



Science at Yardley Gobion CE Primary School



Yardley Gobion Curriculum Drivers

Inspired – children will be taught about scientific discoveries in the past. They will consider how these discoveries have changed the world today. Learning about significant **STEM figures, such as Helen Sharman (the first British astronaut to visit the MIR space station)** will enthuse the children.

Ambitious – technical vocabulary will be shared from a young age. Children be expected to know and use the language accurately and work like a scientist.

Knowledgeable – knowledge will be revisited and tested regularly. Children need to know technical scientific knowledge in order to understand and process some of the more abstract concepts. Learning from the previous unit/term will be referenced so that children can build on existing understanding.

Enquiring – children will experience and observe phenomena. Children will be encouraged to recognise patterns and ask their own questions. They will work scientifically when conducting experiments to help them understand more about a process or observation. The more they learn, the more questions they'll have!

Confident – learning will be fun and provide children with the skills to understand the world scientifically. There will be a lot of practical, hands-on learning that will involve the children actively learning and even getting messy. They will be stimulated by their discoveries and the implications of their results.



Sequencing of Content

Units are sequenced so that knowledge and understanding builds on previous units.

Prior learning is referenced at the start of new units so that foundations of learning are used.

Key concepts are interleaved throughout the curriculum so that they are regularly revisited.



Big ideas

We ensure that children know and understand 'big ideas' in Chemistry, Physics, Biology and Earth Science e.g.

- Physics- The universe follows unbreakable rules that are all about forces, energy and matter.
- Chemistry - Matter can change if the arrangement of these building blocks changes.



Deepening Concepts

Concepts are deepened over time as they are referred to throughout learning journeys.

Links are made throughout the year but also between year groups.

Working scientifically is focused on every year with regular experiments and investigations to test a hypothesis.



Retrieval Practice

Children take part in regular retrieval practice activities.

Use of Knowledge mats supports key learning.

Remembering information and knowledge is celebrated and is part of the YGPS culture.



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	Key Stage 1	Lower Key Stage 2	Upper Key Stage 2
Year A	<p><u>Amazing Me!</u> Find out about and describe the basic needs of animals, including humans, for survival (water, food and air)</p> <p><u>People & their Pets</u></p> <ul style="list-style-type: none"> - identifying and naming common animals and comparing their structure. -Identify parts of the human body and 5 senses. 	<p><u>Habitat helpers</u> Recognise that environments can change and that this can sometimes pose dangers to living things</p> <p><u>The Circle of Life</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</p>	<p><u>Illustrating Life-cycles</u> The differences in the life cycles of a mammal, an amphibian, an insect and a bird. The life process of reproduction in plants and animals. Describing the life changes as humans develop to old age. Describe how living things are classified</p> <p><u>Material Consultants</u> Compare and group together everyday materials Materials, which dissolve in liquid to form a solution, and recovering a substance from a solution. Use knowledge of solids, liquids and gases to decide how mixtures might be separated,</p>
	<p><u>Food Chains</u> 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><u>Wild Weather – Light & Shadow</u> Observe and describe weather associated with the seasons and how day length varies</p>	<p><u>This Planet Rocks</u> Comparing and grouping different kinds of rocks and describe how fossils are made. Recognise how soils are made.</p> <p><u>Magnetic Fun & Games</u> Compare contact forces and non- contact forces. Describe magnets and observe how they attract/repel each other and alternate materials.</p>	<p><u>The Human Species</u> - 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</p> <p><u>Medical Manoeuvres</u> Describe the ways in which nutrients and water are transported within animals, including humans.</p>
	<p><u>Brilliant Builders</u> Distinguish between an object and the material from which it is made</p> <p><u>Exploring changes</u> Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching</p>	<p><u>A Feast of Flowers, Fruits & Seeds</u> Explore and use classification keys to help group, identify and name a variety of living things</p> <p><u>What's the Matter?</u> 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</p>	<p><u>Special Effects Materials</u> - demonstrate that dissolving, mixing and changes of state are reversible changes. Compare to irreversible changes.</p> <p><u>Welcome to Forceland</u> . gravity and the effects of air resistance, water resistance and friction, that act between moving surfaces.</p>



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	Key Stage 1	Lower Key Stage 2	Upper Key Stage 2
Year B	<p><u>Weather Art – Light & Shadow</u></p> <p><u>Wild & Wonderful Creatures</u> explore and compare the differences between things that are living, dead, and things that have never been alive. - Habitats and adaptation. - Exploring the food chain.</p>	<p><u>Fit for Success</u> Nutrition and ways of getting this. Skeletons and muscles – who has them and why? Why we need light, how it is reflected and how we need to protect ourselves from dangerous light (sun). <u>Shining the Light</u> 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><u>Space</u> Describe the movement of the Earth, and other planets, relative to the Sun Describe the movement of the Moon relative to the Earth <u>Electric Art</u> 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><u>Growing Things</u> identifying common wild and garden plants and their structures.</p> <p><u>Art & Nature</u></p>	<p><u>Greatly Green Growers</u> 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) <u>A World of living things</u> Functions of different parts of flowering plants and the requirements of plants for life and growth including how water is transported and the life cycle.</p>	<p><u>Theatre Lighting Technicians</u> 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 <u>The Classification Code</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</p>
	<p><u>Habitats & Homes</u> Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals</p> <p><u>Brilliant Builders</u> Distinguish between an object and the material from which it is made</p>	<p><u>Electric Personalities</u> -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><u>Sounds Spectacular</u> Identify how sounds are made, associating some of them with something vibrating Recognise that vibrations from sounds travel through a medium to the ear</p>	<p><u>Survival of the Fittest</u> - How living things have changed over time (link to fossils). - Living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents. - How animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution. <u>Sensational Science</u></p>