

**@Science Curriculum Overview
2-Year Rolling Programme**

	Year 1/2	Year 1/2	Year 3/4	Year 3/4	Year 5/6	Year 5/6
	Year A	Year B	Year A	Year B	Year A	Year B
Plants	<ul style="list-style-type: none"> Identify and name a variety of common plants, including garden plants, wild plants and trees and those classified as deciduous and evergreen. Identify and describe the basic structure of a variety of common flowering plants, including roots, stem/trunk, leaves and flowers. <p>Year 1 working scientifically</p> <p>Year 2 working scientifically</p> <p>Yr 1/2 FOCUS Discovery/sorting</p>	<ul style="list-style-type: none"> Observe and describe how seeds and bulbs grow into mature plants. Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy. <p>Year 1 working scientifically</p> <p>Year 2 working scientifically</p> <p>Yr 1/2 FOCUS Discovery/sorting</p>		<ul style="list-style-type: none"> Identify and describe the functions of different parts of flowering plants: roots, stem, 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 role of flowers in the life cycle of flowering plants, including pollination, seed formation and seed dispersal. <p>Year 3 working scientifically</p> <p>Year 4 working scientifically</p> <p>Yr 3 FOCUS Predicting</p> <p>Year 4 FOCUS Methods</p>		

<p>Habitats/All living things</p>	<ul style="list-style-type: none"> • Explore and compare the differences between things that are living, that are dead and 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 micro-habitats. • 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>Year 1 working scientifically</p> <p>Year 2 working scientifically</p> <p>Yr 1/2 FOCUS Discovery/sorting</p>				<ul style="list-style-type: none"> • Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird. • Describe the life process of reproduction in some plants and animals. <p>Year 5 working scientifically</p> <p>Year 6 working scientifically</p> <p>Yr 5 FOCUS Results</p> <p>Yr 6 FOCUS Conclusions</p>	<ul style="list-style-type: none"> • Describe classification into broad groups (animals, plants, microbes) based on observable features <p>Reasons for classifying plants & animals based on specific characteristics</p> <p>Year 5 working scientifically</p> <p>Year 6 working scientifically</p> <p>Yr 5 FOCUS Results</p> <p>Yr 6 FOCUS Conclusions</p>
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<p>Animals including Humans</p>	<p>1. Identify and name a variety of common animals that are birds, fish, amphibians, reptiles, mammals and invertebrates. 2. Identify and name a variety of common animals that are carnivores, herbivores and omnivores. 3. Describe and compare the structure of a variety of common animals (birds, fish, amphibians, reptiles, mammals and invertebrates, including pets). 4. Investigate and describe the basic needs of animals, including humans, for survival (water, food and air).</p> <p>Year 1 working scientifically</p> <p>Year 2 working scientifically</p> <p>Yr 1/2 FOCUS Discovery/sorting</p>	<p>1. 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>2. Notice that animals, including humans, have offspring which grow into adults. 3. Investigate and describe the basic needs of animals, including humans, for survival (water, food and air). 4. Describe the importance for humans of exercise, eating the right amounts of different types of food and hygiene.</p> <p>Year 1 working scientifically</p> <p>Year 2 working scientifically</p> <p>Yr 1/2 FOCUS Discovery/sorting</p>	<ul style="list-style-type: none"> Identify that animals, including humans, need the right types and amounts of nutrition, that they cannot make their own food and they get nutrition from what they eat. Construct and interpret a variety of food chains, identifying producers, predators and prey. Identify that humans and some animals have skeletons and muscles for support, protection and movement. 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. <p>Year 3 working scientifically Year 4 working scientifically</p> <p>Yr 3 FOCUS Predicting</p> <p>Year 4 FOCUS Methods</p>	<ul style="list-style-type: none"> Digestive system (simple) Teeth (inc structure/function) <p>Construct food chains (producers, consumers, predators & prey)</p> <p>Year 3 working scientifically Year 4 working scientifically</p> <p>Yr 3 FOCUS Predicting Year 4 FOCUS Methods</p>		<ul style="list-style-type: none"> Describe the changes as humans develop to old age. Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood. Recognise the importance of diet, exercise, drugs and lifestyle on the way the human body functions. Describe the ways in which nutrients and water are transported within animals, including humans. <p>Year 5 working scientifically</p> <p>Year 6 working scientifically</p> <p>Yr 5 FOCUS Results</p> <p>Yr 6 FOCUS Conclusions</p>
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<p>4/Materials</p>	<ul style="list-style-type: none"> • Distinguish between an object and the material from which it is made. • Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water and rock. • Describe the simple physical properties of a variety of everyday materials. • Compare and group together a variety of everyday materials on the basis of their simple physical properties. <p>Year 1 working scientifically</p> <p>Year 2 working scientifically</p> <p>Yr 1/2 FOCUS Discovery/sorting</p>	<p>Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.</p> <ul style="list-style-type: none"> • Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick/rock, and paper/cardboard for particular uses <p>Year 1 working scientifically</p> <p>Year 2 working scientifically</p> <p>Yr 1/2 FOCUS Discovery/sorting</p>			<ul style="list-style-type: none"> • Compare/group materials based upon properties • Explain dissolving to form a solution. Recovery. Separating mixtures • Explain reasons for material uses based upon testing evidence • Demonstrate that dissolving, mixing, changes in state are reversible <p>Explain that some changes make new materials – Irreversible.</p> <p>Year 5 working scientifically Year 6 working scientifically</p> <p>Yr 5 FOCUS Results</p> <p>Yr 6 FOCUS Conclusions</p>	
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Forces and Magnets

- Compare how things move on different surfaces
 - Explore push/pull
 - Contact forces & 'distance' forces (gravity/magnetism)
 - Magnets attract / repel; two poles
- Compare/group materials with magnets

Year 3 working scientifically
Year 4 working scientifically

Yr 3 FOCUS Predicting
Year 4 FOCUS Methods

- Explain objects fall towards earth due to force of gravity
- Identify the effects of air / water resistance & friction
- Understand that some mechanisms, inc levers, pulleys & gears, allow a smaller force to have greater effect

Year 5 working scientifically

Year 6 working scientifically

Yr 5 FOCUS Results

Yr 6 FOCUS Conclusions

<p>Earth and Space</p>		<ul style="list-style-type: none"> • <i>Observe the apparent movement of the Sun during the day.</i> • Observe changes across the four seasons. • Observe and describe weather associated with the seasons and how day length varies. <p>Year 1 working scientifically</p> <p>Year 2 working scientifically</p> <p>Yr 1/2 FOCUS Discovery/sorting</p>			<ul style="list-style-type: none"> • Describe movement of earth relative to sun & planets (solar system) • Describe movement of moon relative to earth • Describe that the sun, earth, moon are spherical <p>Explain day / night & movement of sun across sky</p> <p>Year 5 working scientifically Year 6 working scientifically</p> <p>Yr 5 FOCUS Results</p> <p>Yr 6 FOCUS Conclusions</p>	
<p>Seasonal Changes</p>						

States of Matter

- 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 the temperature at which this happens in degrees Celsius ($^{\circ}\text{C}$), building on their teaching in mathematics.

- Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.

Year 3 working scientifically
Year 4 working scientifically

Yr 3 FOCUS
Predicting

Year 4 FOCUS Methods

Sound

- Identify how sounds are made
- How sounds travel through medium to ear (vibration)
- Explain sound travels away from source. Gets fainter.
- Patterns in pitch & object, Patterns in volume & vibration

Year 3 working scientifically

Year 4 working scientifically

Yr 3 FOCUS

Predicting

Year 4 FOCUS Methods

Electricity

- Identify common appliances that run on electricity.
- Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers.
- Identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery.
- Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit.
- Recognise some common conductors and insulators, and associate metals with being good conductors.

Year 3 working scientifically
Year 4 working scientifically

Yr 3 FOCUS
Predicting

Year 4 FOCUS Methods

- Explain variation in brightness, loudness with number & voltage of cells used.
- Explain variations in component function (brightness, loudness, on/off)
Recognise symbols in circuit diagram

Year 5 working scientifically
Year 6 working scientifically

Yr 5 FOCUS Results

Yr 6 FOCUS
Conclusions

Rocks and Fossils				<ul style="list-style-type: none">• Compare/group on physical properties• Fossil formation (trapped in rock) Recognise soils are made from rocks & organic matter Year 3 working scientifically Year 4 working scientifically Yr 3 FOCUS Predicting Year 4 FOCUS Methods		
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Light

- Recognise need light to see things; dark is absence of light
- Light can be reflected
- Light from sun can be dangerous to eyes
- Shadows (light blocked)
Patterns in the size of shadow

Year 3 working scientifically
Year 4 working scientifically

Yr 3 FOCUS Predicting
Year 4 FOCUS Methods

- Understand 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 eyes.
- Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them, and to predict the size of shadows when the position of the light source changes.
- 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.

Year 5 working scientifically

Year 6 working scientifically

Yr 5 FOCUS Results

Yr 6 FOCUS Conclusions

<p>Evolution and Inheritance</p>						<ul style="list-style-type: none"> • Recognise living things change over time (fossil evidence) • Recognise offspring may vary / non-identical to parents <p>identify how adaptation of animals and plants leads to evolution</p> <p>Year 5 working scientifically Year 6 working scientifically</p> <p>Yr 5 FOCUS Results</p> <p>Yr 6 FOCUS Conclusions</p>
<p>Sex and Relationships</p>						<p>Understand and describe changes as humans develop to old age (inc puberty)</p> <p>Year 5 working scientifically Year 6 working scientifically</p> <p>Yr 5 FOCUS Results</p> <p>Yr 6 FOCUS Conclusions</p>

<p>Working Scientifically</p>	<p>Suggest what might happen Ask simple questions and recognise they can be answered in different ways. Use simple equipment. Notice risk and list some common dangers Perform simple tests. Discover and sort Describe changes Use observations to answer questions Gather and record data. I measure in non-standard & compare e.g. heavier/lighter</p>	<p>Ask simple questions and recognise they can be answered in different ways.. Using scientific language. Use simple equipment and observe including changes over time. Communicate ideas in a variety of ways. Perform simple comparative tests. Identify, group and classify. Using observations suggest answers to questions noticing similarities, /differences and patterns. Gather and record data to help answer questions including secondary resources. Describe simple features and patterns in data and charts I describe changes that have happened Suggest different ways to do things with help</p>	<p>I predict cause and effect Predict risk and act upon safety suggestions Ask relevant questions and use different types of scientific enquiry to answer Set up simple practical enquiries, comparative and fair tests. Make systematic and careful observations, take accurate measurements using standard units. Use a range of equipment including thermometers and data loggers. Gather, record, classify and present data in a variety of ways Record findings using simple scientific language, drawings, labelled diagrams, bar charts, keys and tables. Report on findings using written or oral or display or presentation Draw simple conclusions and make suggestions for improvements. Identify differences, similarities or changes related to simple scientific ideas or processes. Use scientific evidence to support findings or answer questions</p>	<p>Ask relevant questions and use different types of scientific enquiries to answer them Set up simple enquiries and use a fair test. Predict a trend Make systematic and careful observations, take accurate measurements using standard units. I design and write a simple ordered method Select suitable equipment. Predict risk and work safely Use a range of equipment including thermometers and data loggers. Gather, record and present data in a variety of ways to help answer a question Record finding using scientific language, bar charts, drawings and keys Report on findings using written or oral or display or presentation of results and conclusion. Draw simple conclusions and suggest improvements. Identify differences, similarities or changes related to simple scientific ideas or processes. Use scientific evidence to support findings or answer questions Describe trends using science to explain. Suggest sensible improvements to my method.</p>	<p>Plan different kinds of scientific enquiries to answer questions controlling variables where necessary Take measurements using a variety of equipment with increasing accuracy. Record data of increasing complexity using diagrams, keys, tables and graphs. Use test results to make predictions and set up further fair tests. Report and present findings in a variety of ways eg diagrams, written conclusions, oral and displays. Identify scientific evidence that has been used to refute or support ideas and arguments</p>	<p>Plan different kinds of scientific enquiries to answer questions controlling variables where necessary Take measurements using a variety of equipment, with increasing accuracy and repeat when appropriate. Record data of increasing complexity using diagrams, keys, tables and graphs. Use test results to make predictions and set up further fair tests. Report and present findings in a variety of ways eg diagrams, written conclusions, oral and displays. Identify scientific evidence that has been used to refute or support ideas and arguments Describe and evaluate their own and other peoples scientific ideas related to topics in the national curriculum. Group and classify things and recognise patterns Find things out using a variety of secondary resources and information Use appropriate scientific language and ideas from the national curriculum to to explain, evaluate and communicate their findings</p>
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