explore or play with objects. Plan and think ahead about how they will explore or play with objects. Make independent choices. Respond to new experiences that you bring to their attention. 	<p>Children concentrate and keep on trying if they encounter difficulties, and enjoy achievements</p> <ul style="list-style-type: none"> Begin to predict using past knowledge. Use a range of strategies to reach a goal they have set themselves. Begin to correct their mistakes themselves. Keep on trying when things are difficult. 	<p>Children have and develop their own ideas, make links between ideas, and develop strategies for doing things</p> <ul style="list-style-type: none"> Review their progress as they try to achieve a goal. Check how well they are doing. Solve real problems. Know more, so feel confident about coming up with their own ideas – make more links between those ideas.

Years 1 and 2

Asking questions and recognising that they can be answered in different ways	Making observations and taking measurements	Engaging in practical enquiry to answer questions
<p>Asking simple questions and recognising that they can be answered in different ways</p> <ul style="list-style-type: none"> While exploring the world, the children develop their ability to ask questions (such as what something is, how things are similar and different, the ways things 	<p>Observing closely, using simple equipment</p> <ul style="list-style-type: none"> Children explore the world around them. They make careful observations to support identification, comparison and noticing change. They use appropriate senses, aided by equipment such as 	<p>Performing simple tests</p> <ul style="list-style-type: none"> The children use practical resources provided to gather evidence to answer questions generated by themselves or the teacher. They carry out: tests to classify; comparative tests; pattern

<p>work, which alternative is better, how things change and how they happen). Where appropriate, they answer these questions.</p> <ul style="list-style-type: none"> • The children answer questions developed with the teacher often through a scenario. • The children are involved in planning how to use resources provided to answer the questions using different types of enquiry, helping them to recognise that there are different ways in which questions can be answered. 	<p>magnifying glasses or digital microscopes, to make their observations.</p> <ul style="list-style-type: none"> • They begin to take measurements, initially by comparisons, then using non-standard units. 	<p>seeking enquiries; and make observations over time.</p> <p>Identifying and classifying</p> <ul style="list-style-type: none"> • Children use their observations and testing to compare objects, materials and living things. They sort and group these things, identifying their own criteria for sorting. • They use simple secondary sources (such as identification sheets) to name living things. They describe the characteristics they used to identify a living thing.
Year 1 Greater Depth		
<ul style="list-style-type: none"> • Can they give reasons for their answers? 	<ul style="list-style-type: none"> • Can they find out by watching, listening, tasting, smelling and touching? 	<ul style="list-style-type: none"> • Can they discuss similarities and differences? • Can they explain what they have found out using scientific vocabulary?
Year 2 Greater Depth		
<ul style="list-style-type: none"> • Can they begin to independently consider controlling variables to create a fair test? 	<ul style="list-style-type: none"> • Can they suggest ways of finding out through listening, hearing, smelling, touching and tasting? 	<ul style="list-style-type: none"> • Can they say whether things happened as they expected and if not why not? • Can they suggest more than one way of grouping animals and plants and explain their reasons?
Recording and presenting evidence	Answering questions and concluding	
<p>Gathering and recording data to help in answering questions</p>	<p><i>Using their observations and ideas to suggest answers to questions</i></p> <ul style="list-style-type: none"> • Children use their experiences of the world around them to suggest 	

<ul style="list-style-type: none"> • The children record their observations e.g. using photographs, videos, drawings, labelled diagrams or in writing. • They record their measurements e.g. using prepared tables, pictograms, tally charts and block graphs. • They classify using simple prepared tables and sorting rings. 	<p>appropriate answers to questions. They are supported to relate these to their evidence e.g. observations they have made, measurements they have taken or information they have gained from secondary sources.</p> <p>Using their observations and ideas to suggest answers to questions</p> <ul style="list-style-type: none"> • The children recognise 'biggest and smallest', 'best and worst' etc. from their data. 	
Year 1 Greater Depth		
<ul style="list-style-type: none"> • Can they make accurate measurements using non-standard measurements i.e. unifix? 	<ul style="list-style-type: none"> • Can they give reasons for their answers? 	
Year 2 Greater Depth		
<ul style="list-style-type: none"> • Can they use information from books and online information to find things out? 	<ul style="list-style-type: none"> • Can they say whether things happened as they expected and if not why not? • Can they suggest more than one way of grouping animals and plants and explain their reasons? 	
Years 3 and 4		
Asking questions and recognising that they can be answered in different ways	Making observations and taking measurements	Engaging in practical enquiry to answer questions
<p>Asking relevant questions and using different types of scientific enquiries to answer them</p> <ul style="list-style-type: none"> • The children consider their prior knowledge when asking questions. They independently use a range of question 	<p>Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers</p>	<p>Setting up simple practical enquiries, comparative and fair tests</p> <ul style="list-style-type: none"> • The children select from a range of practical resources to gather evidence to

<p>stems. Where appropriate, they answer these questions.</p> <ul style="list-style-type: none"> The children answer questions posed by the teacher. Given a range of resources, the children decide for themselves how to gather evidence to answer the question. They recognise when secondary sources can be used to answer questions that cannot be answered through practical work. They identify the type of enquiry that they have chosen to answer their question. 	<ul style="list-style-type: none"> The children make systematic and careful observations. They use a range of equipment for measuring length, time, temperature and capacity. They use standard units for their measurements. 	<p>answer questions generated by themselves or the teacher.</p> <ul style="list-style-type: none"> They follow their plan to carry out: observations and tests to classify; comparative and simple fair tests; observations over time; and pattern seeking. <p>Explanatory note A comparative test is performed by changing a variable that is qualitative e.g. the type of material, shape of the parachute. This leads to a ranked outcome. A fair test is performed by changing a variable that is quantitative e.g. the thickness of the material or the area of the canopy. This leads to establishing a causative relationship.</p>
Year 3 Greater Depth		
Year 4 Greater Depth		
<ul style="list-style-type: none"> Can they use a range of variables to investigate? 		<ul style="list-style-type: none"> Can they plan and carry out an investigation by controlling variables fairly and accurately? Can they use test results to make further predictions and set up further comparative tests?
Recording and presenting evidence	Answering questions and concluding	Evaluating and raising further questions and predictions
Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions	Using straightforward scientific evidence to answer questions or to support their findings.	<i>Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions</i>

<p>Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables</p> <ul style="list-style-type: none"> The children sometimes decide how to record and present evidence. They record their observation e.g. using photographs, videos, pictures, labelled diagrams or writing. They record their measurements e.g. using tables, tally charts and bar charts (given templates, if required, to which they can add headings). They record classifications e.g. using tables, Venn diagrams, Carroll diagrams. Children are supported to present the same data in different ways in order to help with answering the question. 	<ul style="list-style-type: none"> Children answer their own and others' questions based on observations they have made, measurements they have taken or information they have gained from secondary sources. The answers are consistent with the evidence. <p>Identifying differences, similarities or changes related to simple scientific ideas and processes</p> <ul style="list-style-type: none"> Children interpret their data to generate simple comparative statements based on their evidence. They begin to identify naturally occurring patterns and causal relationships. <p><i>Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions</i></p> <ul style="list-style-type: none"> They draw conclusions based on their evidence and current subject knowledge. 	<ul style="list-style-type: none"> They identify ways in which they adapted their method as they progressed or how they would do it differently if they repeated the enquiry. <p><i>Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions</i></p> <ul style="list-style-type: none"> Children use their evidence to suggest values for different items tested using the same method e.g. the distance travelled by a car on an additional surface. Following a scientific experience, the children ask further questions which can be answered by extending the same enquiry.
Year 3 Greater Depth		
<ul style="list-style-type: none"> Can they record and present what they have found using scientific language, drawings, labelled diagrams, bar charts and tables? 	<ul style="list-style-type: none"> Can they explain their findings in different ways (display, presentation, and writing)? 	<ul style="list-style-type: none"> Can they use their findings to draw a simple conclusion? Can they suggest improvements and predictions for further tests?
Year 4 Greater Depth		
<ul style="list-style-type: none"> Can they record more complex data and results using scientific diagrams, classification keys, tables, bar charts, line graphs and models? 	<ul style="list-style-type: none"> Can they use a graph or diagram to answer scientific questions? 	<ul style="list-style-type: none">
Communicating their findings		

<p>Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions</p> <ul style="list-style-type: none"> • They communicate their findings to an audience both orally and in writing, using appropriate scientific vocabulary. 		
Year 3 Greater Depth		
<ul style="list-style-type: none"> • Can they suggest how to improve their work if they did it again? 		
Year 4 Greater Depth		
<ul style="list-style-type: none"> • Can they report findings from investigations through written explanations and conclusions? 		
Years 5 and 6		
Asking questions and recognising that they can be answered in different ways	Making observations and taking measurements	Engaging in practical enquiry to answer questions
<p><i>Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary</i></p> <ul style="list-style-type: none"> • Children independently ask scientific questions. This may be stimulated by a scientific experience or involve asking further questions based on their developed understanding following an enquiry. • Given a wide range of resources the children decide for themselves how to gather evidence to answer a scientific question. They choose a type of enquiry to carry out and justify their choice. They 	<p>Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate</p> <ul style="list-style-type: none"> • The children select measuring equipment to give the most precise results e.g. ruler, tape measure or trundle wheel, force meter with a suitable scale. • During an enquiry, they make decisions e.g. whether they need to: take repeat readings (fair testing); increase the sample size (pattern seeking); adjust the observation period and frequency (observing over time); or check further 	<p><i>Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary</i></p> <ul style="list-style-type: none"> • The children select from a range of practical resources to gather evidence to answer their questions. They carry out fair tests, recognising and controlling variables. They decide what observations or measurements to make over time and for how long. They look for patterns and relationships using a suitable sample.

recognise how secondary sources can be used to answer questions that cannot be answered through practical work.	secondary sources (researching); in order to get accurate data (closer to the true value).	
Year 5 Greater Depth		
<ul style="list-style-type: none"> • Can they explore different ways to test an idea, choose the best way and give reasons? • Can they use information to help make a prediction? • Can they explain, in simple terms, a scientific idea and what evidence supports it? 	<ul style="list-style-type: none"> • Can they decide which units of measurement they need to use? • Can they explain why a measurement needs to be repeated? 	<ul style="list-style-type: none"> • Can they vary one factor whilst keeping the others the same in an experiment?
Year 6 Greater Depth		
<ul style="list-style-type: none"> • Can they choose the best way to answer a question and use information from different sources to plan an investigation? • Can they make a prediction which links with other scientific knowledge? 		<ul style="list-style-type: none"> • Can they plan which equipment they will need and use it effectively?
Recording and presenting evidence	Answering questions and concluding	Evaluating and raising further questions and predictions
<p>Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs</p> <ul style="list-style-type: none"> • The children decide how to record and present evidence. They record observations e.g. using annotated photographs, videos, labelled diagrams, observational drawings, labelled scientific diagrams or writing. They record measurements e.g. using tables, 	<p>Identifying scientific evidence that has been used to support or refute ideas or arguments</p> <ul style="list-style-type: none"> • Children answer their own and others' questions based on observations they have made, measurements they have taken or information they have gained from secondary sources. When doing this, they discuss whether other evidence e.g. from other groups, secondary sources and their scientific 	<p><i>Reporting and presenting 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</i></p> <ul style="list-style-type: none"> • They evaluate, for example, the choice of method used, the control of variables, the precision and accuracy of measurements and the credibility of secondary sources used.

<p>tally charts, bar charts, line graphs and scatter graphs. They record classifications e.g. using tables, Venn diagrams, Carroll diagrams and classification keys.</p> <ul style="list-style-type: none"> Children present the same data in different ways in order to help with answering the question. 	<p>understanding, supports or refutes their answer.</p> <ul style="list-style-type: none"> They talk about how their scientific ideas change due to new evidence that they have gathered. They talk about how new discoveries change scientific understanding. <p><i>Reporting and presenting 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</i></p> <ul style="list-style-type: none"> In their conclusions, children: identify causal relationships and patterns in the natural world from their evidence; identify results that do not fit the overall pattern; and explain their findings using their subject knowledge. 	<ul style="list-style-type: none"> They identify any limitations that reduce the trust they have in their data. <p>Using test results to make predictions to set up further comparative and fair tests</p> <ul style="list-style-type: none"> Children use the scientific knowledge gained from enquiry work to make predictions they can investigate using comparative and fair tests.
Year 5 Greater Depth		
	<ul style="list-style-type: none"> Can they find a pattern from their data and explain what it shows? Can they link what they have found out to other science? 	<ul style="list-style-type: none"> Can they suggest how to improve their work and say why they think this?
Year 6 Greater Depth		
<ul style="list-style-type: none"> Can they explain qualitative and quantitative data? 	<ul style="list-style-type: none"> Can they identify scientific evidence that has been used to support or to refute ideas or arguments and link their conclusions to it? 	

Communicating their findings		
<p><i>Reporting and presenting 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</i></p> <ul style="list-style-type: none"> • They evaluate, for example, the choice of method used, the control of variables, the precision and accuracy of measurements and the credibility of secondary sources used. • They identify any limitations that reduce the trust they have in their data. <p>Using test results to make predictions to set up further comparative and fair tests</p> <ul style="list-style-type: none"> • Children use the scientific knowledge gained from enquiry work to make predictions they can investigate using comparative and fair tests. 		
Year 5 Greater Depth		
<ul style="list-style-type: none"> • Can they decide which units of measurement they need to use? • Can they explain why a measurement needs to be repeated? 		
Year 6 Greater Depth		
<ul style="list-style-type: none"> • Can they explain how they could improve their way of working? 		

<ul style="list-style-type: none">• Can they 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?		
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Scientific Vocabulary						
Plants						
EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	<p>Leaf, flower, blossom, petal, fruit, berry, root, seed, trunk, branch, stem, bark, stalk, bud</p> <p>Names of trees in the local area</p> <p>Names of garden and wild flowering plants in the local are</p>	As for Year 1 plus light, shade, sun, warm, cool, water, grow, healthy	Photosynthesis, pollen, insect/wind pollination, seed formation, seed dispersal (wind dispersal, animal dispersal, water dispersal)			

Scientific Vocabulary						
Animals Including Humans						
EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	<p>Head, body, eyes, ears, mouth, teeth, leg, tail, wing, claw, fin, scales, feathers, fur, beak, paws, hooves</p> <p>Names of animals experienced first-hand from each vertebrate group</p> <p>Parts of the body including those linked to PSHE teaching (see</p>	<p>Offspring, reproduction, growth, child, young/old stages (examples - chick/hen, baby/child/adult, caterpillar/butterfly), exercise, heartbeat, breathing, hygiene, germs, disease, food types (examples – meat, fish,</p>	<p>Nutrition, nutrients, carbohydrates, sugars, protein, vitamins, minerals, fibre, fat, water, skeleton, bones, muscles, joints, support, protect, move, skull, ribs, spine</p>	<p>Digestive system, digestion, mouth, teeth, saliva, oesophagus, stomach, small intestine, nutrients, large intestine, rectum, anus, teeth, incisor, canine, molar, premolars, herbivore, carnivore,</p>	<p>Puberty – the vocabulary to describe sexual characteristics</p>	<p>Heart, pulse, rate, pumps, blood, blood vessels, transported, lungs, oxygen, carbon dioxide, nutrients, water, muscles, cycle, circulatory system, diet, exercise, drugs, lifestyle</p>

	joint document produced by the ASE and PSHE Association Senses – touch, see, smell, taste, hear, fingers (skin), eyes, nose, ear and tongue	vegetables, bread, rice, pasta)		omnivore, producer, predator, prey, food chain		
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Scientific Vocabulary						
Materials						
EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	Object, material, wood, plastic, glass, metal, water, rock, brick, paper, fabric, elastic, foil, card/cardboard, rubber, wool, clay, hard, soft, stretchy, stiff, bendy, floppy, waterproof, absorbent, breaks/tears, rough, smooth, shiny, dull, see-through, not see-through	Names of materials – wood, metal, plastic, glass, brick, rock, paper, cardboard Properties of materials – as for Year 1 plus opaque, transparent and translucent, reflective, non-reflective, flexible, rigid Shape, push/pushing, pull/pulling, twist/twisting, squash/squashing, bend/bending, stretch/stretching		Solid, liquid, gas, state change, melting, freezing, melting point, boiling point, evaporation, temperature, water cycle	Thermal/electrical insulator/conductor, change of state, mixture, dissolve, solution, soluble, insoluble, filter, sieve, reversible/non-reversible change, burning, rusting, new material	

Scientific Vocabulary						
Seasonal Change						
EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Science Experiment Test Fair Find out Explain Reason Why Record Senses	Weather (sunny, rainy, windy, snowy etc.) Seasons (winter, summer, spring, autumn) Sun, sunrise, sunset, day length					

Scientific Vocabulary						
Living things and their habitats						
EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
		Living, dead, never been alive, suited, suitable, basic needs, food, food chain, shelter, move, feed Names of local habitats e.g. pond, woodland etc. Names of micro-habitats e.g. under logs, in bushes etc		Classification, classification keys, environment, habitat, human impact, positive, negative, migrate, hibernate	Life cycle, reproduce, sexual, sperm, fertilises, egg, live young, metamorphosis, asexual, plantlets, runners, bulbs, cuttings	Vertebrates, fish, amphibians, reptiles, birds, mammals, invertebrates, insects, spiders, snails, worms, flowering, non-flowering

Scientific Vocabulary						
Rocks						
EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
			Rock, stone, pebble, boulder, grain, crystals, layers, hard, soft, texture, absorb water, soil, fossil, marble, chalk, granite, sandstone, slate, soil, peat, sandy/chalk/clay soil			

Scientific Vocabulary						
Light						
EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
			Light, light source, dark, absence of light, transparent, translucent, opaque, shiny, matt, surface, shadow, reflect, mirror, sunlight, dangerous			As for Year 3 - Light, plus straight lines, light rays

Scientific Vocabulary						
Forces and Magnets						
EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
			Force, push, pull, twist, contact force, non-contact force, magnetic force, magnet, strength, bar magnet, ring magnet, button magnet, horseshoe magnet, attract, repel, magnetic material, metal, iron, steel, poles, north pole, south pole		Force, gravity, Earth, air resistance, water resistance, friction, mechanisms, simple machines, levers, pulleys, gears	

Scientific Vocabulary						
Sound						
EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
				Sound, source, vibrate, vibration, travel, pitch (high, low), volume, faint, loud, insulation		

Scientific Vocabulary

Electricity

EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
				<p>Electricity, electrical appliance/device, mains, plug, electrical circuit, complete circuit, component, cell, battery, positive, negative, connect/connections, loose connection, short circuit, crocodile clip, bulb, switch, buzzer, motor, conductor, insulator, metal, non-metal, symbol</p> <p>N.B. Children in Year 4 do not need to use standard symbols for electrical components, as this is taught in Year 6.</p>		<p>Circuit, complete circuit, circuit diagram, circuit symbol, cell, battery, bulb, buzzer, motor, switch, voltage</p> <p>N.B. Children do not need to understand what voltage is, but will use volts and voltage to describe different batteries. The words “cells” and “batteries” are now used interchangeably.</p>

Scientific Vocabulary						
Earth and Space						
EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
					Earth, Sun, Moon, (Mercury, Jupiter, Saturn, Venus, Mars, Uranus, Neptune), spherical, solar system, rotates, star, orbit, planets	

Scientific Vocabulary						
Evolution and Inheritance						
EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
						Offspring, sexual reproduction, vary, characteristics, suited, adapted, environment, inherited, species, fossils