Science Curriculum Overview
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| | Subject Specific Vocabulary<br>Children should confidently understand and use | | | | |
|---|---|---|---|---|---|
| EYFS | Vocabulary for materials – Wood, plastic, metal, glass, hard, soft,<br>Vocabulary of animals –body, head, shoulders, knees, toes, arm, leg,<br>Vocabulary of plants – stem, flower, seed, soil<br>Encouraging the correct vocabulary when making observations of animals and plants and explain why some things occur, and talking about changes | | | | |
| Year 1 | Everyday Materials<br>wood, plastic, glass, paper, water, metal, rock, hard, soft, bendy, rough, smooth | Seasonal Changes<br>Summer, Spring, Autumn, Winter, Sun, day, Moon, night, light, dark | Animals including humans<br>fish, reptiles, mammals, birds, amphibians (+ examples of each) herbivore, omnivore, carnivore, leg, arm, elbow, head, ear, nose, back wings, beak<br><br>**Focus Scientist**<br>Einstein, Newton, Curie | Plants<br>deciduous, evergreen trees, leaves, flowers (blossom), petals, fruit, roots, bulb, seed, trunk, branches, stem | |
| Year 2 | Animals including humans<br>survival, water, air, food, adult, baby, offspring, kitten, calf, puppy, exercise, hygiene | Everyday materials and their uses<br>hard, soft, stretchy, stiff, shiny, dull, rough, smooth, bendy, waterproof, absorbent, opaque, transparent brick, paper, fabrics, squashing, bending, twisting, stretching elastic, foil | Living things and their habitats<br>living, dead, habitat, energy, food chain, predator, prey, woodland, pond, desert<br><br>**Focus Scientist**<br>David Attenborough | Plants<br>seeds, bulbs, water, light, temperature, growth | |
| Year 3 | Animals including humans<br>movement, muscles, bones, skull, nutrition, skeletons | Rocks<br>fossils, soils, sandstone, granite, marble, pumice, crystals, absorbent<br><br>**Focus Scientist** | Light<br>light, shadows, mirror, reflective, reflection, dark | Plants<br>air, light, water, nutrients, soil, reproduction, transportation, dispersal, pollination, flower | Forces and Magnets<br>magnetic, force, contact, attract, repel, friction, poles, push, pull |

# Science Curriculum Overview
# September 2021

| | | | | | |
|---|---|---|---|---|---|
| | | Mary Anning | | | |
| Year 4 | Animals including humans<br>mouth, tongue, teeth, oesophagus, stomach, small intestine, large intestine, herbivore, carnivore, canine, incisor, molar | States of Matter<br>solid, liquid, gas, evaporation, condensation, particles, temperature, freezing, heating | Living things and their habitats<br>vertebrates, fish, amphibians, reptiles, birds, mammals, invertebrates, snails, slugs, worms, spiders, insects, environment, habitats | Sound<br>volume, vibration, wave, pitch, tone, speaker<br>**Focus Scientist**<br>Alexander Graham Bell | Electricity<br>cells, wires, bulbs, switches, buzzers, battery, circuit, series, conductors, insulators |
| Year 5 | Earth and Space<br>Earth, Sun, Moon, axis, rotation, day, night, phases of the Moon, star, constellation<br>**Focus Scientist**<br>Dr Mae Jemison | Forces<br>air resistance, water resistance, friction, gravity, Newton, gears, pulleys | Properties and changes of materials<br>hardness, solubility, transparency, conductivity, magnetic, filter, Evaporation, dissolving, mixing | Living things and their habitats<br>mammal, reproduction, insect, amphibian, bird, offspring | Animals including humans<br>foetus, embryo, womb, gestation, baby, toddler, teenager, elderly, growth, development, puberty |
| Year 6 | Light and Sight<br>refraction, reflection, light, spectrum, rainbow, colour, | Living things and their habitats<br>classification, vertebrates, invertebrates, micro-organisms, amphibians, reptiles, mammals, insects<br>**Focus Scientist:**<br>Carl Linnaeus | Evolution and Inheritance<br>fossils, adaptation, evolution, characteristics, reproduction, genetics | Electricity<br>cells, wires, bulbs, switches, buzzers, battery, circuit, series, conductors, insulators, amps, volts, cell | Animals including humans<br>circulatory, heart, blood vessels, veins, arteries, oxygenated, deoxygenated, valve, exercise, respiration |

# Science Curriculum Overview
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**EYFS**

**Communication and Language**

Listening, Attention and Understanding ELG

Children at the expected level of development will:

- 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 ELG

Children at the expected level of development will:

- 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, non-fiction, 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.

**Personal, Social and Emotional Development**

Children at the expected level of development will:

- Manage their own basic hygiene and personal needs, including dressing, going to the toilet, and understanding the importance of healthy food choices.

Building Relationships ELG

Children at the expected level of development will:

- Work and play cooperatively and take turns with others;
- Form positive attachments to adults and friendships with peers;
- Show sensitivity to their own and to others' needs.

**Physical Development**

Fine Motor Skills ELG

Children at the expected level of development will:

- 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, paint brushes and cutlery;

- Begin to show accuracy and care when drawing.

**ELG: The Natural World**

Children at the expected level of development will:

- 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

# Science Curriculum Overview
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| | Everyday Materials | Seasonal Changes (Autumn starts 27th Oct) (Winter starts 21st Dec) | Animals including Humans | Seasonal Changes (Spring starts 20th March)Plants | Plants |
|---|---|---|---|---|---|
| **Year 1** | Pupils will have:<br>• Learnt what a material is and the names of different materials - wood, plastic, glass, paper, fabric, rock, metal and water<br>• Discovered the difference between objects and materials and learnt to distinguish between objects and the materials they are made from<br>• Explored some of the simple properties of different materials<br>• Investigated other properties of materials – whether materials are waterproof, transparent, opaque or absorbent<br>• Investigated why certain materials are chosen for certain objects<br>• Sorted and grouped objects according to the materials they are made from and their properties. | Autumn and Winter:<br>• What are the four seasons?<br>• What is the weather like in autumn?<br>• What happens to plants and animals in autumn?<br>• What changes can we see from autumn to winter?<br>• What is the weather like in winter?<br>• What happens to animals in winter? | Pupils will have:<br>• Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals;<br>• Identify and name a variety of common animals that are carnivores, herbivores and omnivores;<br>• Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets);<br>• Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense". | Spring and Summer:<br>• How would you describe the four seasons?<br>• How does the weather change from winter to spring?<br>• What happens to plants and animals in spring?<br>• What changes can we see in the weather from spring to summer?<br>• What happens to plants and animals in summer?<br>• How do the seasons affect humans? | Pupils will have:<br>• Identify and name a variety of:<br>-Common wild plants<br>-Garden plants<br>-Deciduous trees<br>-Evergreen trees<br>• Identify and describe the basic structure of a variety of:<br>-Flowering plants<br>-Trees<br><br>**Focus Scientist**<br>Einstein, Newton, Marie Curie |

# Science Curriculum Overview
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| | |
|---|---|
| **Year 1** | **Working Scientifically** |
| | •Asking simple questions and recognising they can be answered in different ways. |
| | •Observing closely, using simple equipment. |
| | •Performing simple tests. |
| | •Identifying and classifying. |
| | •Using their observations and ideas to suggest answers to questions. |
| | •Gathering and recording data to help in answering questions. |

# Science Curriculum Overview
# September 2021

| | Animals including Humans | Everyday materials | Living Things and their Habitats | Protecting Our Environment | Plants |
|---|---|---|---|---|---|
| **Year 2** | Pupils will have:<br>• Gained an understanding of the basic needs for animals – water, food and air<br>• Learnt that animals, including humans, have offspring which are similar to them and go through different life stages<br>• Discovered why exercise is so important for humans<br>• Explored what a balanced diet is and the names of the different food groups<br>• Investigated their own diet to discover whether or not it can be classed as 'balanced'<br>• Learnt what hygiene is and why it is important<br>**Focus Scientist**<br>David Attenborough | Pupils will:<br>• Identify and compare the suitability of a variety of everyday materials, including particular uses -<br>Wood Metal<br>Plastic Glass<br>Brick Rock<br>Paper<br>Cardboard<br>• Find out how the shapes of solid objects made from some materials can be changes by<br>Squashing Bending<br>Twisting<br>Stretching | Pupils will know:<br>• The basic needs for animals – water, food and air.<br>• That animals, including humans, have offspring which are similar (but not identical) to them and go through different life stages.<br>• Why exercise is so important for humans.<br>• What a balanced diet is and the names of the different food groups.<br>• Whether or not some of the meals they have eaten can be classed as being part of a 'balanced diet'.<br>• What hygiene is and why it is important. | Pupils have:<br>• Gained an understanding of the basic needs for animals – water, food and air.<br>• Learnt that animals, including humans, have offspring which are like them and go through different life stages.<br>• Discovered why exercise is so important for humans.<br>• Explored what a balanced diet is and the names of the different food groups.<br>• Investigated their own diet to discover whether it can be classed as 'balanced'. | Pupils will:<br>• Learn what seeds are, the different types of seeds and what is inside a seed<br>• Learn that plants can grow from seeds and bulbs<br>• Learn what is meant by 'germination' and that seeds need certain conditions to germinate<br>• Learn about the needs of a plant to grow and survive, after the initial germination stage<br>• Learn what is meant by 'seed dispersal' |

Science Curriculum Overview
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| | |
|---|---|
| | **Working Scientifically** |
| | •Asking simple questions and recognising they can be answered in different ways. |
| | •Observing closely, using simple equipment. |
| | •Performing simple tests. |
| | •Identifying and classifying. |
| | •Using their observations and ideas to suggest answers to questions. |
| | •Gathering and recording data to help in answering questions. |

# Science Curriculum Overview
# September 2021

| | Animals including humans | Rocks & Soils | Light | Plants | Forces & Magnets |
|---|---|---|---|---|---|
| **Year 3** | Pupils will<br>• Identify that animals including humans –<br>-Need the right types and amount of nutrition<br>-Cannot make their own food<br>-Get their nutrition from what they eat<br>• Identify that humans and other animals have skeletons and muscles for<br>-Support<br>-Protection<br>-Movement | Pupils will<br>• Compare and group together different kinds of rocks on the basis of their appearance and physical properties.<br>• Recognise that soils are made from rock and organic matter.<br>• Describe in simple turns how fossils are formed when things that have lived are trapped within rocks.<br><br>**Focus Scientist**<br>Mary Anning | Pupils will<br>• Recognise that they need light in order to see things and that dark is the absence of light.<br>• Recognise that shadows are formed when the light from a light source is blocked by a solid object.<br>• Find patterns in the way that the sizes of shadows change<br>• Notice that light is reflected from surfaces.<br>• Recognise that light from the sun can be dangerous and that there are ways to protect their eyes | Pupils will<br>• Identify and describe the functions of different parts of flowering plants including<br>Roots Stem / trunk<br>Flowers Leaves<br>• Explore the requirements of plants for life and growth and how these vary from plant to plant -<br>Air Light Water<br>Nutrients from soil Room to grow<br>• Investigate the way in which water is transported within plants<br>• Explore the part that flowers play in the life cycle of flowering plants including -<br>Pollination<br>Seed formation<br>Seed dispersal | Pupils will notice that:<br>- Some forces need contact between two objects<br>- Magnetic forces can act at a distance<br>• Compare how things move on different surfaces<br>• Compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet.<br>• Identify some magnetic materials<br>• Observe how magnets:<br>-Attract or repel each other<br>-Attract some materials and not others<br>• Depending on which poles are facing, predict whether two magnets will attract or repel each other |

# Science Curriculum Overview
# September 2021

| Year 3 | | | | | | |
|---|---|---|---|---|---|---|
| | **Working Scientifically** | | | | | |
| | • Asking relevant questions and using different types of scientific enquires to answer them. | | | | | |
| | • Setting up | | | | | |
| | Simple practical enquiries | | Comparative tests | | Fair tests | |
| | •Making Systematic and careful observations and where appropriate, take accurate measurements using standard units, using a range of equipment including - | | | | | |
| | Thermometers | | | Dataloggers | | |
| | • Answering questions in a variety of ways | | | | | |
| | Gathering information | Recording information | | Classifying information | Presenting data | |
| | • Record findings using - | | | | | |
| | Simple scientific language | Labelled diagrams | Drawings | Keys | Bar charts | Tables |
| | • Report on findings from enquiries using results and conclusions - | | | | | |
| | Written explanations | Oral explanations | | Displays | Presentation | |
| | • Using results to draw simple conclusions - | | | | | |
| | Make predictions for new values | | Suggest improvements | | Raise further questions | |
| | • Related to simple scientific ideas and process - | | | | | |
| | Identify differences | | Identify changes | | Identify similarities | |
| | • Using straightforward scientific evidence to - | | | | | |
| | Answer questions | | | Support their finding | | |

# Science Curriculum Overview
# September 2021

| Year 4 | Animals including animals | States of Matter | Living things and their habitat | Sound | Electricity |
|---|---|---|---|---|---|
| | Pupils will:<br>• Construct and interpret a variety of food chains identifying -<br>Producers<br>Predators<br>Prey<br>• Identify the different types of teeth in humans and their functions.<br>• Describe the simple functions of the basic parts of the digestive system in humans | Pupils will:<br>• Compare and group materials together, according to whether they are solids, liquids or gases<br>• Observe that some materials change state, measure or research the temperature at which this happens in degrees Celsius (°C)<br>Heated Cooled<br>• Associate the rate of evaporation with temperature<br>• Identify the part played by evaporation and condensation in the water cycle | Pupils will:<br>• Recognise that living things can be grouped in a variety of ways<br>• Explore and use classification keys to help group, identify and name a variety of living things -<br>-In the local environment<br>-In the wider environment<br>• Recognise that environments can change and that this can sometimes pose dangers to living things | Pupils will:<br>• Identify how sounds are made, associating some of them with something vibrating<br>• Recognise that vibrations from sounds travel through a medium to the ear<br>• Recognise that sounds get fainter as the distance from the sound source increases.<br>• Find patterns between the volume of a sound and the strength of the vibrations that produced it<br>• Find patterns between the pitch of a sound and features of the object that produced it<br>**Focus Scientist**<br>Alexander Graham Bell | Pupils will:<br>• Construct a simple series electrical circuit, identifying and naming its basic parts including<br>Cells Wires<br>Bulbs Buzzer<br>Switches<br>• Identify common appliances that run on electricity<br>• Recognise common<br>Conductors Insulator<br>• Associate metals with being good conductors<br>• Identify whether or not a lamp will light in a simple series of circuits, based on whether or not the lamp is part of a complete loop with a battery<br>• Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit |

# Science Curriculum Overview
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| Year 4 | | | | | | |
|---|---|---|---|---|---|---|
| | **Working Scientifically** | | | | | |
| | • Asking relevant questions and using different types of scientific enquires to answer them. | | | | | |
| | • Setting up | | | | | |
| | Simple practical enquiries | | Comparative tests | | Fair tests | |
| | • Making Systematic and careful observations and where appropriate, take accurate measurements using standard units, using a range of equipment including - | | | | | |
| | Thermometers | | | Dataloggers | | |
| | • Answering questions in a variety of ways | | | | | |
| | Gathering information | | Recording information | Classifying information | Presenting data | |
| | • Record findings using - | | | | | |
| | Simple scientific language | Labelled diagrams | Drawings | Keys | Bar charts | Tables |
| | • Report on findings from enquiries using results and conclusions - | | | | | |
| | Written explanations | | Oral explanations | Displays | Presentation | |
| | • Using results to draw simple conclusions - | | | | | |
| | Make predictions for new values | | Suggest improvements | | Raise further questions | |
| | • Related to simple scientific ideas and process - | | | | | |
| | Identify differences | | Identify changes | | Identify similarities | |
| | • Using straightforward scientific evidence to - | | | | | |
| | Answer questions | | | Support their finding | | |

# Science Curriculum Overview
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| | Earth & Space | Forces | Properties and changes of materials | Living Things and their habitats | Animals including humans |
|---|---|---|---|---|---|
| **Year 5** | Pupils will:<br>• Describe the Sun, Earth and Moon as approximately spherical bodies.<br>• Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky.<br>• Describe the movement of the Earth, and other planets, relative to the Sun in the solar system.<br>• Describe the movement of the Moon relative to the Earth.<br><br>**Focus Scientist**<br>Dr Mae Jemison | Pupils will:<br>• Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object.<br>• Identify the effects that act between moving surfaces of Friction<br>Air resistance<br>Water resistance<br>• Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect. | Pupils will:<br>• Know that some materials will dissolve in liquid to form a solution<br>• Use knowledge of -<br>Solids Liquids Gases<br>To decide how mixtures might be separated including -Filtering Sieving Evaporating<br>• Explain that some changes result in the formation of new materials.<br>• Demonstrate reversible changes through<br>Dissolving Mixing<br>Changes in state<br>• The formation of new materials is not usually reversible including changes associated with –<br>Burning<br>Action of acid on bicarbonate of soda<br>• Compare and group together everyday materials on the basis of their properties including –<br>Hardness Solubility<br>Transparency<br>Response to magnets<br>Electrical conductivity<br>Thermal conductivity<br>• Describe how to recover a substance from a solution<br>• Based on evidence from<br>Comparative tests Fair tests<br>For the particular uses of everyday materials including -<br>Metals Wood Plastic | Pupils will:<br>• Describe the life process of reproduction in some -<br>Plants Animals<br>• Describe the differences in the life cycles of -<br>A mammal An insect<br>An amphibian A bird | Pupils will:<br>• Describe the changes as humans develop to old age |

# Science Curriculum Overview
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| Year 5 | | | | | | |
|---|---|---|---|---|---|---|
| | **Working Scientifically** | | | | | |
| | Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary | | | | | |
| | Using a range of scientific equipment, with increasing accuracy and precision | | | | | |
| | Take measurements | | | Take repeat readings as appropriate | | |
| | Record data and results with increasing complexity using - | | | | | |
| | Scientific diagrams and labels | Classification keys | Tables | Scatter graphs | Bar Graph | Line graph |
| | Using test results to make predictions to set up further comparative and fair tests. | | | | | |
| | Reporting and presenting findings from enquiries including - | | | | | |
| | Conclusions | | Causal relationships | Explanations | Degree of trust in results | |
| | In written and oral forms such as | | | | | |
| | Displays | | | Other presentations | | |
| | Identifying scientific evidence that has been used to support and refute ideas or arguments | | | | | |

# Science Curriculum Overview
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| | Light and Sight | Living things and their habitats | Evolution and Inheritance | Electricity | Animals including humans |
|---|---|---|---|---|---|
| **Year 6** | Pupils will:<br>• Recognise that light appears to travel in straight lines<br>• 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.<br>• 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.<br>• Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them. | Pupils will:<br>• Describe how living things are classified into broad groups according to common observable characteristics based on similarities and differences including -<br>Plants<br>Animals<br>Micro-organisms<br>• Give reasons for classifying plants and animals based on specific characteristics.<br>**Focus Scientist**<br>Carl Linnaeus | Pupils will;<br>•Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents.<br>•Identify how animals and plants are adapted to suit their environment in different ways and that adaption may lead to evolution.<br>•Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago. | Pupils will:<br>• Associate the brightness of a lamp or the volume of the buzzer with the number and voltage of cells used in the circuit.<br>• Compare and give reasons for variations in how components function including -<br>Brightness of bulbs<br>Loudness of buzzers<br>On/off position of Switches | Pupils will:<br>• Considering the way their bodies function, recognise the impact of -<br>Diet<br>Drugs<br>• Describe the ways in which nutrients and water are transported within animals including humans.<br>• Identify and name the main parts of the human circulatory system, and describe the functions of -<br>Heart<br>Blood vessels |

# Science Curriculum Overview
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| Year 6 | | | | | | |
|---|---|---|---|---|---|---|
| | **Working Scientifically** | | | | | |
| | Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary | | | | | |
| | Using a range of scientific equipment, with increasing accuracy and precision | | | | | |
| | Take measurements | | | Take repeat readings as appropriate | | |
| | Record data and results with increasing complexity using - | | | | | |
| | Scientific diagrams and labels | Classification keys | Tables | Scatter graphs | Bar Graph | Line graph |
| | Using test results to make predictions to set up further comparative and fair tests. | | | | | |
| | Reporting and presenting findings from enquiries including - | | | | | |
| | Conclusions | Causal relationships | | Explanations | Degree of trust in results | |
| | In written and oral forms such as | | | | | |
| | Displays | | | Other presentations | | |
| | Identifying scientific evidence that has been used to support and refute ideas or arguments | | | | | |