

Stanley Grove Primary and Nursery Progression Grid

Progression of skills, knowledge and vocabulary in Science

Working Scientifically

EYFS	Year One	Year Two	Year Three	Year Four	Year Five	Year Six
<p>The Natural World Explore the natural world around them, making observations and drawing pictures.</p> <p>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.</p> <p>Understand some important processes and changes in the natural world around them.</p>	<ul style="list-style-type: none"> -asking simple questions and recognising that they can be answered in different ways. -observing closely by eye and beginning to use simple equipment. -performing simple tests (with guidance). -identifying and classifying (with guidance). -using their observations and ideas to suggest answers to questions (with guidance). -gathering and recording data to help in answering questions. (Tally given and simple chart completed with guidance). -Orally use Scientific language with HA children using it in written methods. 	<ul style="list-style-type: none"> -asking simple questions and recognising that they can be answered in different ways. -observing closely, using simple equipment. -performing simple fair tests. -identifying and classifying. -using their observations and ideas to suggest answers to questions. -gathering and recording data to help in answering questions. (Tally given and simple chart completed). -Use Scientific language appropriate for Year 2 when conducting experiments and in written methods. 	<ul style="list-style-type: none"> -With support, asking relevant questions and using different types of scientific enquiries to answer them. -With support, setting up simple practical enquiries, comparative and fair tests. -With support, making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers. -gathering, recording, classifying and presenting data using bar charts, tables and tally charts to help in answering questions. -recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables. -reporting on findings from enquiries, including oral and written 	<ul style="list-style-type: none"> -Independently, asking relevant questions and using different types of scientific enquiries to answer them. -Independently, setting up simple practical enquiries, comparative and fair tests. -Independently, making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data logging. -gathering, recording, classifying and presenting data in a variety of ways including scatter graphs and line graphs to help in answering questions. -recording findings using simple scientific language, drawings, labelled diagrams, 	<ul style="list-style-type: none"> -planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. -taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate. -recording data and results of increasing complexity using scientific diagrams and labels, tables, bar graphs. -using test results to make predictions to set up further comparative and fair tests. -reporting and presenting findings from enquiries, including conclusions, causal relationships, in oral and written forms such as displays and other presentations. -identifying scientific evidence that has been 	<ul style="list-style-type: none"> -planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. -taking measurements, choose their own range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate. -recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs and line bar and graphs -using test results to make predictions to set up further comparative and fair tests. Year 6 to be able to decide for themselves. -reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results,

			<p>explanations, displays or presentations of results and conclusions.</p> <p>-using results to draw simple conclusions and suggest simple improvements.</p> <p>-identifying differences and similarities related to simple scientific ideas and processes.</p> <p>-using straightforward scientific evidence to answer questions or to support their findings.</p> <p>-Use Scientific language appropriate for Year 3 when conducting experiments and in written methods.</p>	<p>keys, bar charts, and tables.</p> <p>-reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.</p> <p>-using results to draw simple conclusions, make predictions for new values and suggest improvements and raise further questions.</p> <p>-identifying differences and similarities or changes related to simple scientific ideas and processes.</p> <p>-using straightforward scientific evidence to answer questions or to support their findings.</p> <p>-Use Scientific language appropriate for Year 4 when conducting experiments and in written methods.</p>	<p>used to support or refute ideas or arguments.</p> <p>-Use Scientific language appropriate for Year 5 when conducting experiments and in written methods.</p>	<p>in oral and written forms such as displays and other presentations.</p> <p>-Identifying scientific evidence that has been used to support or refute ideas or arguments.</p> <p>-Use Scientific language appropriate for Year 6 when conducting experiments and in written methods.</p>
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Working Scientifically Vocabulary

EYFS	Year One	Year Two	Year Three	Year Four	Year Five	Year Six
<ul style="list-style-type: none"> • Why? • What if? • How? • What? • Question • Describe • Draw • See • Sort • Same • Different • Changes • Tell me... 	<p>As previous plus:</p> <ul style="list-style-type: none"> • Question • Equipment • Identify • Group • Record • Compare • Contrast • Observe 	<p>As previous plus:</p> <ul style="list-style-type: none"> • Classify • Record – diagram, chart • Data • Fair test • predict 	<p>As previous plus:</p> <ul style="list-style-type: none"> • Research • Practical enquiries • Comparative test • Fair test • Careful observation • Accurate measurements • Thermometer • Data – gather, record, classify, present • Record – drawings, labelled diagrams, keys, bar charts, tables • Conclusions • Predictions • Differences • Similarities • Changes • Evidence • Improvements • Secondary sources • Interpret 	<p>As previous plus:</p> <ul style="list-style-type: none"> • Data logger • Record – line charts / scatter graphs • Raise further questions 	<p>As previous plus:</p> <ul style="list-style-type: none"> • Plan • Variables • Measurements • Accuracy • Precision • Report – scientific diagrams, tables. scatter graphs, bar charts, line charts • Further comparative and fair test • Repeat readings • Explanations • Evidence – support, refute ideas or arguments • Systematic 	<p>As previous plus:</p> <ul style="list-style-type: none"> • degree of trust (in results) • Report – classification keys, pie charts

Themes that progress across year groups (with Vocabulary)

Plants

EYFS	Year One	Year Two	Year Three	Year Four	Year Five	Year Six
<p>Explore the natural world around them, making observations and drawing pictures of plants.</p> <p>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.</p> <p>Understand some important processes and changes in the natural world around them.</p> <p>Specifically this is broken down into: Nursery -plant seeds and care for growing plants. -understand the key features of the life cycle of a plant. -Begin to understand the need to respect and care for the natural environment and all living things. Reception -Explore the natural world around them -Explore what they see, hear and feel whilst outside. -Recognise some environments that are different to the one in which they live.</p>	<p>-identify and name a variety of common wild and garden plants, including deciduous and evergreen trees.</p> <p>-Identify and describe the basic structure of a variety of common flowering plants, including trees.</p>	<p>-observe and describe how seeds and bulbs grow into mature plants (throughout the year)</p> <p>-find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.</p> <p>-Pupils should be introduced to the requirements of plants for germination, growth and survival, as well as to the processes of reproduction and growth in plants.</p>	<p>-identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers.</p> <p>-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.</p> <p>-investigate the way in which water is transported within plants.</p> <p>-explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.</p> <p>-Pupils should be introduced to the relationship between structure and function: the idea that every part has a job to do. They should explore questions that focus on the role of the roots and stem in nutrition and support, leaves for nutrition and flowers for reproduction.</p>	n/a	n/a	n/a

-Understand the effect of changing seasons on the natural world around them (link to trees / plants.						
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Plants Vocabulary

EYFS	Year One	Year Two	Year Three	Year Four	Year Five	Year Six
<ul style="list-style-type: none"> • Seed • Soil • Grow • Leaf • Flowers • Fruit • Vegetable • Plants • Tree • Flowering cherry • Holly 	<ul style="list-style-type: none"> • Wild plants • Garden plants • Deciduous • Evergreen • Root • Leaves • Bud • Blossoms • Stem • Petals • Trunk • Branches • Horse Chestnut • Oak 	<p>As previous plus:</p> <ul style="list-style-type: none"> • Observe • Describe • Mature plants • Suitable temperature / light / water • Germination • Growth • Grow healthy • Survival • Reproduction • Ash • Willow 	<p>As previous plus:</p> <ul style="list-style-type: none"> • Nutrients / nutrition • Transport • Life cycle • Flowers pollination • Seed formation • Seed dispersal. • Structure • Function • Support • “Requirements for life and growth”. • Fertiliser • Apple • Elder 	n/a	n/a	n/a

Animals including humans

EYFS	Year One	Year Two	Year Three	Year Four	Year Five	Year Six
<p>Explore the natural world around them, making observations and drawing pictures of animals.</p> <p>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.</p> <p>Specifically this is broken down into:</p> <p><u>Nursery</u> -understand the key features of the life cycle of an animal. -Begin to understand the need to respect and care for the natural environment and all living things.</p> <p><u>Reception</u> -Explore the natural world around them -Explore what they see, hear and feel whilst outside. -Recognise some environments that are different to the one in which they live.</p>	<p>-identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals</p> <p>-identify and name a variety of common animals that are carnivores, herbivores and omnivores</p> <p>-describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets)</p> <p>-Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.</p> <p>-Pupils should use the local environment throughout the year to explore and answer questions about animals in their habitat. They should understand how to take care of animals taken from their local environment and the need to return them safely after study. Pupils should become familiar with the common names of some fish, amphibians, reptiles, birds and mammals, including those that are kept as pets.</p>	<p>-notice that animals, including humans, have offspring which grow into adults</p> <p>-find out about and describe the basic needs of animals, including humans, for survival (water, food and air)</p> <p>-describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.</p> <p>-Pupils should be introduced to the basic needs of animals for survival, as well as the importance of exercise and nutrition for humans. They should also be introduced to the processes of reproduction and growth in animals. The focus at this stage should be on questions that help pupils to recognise growth; they should not be expected to understand how reproduction occurs.</p> <p>-The following examples might be used: egg, chick, chicken; egg, caterpillar, pupa, butterfly; spawn, tadpole, frog; lamb, sheep. Growing into adults can include</p>	<p>-identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat</p> <p>-identify that humans and some other animals have skeletons and muscles for support, protection and movement.</p> <p>-Link to healthy lifestyles, health and hygiene, body clothes and teeth.</p> <p>-identify the different types of teeth in humans and their simple functions.</p> <p>-Pupils should continue to learn about the importance of nutrition and should be introduced to the main body parts associated with the skeleton and muscles, finding out how different parts of the body have special functions.</p>	<p>-describe the simple functions of the basic parts of the digestive system in humans.</p> <p>-construct and interpret a variety of food chains, identifying producers, predators and prey.</p> <p>-Pupils should be introduced to the main body parts associated with the digestive system, for example, mouth, tongue, teeth, oesophagus, stomach and small and large intestine and explore questions that help them to understand their special functions.</p> <p>-They might draw and discuss their ideas about the digestive system and compare them with models or images.</p>	<p>-describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird</p> <p>-describe the life process of reproduction in some plants and animals.</p> <p>-describe the changes as humans develop to old age.</p> <p>-Pupils should observe life-cycle changes in a variety of living things, for example, plants in the vegetable garden or flower border, and animals in the local environment. They should find out about the work of naturalists and animal behaviourists, for example, David Attenborough and Jane Goodall. Pupils should find out about different types of reproduction, including sexual and asexual reproduction in plants, and sexual reproduction in animals.</p>	<p>-identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood</p> <p>-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> <p>-Pupils should build on their learning from years 3 and 4 about the main body parts and internal organs (skeletal, muscular and digestive system) to explore and answer questions that help them to understand how the circulatory system enables the body to function.</p> <p>-Pupils should learn how to keep their bodies healthy and how their bodies might be damaged – including how some drugs and other substances can be harmful to the human body.</p>

	-Pupils should have plenty of opportunities to learn the names of the main body parts (including head, neck, arms, elbows, legs, knees, face, ears, eyes, hair, mouth, teeth) through games, actions, songs and rhymes.	reference to baby, toddler, child, teenager, adult.				
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Animals including humans Vocabulary

EYFS	Year One	Year Two	Year Three	Year Four	Year Five	Year Six
<ul style="list-style-type: none"> Animal (name common ones e.g. cow, dog, fish) Minibeast (name common ones e.g. ladybird, butterfly) Name some features e.g. beak, feathers, wings Person/people Touch / smell / see / taste / hear Grow Food Move 	<ul style="list-style-type: none"> fish, amphibians, reptiles, birds and mammals. Senses – touch, smell, vision, taste, hearing. Omnivores – meat and plants (examples badger, human, bear, chicken). Carnovores – meat eating (examples, dog, cat, lion, tiger, snake). Herbivores – plant eating (examples, cows, horses, mice). 	<p>As previous plus:</p> <ul style="list-style-type: none"> Offspring Grow Adults <p>Survival:</p> <ul style="list-style-type: none"> Hygiene Exercise Food Nutrition Air / water <p>Reproduction and growth in animals</p> <p>Process of growth examples:</p> <ul style="list-style-type: none"> egg, chick, chicken; egg, caterpillar, pupa, butterfly; spawn, tadpole, frog; lamb, sheep. <p>Growing into adults can include reference to baby, toddler, child, teenager, adult.</p>	<p>As previous plus:</p> <ul style="list-style-type: none"> nutrition nutrients carbohydrates protein fats fibre water vitamins minerals skeleton bones joints endoskeleton exoskeleton hydrostatic vertebrate invertebrate contract / relax muscles ball joint socket joint hinge joint gliding joint <p>Teeth:</p> <ul style="list-style-type: none"> incisors – cutting / slicing canines – ripping / tearing molars – chewing / grinding floss brush 	<p>As previous plus:</p> <ul style="list-style-type: none"> digestion mouth tongue saliva oesophagus transports stomach acid enzymes small intestine – absorbs water vitamins large intestine – compacts colon <p>Food chain:</p> <ul style="list-style-type: none"> sun producers consumers prey predators <p>Recap from Y1 carnivore / herbivore / omnivore</p>	<p>As previous plus:</p> <ul style="list-style-type: none"> puberty life cycle gestation growth reproduce foetus baby fertilisation toddler child teenager adult old age life expectancy adolescence adulthood early adulthood middle adulthood late adulthood childhood 	<p>As previous plus:</p> <ul style="list-style-type: none"> internal organs heart lungs liver kidney brain skeletal skeleton muscle muscular digest digestion digestive circulatory system heart blood vessels blood impact diet exercise drugs lifestyle nutrients water damage drugs alcohol substances

Materials (including material changes)

EYFS	Year One	Year Two	Year Three	Year Four	Year Five	Year Six
<p>Understand some important processes and changes in the natural world around them, including the changing states of matter.</p> <p>Specifically this is broken down into:</p> <p><u>Nursery</u> -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. -Talk about the differences between materials and changes they notice.</p> <p><u>Reception</u> -Explore the natural world around them -Explore what they see, hear and feel whilst outside.</p>	<p>Everyday Materials</p> <p>-distinguish between an object and the material from which it is made.</p> <p>-identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock</p> <p>-describe the simple physical properties of a variety of everyday materials</p> <p>-compare and group together a variety of everyday materials on the basis of their simple physical properties.</p> <p>-Pupils should explore, name, discuss and raise and answer questions about everyday materials so that they become familiar with the names of materials and properties such as: hard/soft; stretchy/stiff; shiny/dull; rough/smooth; bendy/not bendy; waterproof/not waterproof; absorbent/not absorbent; opaque/transparent. Pupils should explore and experiment with a wide variety of materials, not only those listed in the programme of study, but including for example: brick, paper, fabrics, elastic, foil.</p>	<p>Use of Everyday Materials</p> <p>-identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses</p> <p>-find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.</p> <p>-Pupils should identify and discuss the uses of different everyday materials so that they become familiar with how some materials are used for more than one thing (metal can be used for coins, cans, cars and table legs; wood can be used for matches, floors, and telegraph poles) or different materials are used for the same thing (spoons can be made from plastic, wood, metal, but not normally from glass). They should think about the properties of materials that make them suitable or unsuitable for particular purposes and they should be encouraged to think</p>	<p>n/a</p>	<p>States of matter including material changes</p> <p>-compare and group materials together, according to whether they are solids, liquids or gases.</p> <p>-observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C)</p> <p>-identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.</p> <p>-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.</p> <p>-Pupils should explore a variety of everyday materials and develop simple descriptions of the states of matter (solids hold their shape; liquids form a pool not a pile; gases</p>	<p>Properties and changes of material</p> <p>-know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution</p> <p>-use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating</p> <p>-give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic</p> <p>-demonstrate that dissolving, mixing and changes of state are reversible changes</p> <p>-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.</p> <p>-Pupils should build a more systematic understanding of materials by exploring</p>	<p>n/a</p>

about unusual and creative uses for everyday materials.

-Pupils might find out about people who have developed useful new materials, for example John Dunlop, Charles Macintosh or John McAdam.

escape from an unsealed container).

-Pupils should observe water as a solid, a liquid and a gas and should note the changes to water when it is heated or cooled.

and comparing the properties of a broad range of materials, including relating these to what they learnt about magnetism in year 3 and about electricity in year 4. They should explore reversible changes, including, evaporating, filtering, sieving, melting and dissolving, recognising that melting and dissolving are different processes.

- Pupils should explore changes that are difficult to reverse, for example, burning, rusting and other reactions, for example, vinegar with bicarbonate of soda. They should find out about how chemists create new materials, for example, Spencer Silver, who invented the glue for sticky notes or Ruth Benerito, who invented wrinkle-free cotton.

Materials (including material changes) Vocabulary

EYFS	Year One	Year Two	Year Three	Year Four	Year Five	Year Six
<ul style="list-style-type: none"> Hard / soft Melt Freeze Paper Bumpy Smooth 	<ul style="list-style-type: none"> Wood Plastic Glass Metal Water Rock Brick Paper Fabrics Elastic Foil <p>Properties:</p> <ul style="list-style-type: none"> Hard / soft Stretchy / stiff Shiny /dull Rough / smooth Bendy / not bendy Waterproof / not waterproof Absorbent / not absorbent 	<p>As previous plus:</p> <ul style="list-style-type: none"> Cardboard Rubber Squashing Bending Twisting Stretching <p><i>Examples:</i> Wood – matches, telegraph poles Metal – coins, cans, cars Plastic – some spoons</p> <ul style="list-style-type: none"> John Dunlop Charles Macintosh John McAdam 	n/a	<p>As previous plus:</p> <ul style="list-style-type: none"> solid solidify ice melt freeze liquid evaporate condense gas container changing state heated heat cooled cool degrees Celsius thermometer water cycle evaporation condensation temperature warm / cool water vapour 	<p>As previous plus:</p> <ul style="list-style-type: none"> properties hardness solubility transparency electrical conductor thermal conductor response to magnets dissolve / dissolving solution mixing separate separating reversible changes filtering sieving irreversible new material burning rusting magnetism chemists quantitative measurement s conductivity insulation chemical Spencer Silver Ruth Benerito 	n/a

Living things and their habitat

EYFS	Year One	Year Two	Year Three	Year Four	Year Five	Year Six
<p>Explore the natural world around them, making observations and drawing pictures of plants and animals.</p> <p>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.</p> <p>Specifically this is broken down into:</p> <p><u>Nursery</u> -understand the key features of the life cycle of an animal. -Begin to understand the need to respect and care for the natural environment and all living things.</p> <p><u>Reception</u> -Explore the natural world around them -Explore what they see, hear and feel whilst outside. -Recognise some environments that are different to the one in which they live.</p>	n/a	<p>-explore and compare the differences between things that are living, dead, and things that have never been alive</p> <p>-identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other</p> <p>-identify and name a variety of plants and animals in their habitats, including micro-habitats</p> <p>-describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food.</p> <p>-Pupils should be introduced to the idea that all living things have certain characteristics that are essential for keeping them alive and healthy. They should raise and answer questions that help them to become familiar with the life processes that are common to all living things. Pupils should be</p>	n/a	<p>-recognise that living things can be grouped in a variety of ways</p> <p>-explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment</p> <p>-recognise that environments can change and that this can sometimes pose dangers to living things. Pupils should use the local environment throughout the year to raise and answer questions that help them to identify and study plants and animals in their habitat. They should identify how the habitat changes throughout the year.</p> <p>Pupils should explore possible ways of grouping a wide selection of living things that include animals and flowering plants and non-flowering plants.</p> <p>-Pupils could begin to put vertebrate animals into groups such as fish, amphibians, reptiles, birds, and mammals; and invertebrates into</p>	<p>-describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird</p> <p>-describe the life process of reproduction in some plants and animals.</p> <p>-describe the changes as humans develop to old age.</p> <p>-Pupils should study and raise questions about their local environment throughout the year. They should observe life-cycle changes in a variety of living things, for example, plants in the vegetable garden or flower border, and animals in the local environment. They should find out about the work of naturalists and animal behaviourists, for example, David Attenborough and Jane Goodall.</p> <p>-Pupils should find out about different types of reproduction, including sexual and asexual reproduction in plants, and sexual reproduction in animals.</p> <p>-Pupils might work scientifically by: observing and comparing the life cycles of plants and animals in their local environment with other plants and animals</p>	<p>-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</p> <p>-give reasons for classifying plants and animals based on specific characteristics.</p> <p>-Pupils should build on their learning about grouping living things in year 4 by looking at the classification system in more detail. They should be introduced to the idea that broad groupings, such as micro-organisms, plants and animals can be subdivided. Through direct observations where possible, they should classify animals into commonly found invertebrates (such as insects, spiders, snails, worms) and vertebrates (fish, amphibians, reptiles, birds and mammals). They should discuss reasons why living things are placed in one group and not another.</p> <p>-Pupils might find out about the significance of the work of scientists such as Carl Linnaeus, a pioneer of classification.</p>

		<p>introduced to the terms 'habitat' (a natural environment or home of a variety of plants and animals) and 'micro-habitat' (a very small habitat, for example for woodlice under stones, logs or leaf litter). They should raise and answer questions about the local environment that help them to identify and study a variety of plants and animals within their habitat and observe how living things depend on each other, for example, plants serving as a source of food and shelter for animals.</p> <p>-Pupils should compare animals in familiar habitats with animals found in less familiar habitats, for example, on the seashore, in woodland, in the ocean, in the rainforest.</p>		<p>snails and slugs, worms, spiders, and insects.</p> <p>-Pupils should explore examples of human impact (both positive and negative) on environments, for example, the positive effects of nature reserves, ecologically planned parks, or garden ponds, and the negative effects of population and development, litter or deforestation.</p>	<p>around the world (in the rainforest, in the oceans, in desert areas and in prehistoric times), asking pertinent questions and suggesting reasons for similarities and differences. They might try to grow new plants from different parts of the parent plant, for example, seeds, stem and root cuttings, tubers, bulbs. They might observe changes in an animal over a period of time (for example, by hatching and rearing chicks), comparing how different animals reproduce and grow.</p> <p>-Pupils should draw a timeline to indicate stages in the growth and development of humans. They should learn about the changes experienced in puberty.</p>	
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Living things and their habitat Vocabulary

EYFS	Year One	Year Two	Year Three	Year Four	Year Five	Year Six
<ul style="list-style-type: none"> • Plants • flowers • Animal (name common ones e.g. cow, dog, fish) • Minibeast (name common ones e.g. ladybird, butterfly) • Name some features e.g. beak, feathers, wings • Food • Logs • Rocks • Worms in mud kitchen 	n/a	As previous plus: <ul style="list-style-type: none"> • Living • Dead • Never alive • Habitats • Micro-habitats • Food • Food chain • Sun • Grass • Cow • Human • Alive • Healthy 	n/a	As previous plus: <ul style="list-style-type: none"> • environment • dangers • flowering plants – including grasses • non-flowering plants – including mosses and ferns • plants • animals • vertebrate – fish, amphibians, reptiles, birds, mammals (recapped from Y1) • invertebrate – snails, slugs, worms, spiders, insects. Human impact: <ul style="list-style-type: none"> • positive – nature reserves, garden ponds • Negative – population, developments, litter, deforestation <ul style="list-style-type: none"> • Sycamore • Silver Birch 	As previous plus: <ul style="list-style-type: none"> • Life cycles • Life process of reproduction • Reproduction – plants: sexual, asexual and animals: sexual • Life cycles around the world – rainforest, oceans, desert • Prehistoric • David Attenborough • Jane Goodall <ul style="list-style-type: none"> • Yew • Rowan 	As previous plus: <ul style="list-style-type: none"> • classify • compare • Linnaean • Carl Linnaeus • Classification • Domain • Kingdom • Phylum • Class • Order • Family • Genus • Species • Characteristics • Microorganisms • Organism <ul style="list-style-type: none"> • Hawthorn • Hazel

Forces

EYFS	Year One	Year Two	Year Three	Year Four	Year Five	Year Six
<p>Understand some important processes and changes in the natural world around them.</p> <p>Specifically this is broken down into:</p> <p><u>Nursery</u> -Explore how things work -Explore and talk about different forces they can feel.</p> <p><u>Reception</u> -Explore the natural world around them. - Understand some important processes and changes in the natural world around them.</p>	n/a	n/a	<p>Forces and magnets</p> <p>-compare how things move on different surfaces</p> <p>-notice that some forces need contact between two objects, but magnetic forces can act at a distance</p> <p>-observe how magnets attract or repel each other and attract some materials and not others</p> <p>-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</p> <p>-describe magnets as having two poles</p> <p>-predict whether two magnets will attract or repel each other, depending on which poles are facing.</p> <p>Pupils should observe that magnetic forces can act without direct contact, unlike most forces, where direct contact is necessary (for example, opening a door, pushing a swing). They should explore the behaviour and everyday uses of different magnets (for example,</p>	n/a	<p>Forces</p> <p>-explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object</p> <p>-identify the effects of air resistance, water resistance and friction, that act between moving surfaces</p> <p>recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.</p> <p>-Pupils should explore falling objects and raise questions about the effects of air resistance. They should explore the effects of air resistance by observing how different objects such as parachutes and sycamore seeds fall.</p> <p>-They should experience forces that make things begin to move, get faster or slow down.</p> <p>-Pupils should explore the effects of friction on movement and find out how it slows or stops moving objects, for example, by observing the effects of a brake on a bicycle wheel.</p>	n/a

bar, ring, button and horseshoe).

-Pupils should explore the effects of levers, pulleys and simple machines on movement. Pupils might find out how scientists, for example, Galileo Galilei and Isaac Newton helped to develop the theory of gravitation.

Forces Vocabulary

EYFS	Year One	Year Two	Year Three	Year Four	Year Five	Year Six
<ul style="list-style-type: none"> • Float • Sink • Push • Pull • Lift • Press • Drop • Open • Close • Stop • Move 	n/a	n/a	As previous plus: <ul style="list-style-type: none"> • Force • Surface • Magnet • Magnetic • Attract • Repel • Magnetic poles • North • South 	n/a	As previous plus: <ul style="list-style-type: none"> • Gravity • Air resistance • Water resistance • Friction • Surface • Force • Effect • Move • Accelerate • Decelerate • Stop • Change direction • Brake • Mechanism • Pulley • Gear • Spring • Theory of gravitation • Galileo Galilei • Sir Isaac Newton 	n/a

Light

EYFS	Year One	Year Two	Year Three	Year Four	Year Five	Year Six
<p>Explore the natural world around them, making observations.</p> <p>Understand some important processes and changes in the natural world around them.</p>	n/a	n/a	<p>-recognise that they need light in order to see things and that dark is the absence of light</p> <p>-notice that light is reflected from surfaces</p> <p>-recognise that light from the sun can be dangerous and that there are ways to protect their eyes</p> <p>-recognise that shadows are formed when the light from a light source is blocked by a solid object</p> <p>find patterns in the way that the size of shadows change.</p> <p>Pupils should explore what happens when light reflects off a mirror or other reflective surfaces, including playing mirror games to help them to answer questions about how light behaves. They should think about why it is important to protect their eyes from bright lights. They should look for, and measure, shadows, and find out how they are formed and what might cause the shadows to change.</p>	n/a	n/a	<p>-recognise that light appears to travel in straight lines</p> <p>-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> <p>-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.</p> <p>-use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.</p> <p>-Pupils should build on the work on light in year 3, exploring the way that light behaves, including light sources, reflection and shadows. They should talk about what happens and make predictions.</p>

Light Vocabulary

EYFS	Year One	Year Two	Year Three	Year Four	Year Five	Year Six
<ul style="list-style-type: none"> • Sun • Light • See • Dark • Moon • Eyes • Night • Day • torch 	n/a	n/a	As previous plus: <ul style="list-style-type: none"> • Reflect • Surface • Natural • Star • Blocked • Solid • Artificial • Torch • Candle • Lamp • Sunlight • Dangerous • Protect eyes • Opaque • Transparent • Translucent • Shadows 	n/a	n/a	As previous plus: <ul style="list-style-type: none"> • Light • Travels • Straight lines • Reflect • Reflection • Refract • Refraction • Light source • Angle of incidence • Angle of reflection • Object • Mirrors • Periscope • Kaleidoscope • Rainbow • Prism • Filters

Electricity

EYFS	Year One	Year Two	Year Three	Year Four	Year Five	Year Six
n/a	n/a	n/a	n/a	<p>-identify common appliances that run on electricity</p> <p>-construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers</p> <p>-identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery</p> <p>-recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit</p> <p>-recognise some common conductors and insulators, and associate metals with being good conductors. Pupils should construct simple series circuits, trying different components, for example, bulbs, buzzers and motors, and including switches, and use their circuits to create simple devices. Pupils should draw the circuit as a pictorial representation, not</p>	n/a	<p>-associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit</p> <p>-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</p> <p>-use recognised symbols when representing a simple circuit in a diagram.</p> <p>Building on their work in year 4, pupils should construct simple series circuits, to help them to answer questions about what happens when they try different components, for example, switches, bulbs, buzzers and motors. They should learn how to represent a simple circuit in a diagram using recognised symbols.</p>

necessarily using conventional circuit symbols at this stage; these will be introduced in year 6.

Electricity Vocabulary

EYFS	Year One	Year Two	Year Three	Year Four	Year Five	Year Six
n/a	n/a	n/a	n/a	<ul style="list-style-type: none"> • appliances • electricity • electrical circuit • current • battery/cell • wire • bulb • buzzer • danger • electrical safety • sign • switch – open / closed <p>insulators – wood, rubber, plastic, glass</p> <p>conductors – metal, water</p>	n/a	<p>As previous plus:</p> <ul style="list-style-type: none"> • series circuit • parallel circuit (explain only to HA, not required). • cell • motor • circuit diagram • recognised symbols • volume • voltage • brightness • switches • LED's • Alternating current • Thomas Edison • Michael Faraday • Nikola Tesla.

Rocks / fossils / Evolution / Inheritance

EYFS	Year One	Year Two	Year Three	Year Four	Year Five	Year Six
Explore the natural world around them, making observations.	n/a	n/a	<p>Rocks and Fossils</p> <p>-compare and group together different kinds of rocks on the basis of their appearance and simple physical properties</p> <p>-describe in simple terms how fossils are formed when things that have lived are trapped within rock</p> <p>-recognise that soils are made from rocks and organic matter.</p> <p>-Linked with work in geography, pupils should explore different kinds of rocks and soils, including those in the local environment.</p>	n/a	n/a	<p>Evolution and inheritance</p> <p>-recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago</p> <p>-recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents</p> <p>-identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.</p> <p>-Building on what they learned about fossils in the topic on rocks in year 3, pupils should find out more about how living things on earth have changed over time. They should be introduced to the idea that characteristics are passed from parents to their offspring, for instance by considering different breeds of dogs, and what happens when, for example, labradors are crossed with poodles.</p> <p>-They should also appreciate that variation in offspring over time can make animals more or</p>

less able to survive in particular environments, for example, by exploring how giraffes' necks got longer, or the development of insulating fur on the arctic fox. Pupils might find out about the work of palaeontologists such as Mary Anning and about how Charles Darwin and Alfred Wallace developed their ideas on evolution.

Rocks / fossils / Evolution / Inheritance Vocabulary

EYFS	Year One	Year Two	Year Three	Year Four	Year Five	Year Six
rock soil	n/a	n/a	<ul style="list-style-type: none"> • Appearance • Physical • Properties • Fossils • Sedimentary • Rock • Soils • Organic matter • Buildings • Gravestones • Grains • crystals 	n/a	n/a	As previous plus: <ul style="list-style-type: none"> • Evolution • Adaptation • Inherited traits • Adaptive traits • Natural selection • Inheritance • Charles Darwin • DNA • Genes • Variation • Parent • Offspring • Fossil / Fossilisation • Environment • Habitat • Plants • Animals • Living things • Palaeontologists • Mary Anning • Alfred Wallace • Charles Darwin

Themes that do NOT progress across year groups (Vocabulary only)

EYFS	Year One	Year Two	Year Three	Year Four	Year Five	Year Six
Seasons	Seasonal changes	<i>n/a</i>	Famous Scientists	Sound	Earth and Space	<i>n/a</i>
<p>Understand some important processes and changes in the natural world around them, including the seasons.</p> <p>Reception Understand the effect of changing seasons on the natural world around them.</p> <ul style="list-style-type: none"> • Summer • Autumn • Winter • Spring 	<p>RECAP from EYFS</p> <ul style="list-style-type: none"> • Summer • Autumn • Winter • Spring <ul style="list-style-type: none"> • Day • Daytime <p>Weather:</p> <ul style="list-style-type: none"> • Wind • Rain • Snow • Hail • Sleet • Fog • Sun • Hot • Warm • cold 		<p>Inspirational Scientists:</p> <ul style="list-style-type: none"> • Marie Curie, • Joseph Bazalgette <p>Qualities of a good scientist:</p> <ul style="list-style-type: none"> • curious • Perseverance • Patient • Creative • Open minded • Detail-orientated • Communicative • Problem-solving • Persistent • Able to work alone or in teams. • teamwork 	<ul style="list-style-type: none"> • vibrate • vibration • data logger • sound survey • air • medium • ear • hear • sound • volume • pitch • faint • fainter • distance • loud • louder • string • percussion • woodwind • brass • insulate • insulation 	<ul style="list-style-type: none"> • Earth • Sun • Moon • Moons • Planets • Stars • Asteroids • Solar system • Mercury • Venus • Mars • Jupiter • Saturn • Uranus • Neptune • Pluto • Rotate • Day / night • Aristotle • Ptolemy • Galileo • Copernicus • Brahe • Alhazen • Orbit • Axis • Spherical • Heliocentric • Geocentric • Hemisphere • Season • tilt 	

NOTES

*"**Scientific enquiry** refers to the diverse ways in which **scientists** study the natural world and propose explanations based on the evidence derived from their work."*

The 5 scientific enquiries:

1. Observation over time.
2. Pattern seeking (looking for naturally occurring patterns and relationships).
3. Identifying, classifying and grouping.
4. Comparative and fair testing.
5. Research using secondary sources