Shenley Primary School – Long Term Curriculum Overview

Overview of Skills and 'Threads of Learning' - Science

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	In Nursery and Reception, statements will be taught across the year, but there may be a focus on particular areas each term.					
Nursery	**Communication and Language** Pay attention to more than one thing at a time, which can be difficult. Use a wider range of vocabulary. Start a conversation with an adult or a friend and continue it for many turns. **PSED** Select and use activities and resources, with help when needed. This helps them to achieve a goal they have chosen, or one which is suggested to them. **Physical Development** Use one-handed tools and equipment, for example, making snips in paper with scissors. **Understanding the World** Use all their senses in hands on exploration of natural materials. Explore how things work.		**Communication and Language** Develop their pronunciation but may have problems saying: • some sounds: r, j, th, ch, and sh • multi-syllabic words such as 'pterodactyl', 'planetarium' or 'hippopotamus'. **Understanding the World** Explore collections of materials with similar and/or different properties. Explore and talk about different forces they can feel. Talk about the differences between materials and changes they notice.		**Communication and Language** Understand 'why' questions, like: "Why do you think the caterpillar got so fat?" Use longer sentences of four to six words. Be able to express a point of view and to debate when they disagree with an adult or a friend, using words as well as actions. **PSED** Be increasingly independent in meeting their own care needs, e.g. brushing teeth, using the toilet, washing and drying their hands thoroughly. Make healthy choices about food, drink, activity and toothbrushing. **Physical Development** Choose the right resources to carry out their own plan. For example, choosing a spade to enlarge a small hole they dug with a trowel. Collaborate with others to manage large items, such as moving a long plank safely, carrying large hollow blocks. **Understanding the World** Talk about what they see, using a wide vocabulary 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.	
Reception	**Communication and Language** Understand how to listen carefully and why listening is important. Learn new vocabulary Use new vocabulary through the day. Engage in non-fiction books. **Physical Development** Develop their small motor skills so that they can use a range of tools competently, safely and confidently. Suggested tools: pencils for drawing and writing, paintbrushes, scissors, knives, forks and spoons. **Understanding the World** Explore the natural world around them. Describe what they see, hear and feel whilst outside.		**Communication and Language** Ask questions to find out more and to check they understand what has been said to them. Articulate their ideas and thoughts in well-formed sentences. Connect one idea or action to another using a range of connectives. Describe events in some detail. Use talk to help work out problems and organise thinking and activities explain how things work and why they might happen. Listen to and talk about selected non-fiction to develop a deep familiarity with new knowledge and vocabulary **PSED** Manage their own needs-Personal hygiene Know and talk about the different factors that support their overall health and wellbeing: - regular physical activity - sensible amounts of 'screen time' - healthy eating - having a good sleep routine - toothbrushing - being a safe pedestrian **Understanding the World** Recognise some environments that are different to the one in which they live. Understand the effect of changing seasons on the natural world around them		**Communication and Language Early Learning Goal** **Listening, Attention and Understanding** Listen attentively and respond to what they hear with relevant questions, comments and actions when being read to and during whole class discussions and small group interactions; Make comments about what they have heard and ask questions to clarify their understanding; Hold conversation when engaged in back-and-forth exchanges with their teacher and peers. **Speaking** Participate in small group, class and one-to-one discussions, offering their own ideas, using recently introduced vocabulary. Offer explanations for why things might happen, making use of recently introduced vocabulary from stories, nonfiction, rhymes and poems when appropriate. Express their ideas and feelings about their experiences using full sentences, including use of past, present and future tenses and making use of conjunctions, with modelling and support from their teacher. **PSED Early Learning Goal** **Managing Self** Manage their own basic hygiene and personal needs, including dressing, going to the toilet and understanding the importance of healthy food choices. **Understanding the World Early Learning Goal** **The Natural World** Explore the natural world around them, making observations and drawing pictures of animals and plants. Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class. Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter. **Physical Development Early Learning Goal** Hold a pencil effectively in preparation for fluent writing – using the tripod grip in almost all cases.	

					Use a range of small tools, including scissors, paintbrushes and cutlery. Begin to show accuracy and care when drawing.	
	Autumn 1	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**
Year 1	**Seasonal changes** ***Build from EYFS*** observe changes across the 4 seasons ***Build from EYFS*** observe and describe weather associated with the seasons and how day length varies **Working Scientifically** ● Decide on foci. ● Observing closely ***(build from EYFS)***, using simple equipment. Gather and record data to help in answering questions ***(build from EYFS)*** (for that season).	**Everyday materials** distinguish between an object and the material from which it is made ***Build from EYFS*** 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 ***Build from EYFS*** compare and group together a variety of everyday materials on the basis of their simple physical properties **Working Scientifically** ● Decide on foci. ● Observing closely ***(build from EYFS)***, using simple equipment. ● Gather and record data to help in answering questions ***(build from EYFS)***. Identify and classify.	**Seasonal changes** ***Revisit – what is happening now?*** observe changes across the 4 seasons observe and describe weather associated with the seasons and how day length varies **Working Scientifically** ● Decide on foci. ● Observing closely ***(build from EYFS)***, using simple equipment. ● Gather and record data to help in answering questions (for that season).	**Animals, including humans** Science week ***Types of Animals*** 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. ***Parts of Animals*** ***To be built on in Year 2*** describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets) identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense. **Working Scientifically** ● Use observations and ideas to suggest answers to simple questions. ● Observing closely ***(build from EYFS)***, using simple equipment. ● Perform simple tests ● Gathering and recording data to help in answering questions ***(build from EYFS)***. ● Identify and classify.	**Seasonal changes** ***Revisit – what is happening now?*** observe changes across the 4 seasons observe and describe weather associated with the seasons and how day length varies **Working Scientifically** ● Decide on foci. ● Observing closely, using simple equipment. ● Gather and record data to help in answering questions (for that season).	**Plants** 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 **Working Scientifically** ● Observe closely, using simple equipment. ● Observing closely, using simple equipment. ● Perform simple tests ● Gathering and recording data to help in answering questions ***(build from EYFS)***. ● Identify and classify. **Children to learn to grow their own plants, care for plants and observe their changes.** ***Built upon in Forest School.***
Year 2	**Everyday materials** 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. **Working Scientifically** Perform simple tests. Observe closely, using simple equipment. Using their observations and ideas to suggest answers to questions. Gather and record simple data to help in answering questions. Identify and classify.		**Animals, including humans** Science week ***Feeding and Exercise*** 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 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. **Working Scientifically** Gather and record simple data to help in answering questions. Use their ideas and observations to suggest answers to questions. Identify and classify ***Living Things*** explore and compare the differences between things that are living, dead, and things that have never been alive		**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 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 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 **Working Scientifically** Ask simple questions and recognise that they can be answered in different ways. Perform simple tests. Observe closely, using simple equipment. Use their observations and ideas to suggest answers to questions. Identify and classify. Gather and record data to help in answering questions.

			notice that animals, including humans, have offspring which grow into adults. **Working Scientifically** Observe closely, using simple equipment. Ask simple questions and recognise that they can be answered in different ways.	and identify and name different sources of food **Working Scientifically** Gather and record simple data to help in answering questions. Identifying and classifying. Use their observations and ideas to suggest answers to questions.	
Year 3	**Rocks and Soils** **This unit also links to Y6 Evolution and Inheritance.** 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. **Working Scientifically** Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions. Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. Recording findings using simple scientific language. Identifying differences, similarities or changes related to simple scientific ideas and processes. Using straightforward scientific evidence to answer questions or to support their findings.	**Forces and Magnets** notice that some forces need contact between 2 objects, but magnetic forces can act at a distance compare how things move on different surfaces observe how magnets attract or repel each other and attract some materials and not others 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 2 poles predict whether 2 magnets will attract or repel each other, depending on which poles are facing **Working Scientifically** Asking relevant questions and using different types of scientific enquiries to answer them. Setting up simple practical enquiries, comparative and fair tests. Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions. Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables. Use results to draw simple conclusions.	**Animals including humans** Science week **Movement and Feeding** 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. **Working Scientifically** Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions. Recording findings using simple scientific language. Identifying differences, similarities or changes related to simple scientific ideas and processes. Using straightforward scientific evidence to answer questions or to support their findings.	**Light** 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 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 a solid object find patterns in the way that the size of shadows change **Working Scientifically** Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables. Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.	**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 (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 **Working Scientifically** Asking relevant questions and using different types of scientific enquiries to answer them. Setting up simple practical enquiries, comparative and fair tests. Making systematic and careful observations Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions. Recording findings using simple scientific language, drawings, labelled diagrams.
Year 4	**Electricity** identify common appliances that run on electricity construct a simple series electrical circuit, identifying and naming its	**Sound** identify how sounds are made, associating some of them with something vibrating	**Animals, including humans** Science week ***Human Nutrition*** 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. (teeth workshop for Tring Museum trip)	**Living things in their habitats** recognise that living things can be grouped in a variety of ways explore and use classification keys to help group, identify and name a	**States of matter** ***Changes of State*** compare and group materials together, according to whether they are solids, liquids or gases

	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 **Working Scientifically** Set up simple practical enquiries, comparative and fair tests. Make systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. Use results to draw simple conclusions. Make predictions for new values and suggest improvements. With support, raise further questions.	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 **Working Scientifically** Ask relevant questions and using different types of scientific enquiries to answer them. Set up simple practical enquiries, comparative and fair tests. Make systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. Record 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.	**Working Scientifically** Set up simple practical enquiries, comparative and fair tests. Make systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. Record and present findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables. Report on findings from enquires in simple scientific language, using both oral and written explanations, displays or presentations or results and conclusions. Identify similarities, differences or changes related to simple scientific ideas and processes. Use straightforward scientific evidence to answer questions or to support their findings. Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions. With support, make predictions for new values, within or beyond the data collected. With support, raise further questions. If time allows, start **<u>Living things in their habitats</u>**		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 **Working Scientifically** Gather, record, classify and present data in a variety of ways to help in answering questions. Use straightforward scientific evidence to answer questions or to support their findings.	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. **Working Scientifically** Ask relevant questions and use different types of scientific enquiries to answer them. Make systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. Gather and record data in a variety of ways to help in answering questions. Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. Identify differences, similarities or changes related to simple scientific ideas and processes. Use straightforward scientific evidence to answer questions or to support their findings.
Year 5	**<u>Forces</u>** explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object 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 **Working Scientifically** To plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. To take measurements using scientific equipment, with increasing accuracy and precision. To take repeat reading when appropriate. To record data and results of increasing complexity. To record and present findings using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. 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		**<u>Changes in materials</u>** ***Separating Mixtures Best taught before Y5 Types of Change*.** 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. ***Types of Change*** 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	**<u>Earth and Space</u>** Science week describe the movement of the Earth and other planets relative to the sun in the solar system describe the movement of the moon relative to the Earth 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 **Working Scientifically** To identify scientific evidence that has been used to support or refute ideas or arguments.	**<u>Life cycles</u>** 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 **Working Scientifically** To record and present findings using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. To report on findings from enquire in oral and written explanations.	**<u>Humans developing to old age</u>** describe the changes as humans develop to old age **Working Scientifically** To record and present findings using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. To report on findings from enquire in oral and written explanations

	To identify scientific evidence that has been used to support or refute ideas of arguments.		with burning and the action of acid on bicarbonate of soda. ***Materials*** 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 give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic. **Working Scientifically** To plan different types of scientific enquiries to answer questions, recognising and controlling variables where necessary. To record data and results of increasing complexity, using scientific diagrams and labels, classification keys, tables, scatter graphs, bar chart line graphs. To report and present findings from enquiries, including conclusions, causal relationships and explanations of and the degree of trust in results in oral and written forms such as displays and other presentations. To use test results to make predictions to set up further comparative fair tests.			
Year 6	**<u>Classification</u>** 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 give reasons for classifying plants and animals based on specific characteristics **Working Scientifically** Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.	**<u>Evolution and Inheritance</u>** **This unit also links to Y3 Rocks and Soils.** 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. **Working Scientifically** Identify scientific evidence that has been used to support or refute ideas or arguments.	**<u>Earth and Space (just for 2022-2023)</u>** describe the movement of the Earth and other planets relative to the sun in the solar system describe the movement of the moon relative to the Earth 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 **Working Scientifically** To identify scientific evidence that has been used to support or refute ideas or arguments.	**<u>Light</u>** Science week 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 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 **Working Scientifically** Plan different types of scientific enquiries to answer questions, recognising and controlling variables where necessary. Take measurements using a range of scientific equipment, with	**<u>Electricity</u>** 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 **Working Scientifically** Plan different types of scientific enquiries to answer questions recognising and controlling variables where necessary. Take measurements, in standard units, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate.	**<u>Humans and Health</u>** **Our Bodies** 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. **Working Scientifically** To plan different types of scientific enquires to answer questions, recognising and controlling variables where necessary. Take measurements using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate. Record data and results of increasing complexity using scientific diagrams

		Use test results to make predictions and to set up further comparative fair tests.		increasing accuracy and precision, taking repeat readings when appropriate. Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. Report and present findings from enquires including conclusions, causal relationships and explanations, of and a degree of trust in results, in oral and written explanations such as displays and other presentation. Use test results to make predictions and to set up further comparative and fair tests.	Record and present findings using scientific diagram and labels, classification keys, tables, scatter graphs, bar and line graphs. Identify causal relationships and explanations of results. Draw conclusions, explain and interpret results (including the degree of trust). Use test result to make predictions and to set up further comparative and fair tests.	and labels, classification keys, scatter graphs, bar and line graphs. Report and present findings from enquiries including conclusions, causal relationships and explanations, of and a degree of trust in results, in oral and written forms such as displays and other presentations. Deciding as a class where to take our learning. Planning different types of enquiries to answer scientific questions.

Threads of learning through each area of knowledge

Animals, including humans						
EYFS	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
identify something as an animal name some places animals live identify and locate parts of their body identify and locate parts of animal bodies use their observations to describe humans and other animals name a very limited range of food can identify types of exercise name baby, child, adult and the young of some other animals	**Types of Animals** 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. **Parts of Animals** describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets) identify, name, draw and label the basic parts of the human body and	**Feeding and Exercise** 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 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. **Living Things** explore and compare the differences between things that	**Movement and Feeding** 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.	**Human Nutrition** 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.	**Life Cycles** 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 describe the changes as humans develop to old age	**Our Bodies** 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 This unit also links to Y3 Rocks and Soils.** recognise that living things have changed over time and that fossils

	say which part of the body is associated with each sense.	are living, dead, and things that have never been alive notice that animals, including humans, have offspring which grow into adults.				provide information about 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.
animal, head, legs, arms, knee, elbow, neck, face, feet, hands, bread, potatoes, apples, cereals, rice, meat, fish, milk, running, jumping, swimming, walking, chicken, hen, kitten, cat, dog, puppy, ducking, duck	**Body parts: eyes, ears, elbows, hair, mouth, nose, teeth, paw, hoof, tail, fin, shell, skin, wings, beak, fur, scales, feathers Fish: goldfish, tuna, salmon Birds: blackbird, magpie, robin, sparrow, crow, swan Reptiles: snake, lizard, tortoise Mammals: mouse, horse, cow, sheep, hamster, rabbit Amphibians: frog, toad, newt Senses: feel, hear, smell, see, taste, touch carnivore, omnivore, herbivore**	**baby, toddler, adult, eggs, fruit, vegetables, water, fibre, meat, fish, cheese, beans washing, exercise, diet, offspring**	**balanced diet, carbohydrates, protein, fats, fibre, fruit and vegetables, bones, muscles, femur, ribs, spine, tibia, shoulder blade, hollow, relax and contract, protect, support, internal, skeleton, exoskeleton**	**Teeth and eating: incisor, molar, canine, diet, decay, healthy, teeth, acids, sugars, mouth, rip, tear, chew, grind Digestive system: saliva, tongue, toilet, waste, nutrients, energy, stomach, large/small intestine, brain, lungs, movement, acids, urine, faeces, oesophagus**	**live young, hatch, tadpole, caterpillar, butterfly, pupae, larvae, chrysalis, reproduction, asexual, sexual, life cycle, pollination, seed, dispersal, pollen, stamen, stigma new born, infant, child, teenager, puberty, adult, wrinkles, grey hair, height, weight**	**heart, veins, arteries, capillaries, blood, pulse, beats, oxygen, carbon dioxide, nutrients, organs, drugs, medicines, minerals, vitamins, lungs variety, variation, offspring, species, competition, adapt, adaptation, reduce, survive, evolve, fossil, record, gills, blubber, moulting, long neck, hooves, eyelashes, tails, generation**

Plants

EYFS	Year 1	Year 2	Year 3
identify something as a plant name some common plants, identify leaf, root, stem and flower recognise that plants need water to grow name some places plants live identify the seeds in a fruit	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	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 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
root, stem, tree, leaf, flower, water, seed, plant	**petal, wild, trunk, soil, blossom, fruit, leaves, branch, bulbs, shrub, alive, vegetables, grass, garden, habitat, deciduous, earth, evergreen, compost, non-living, living, not alive, dead, artificial. Names of plants, e.g. daffodil, daisy…**	**seedling, bulb, buds, shoot, water, sun, light, seeds, nuts, frit stones, warm, grow, temperature, germinate**	**ground, transport, attract bees, catch sunshine, green, air, nutrients, growth, pollen, pollination, seed formation, seed dispersal, nutrition, support, anchor, reproduction**

Living things and their habitats

EYFS	Year 2	Year 4	Year 5	Year 6
See 'Animals, including humans'	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	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	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	**Classification:** 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

	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 chain, and identify and name different sources of food	recognise that environments can change and that this can sometimes pose dangers to living things		give reasons for classifying plants and animals based on specific characteristics
See 'Animals, including humans'	**alive, dead, living, non-living, habitats, keys, breathe, grow, eat, have babies, move, sense, go to the toilet, habitat, microhabitat, food chain**	**predator, prey, producer, river, ocean, desert, arctic, rainforest, mountain, farmland, wood, dry, wet, vegetation, shelter, vertebrate, invertebrate, classify, characteristic, flowering plant, non-flowering plant (fern, moss)**	**live young, hatch, tadpole, caterpillar, butterfly, ladybird, pupae, larvae, chrysalis, reproduction, asexual, sexual, life cycle, pollination, seed dispersal, pollen, stamen, stigma**	**micro-organism, microbe, fungus, bacteria, virus, classified, classification key, yeast, characteristic, microscope**

Materials and changes of state

EYFS	Year 1	Year 2	Year 3	Year 4	Year 5
make observations of common materials make very simplistic observations of materials arrange materials into groups identify when changes occur e.g. when food is cooked	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	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.	**Rocks and Soils** **This unit also links to Y6 Evolution and Inheritance.** 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.	**Changes of State** 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.	**Separating Mixtures Best taught before Y5 Types of Change.** 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. **Types of Change** 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. **Materials** 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 give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic.
hard, soft, rough, smooth	**hard, stiff, rough, not bendy, opaque, strong, soft, shiny, smooth, waterproof, stretchy, material, transparent, dull, bendy, absorbent, wood, plastic, glass, magnetic, elastic, fabric, metal, water, rock**	**brick, cardboard, transparent, waterproof, insulate, keep warm, hard, rigid, strong, flexible, squash, stretch, twist, bend**	**Rock, soil, marble, granite, sand, stone, slate chalk, clay, texture, absorbed, permeable, pebble, characteristic, surface, organic, impermeable, crystal, grains, crumbly, igneous, sedimentary, metamorphic, fossil**	**water, ice, air, milk, lemonade, juice, metal, solid, liquid, gas, pour, flow, change shape, squash, heat, cool, grain/granular, temperature, thermometer, freeze, melt, boil, evaporate, condense, stream, smoke,**	**hardness, solubility, transparency, conductivity, thermal, insulation, dissolve, solution, separation, polymers, reversible, irreversible, evaporating, melting, evaporation, filtering, sieving, dissolving, burning, rusting, vinegar, bicarbonate of soda, magnetism,**

				sea water, properties, melting point, degrees Celsius	**insulators, conductors, soluble, insoluble**

Earth and Space

EYFS	Year 1	Year 6
observe changes across the 4 seasons	observe changes across the 4 seasons observe and describe weather associated with the seasons and how day length varies	describe the movement of the Earth and other planets relative to the sun in the solar system describe the movement of the moon relative to the Earth 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
Seasons: Autumn, Spring, Summer, Winter **Weather types: rain, hail, snow, ice, sun, wind**	**Seasons: Autumn, Spring, Summer, Winter, deciduous, evergreen, shoot, fruit, earth, seeds, leaves, flowers,** **Weather types: rain, hail, snow, ice, frost, sun, showers, wind** **reproduce, babies/adults, life cycles, birds, insect, cold, warm, hot, sunrise, sunset**	**Earth, Sun, planet, Mercury, Venus, Mars, Jupiter, Moon, Saturn, Uranus, Neptune, solar system, spherical, moon, day and night, celestial body, rotation, hemisphere, orbit, gravity, shadow, daylight**

Light

EYFS	Year 3	Year 6
know that it is dangerous to look at the sun relate their sense of sight to their eyes	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 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 a solid object find patterns in the way that the size of shadows change	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 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
sun, light, sunlight, eyes	**shadow, light, flames, opaque, block, direction, light, travels, shortest, longest, highest, torch, shape, similar, transparent, translucent, light source, sun, object daytime, night-time, reflect, shine, shiny, absorb, reflective surface, mirror, sundial, lamp**	**reflection, transparent, translucent, opaque, periscope, luminous, non-luminous, absorb, direction**

Forces and Magnets

EYFS	Year 3	Year 5
observe and describe movements they and objects make	notice that some forces need contact between 2 objects, but magnetic forces can act at a distance compare how things move on different surfaces observe how magnets attract or repel each other and attract some materials and not others 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 2 poles predict whether 2 magnets will attract or repel each other, depending on which poles are facing	explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object 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

push, pull, twist, squash, stretch	**force, push, pull, speed up, slow down, change shape, change direction, movement, direction, friction, magnets, magnetic, surface, magnetism, north pole, south pole, repel, attract**	**force, air resistance, water resistance, magnetic attraction, gravitational attraction, direction, force, motion, weight, upthrust, Newton, force meter, stationary, surface area, force applied, pulley, lever, gear**

Electricity		
EYFS	**Year 4**	**Year 6**
know electricity can be dangerous explore a range of battery powered devices	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	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
battery, electricity, switch	**battery, cell, wires, switch, crocodile clips, buzzer, bulb, circuit, symbols, insulator, conductor, plastic, metal, appliance, component**	**voltage, current, series, component, circuit, conductor, positive/negative terminal, complete circuit, battery, cell**

Sound	
EYFS	Year 4
relate their sense of hearing to their ears	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
ears, loud, quiet	**sound, pitch, volume, vibrations, medium, insulation, travel, instrument**