



# Shepherdswell Academy

## Science Curriculum - Overview



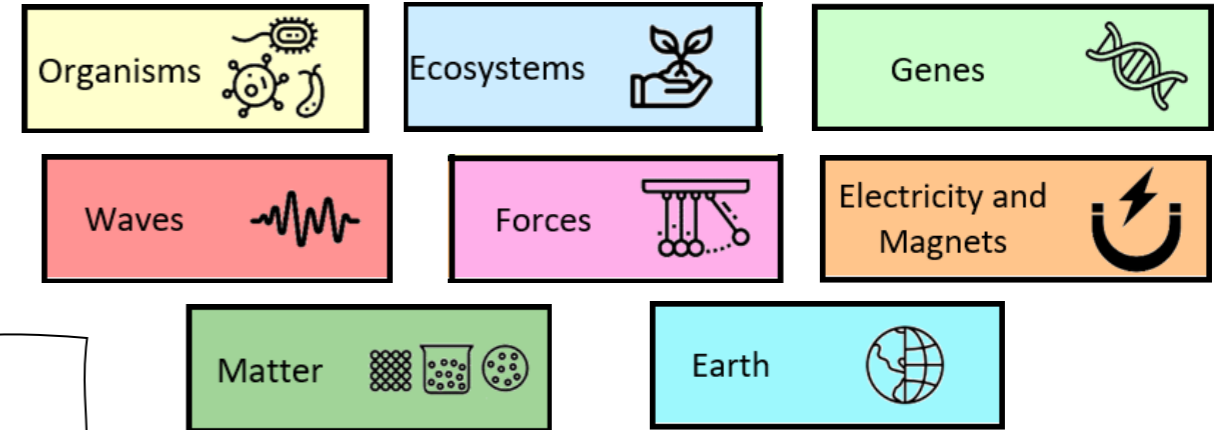
### Why Teach Science?

We believe that Science will allow students to make informed decisions and choices throughout their lives. By fostering and maintaining a curiosity throughout their education, our students will be able to:

- Understand how the world around them works
- Adapt to a life in a modern world
- Experience and share the cultural capital that Science provides
- Show resilience when solving problems
- Decipher fact from fiction by learning how to look for reliable sources of information.

### The 8 Big Ideas of the Science Curriculum

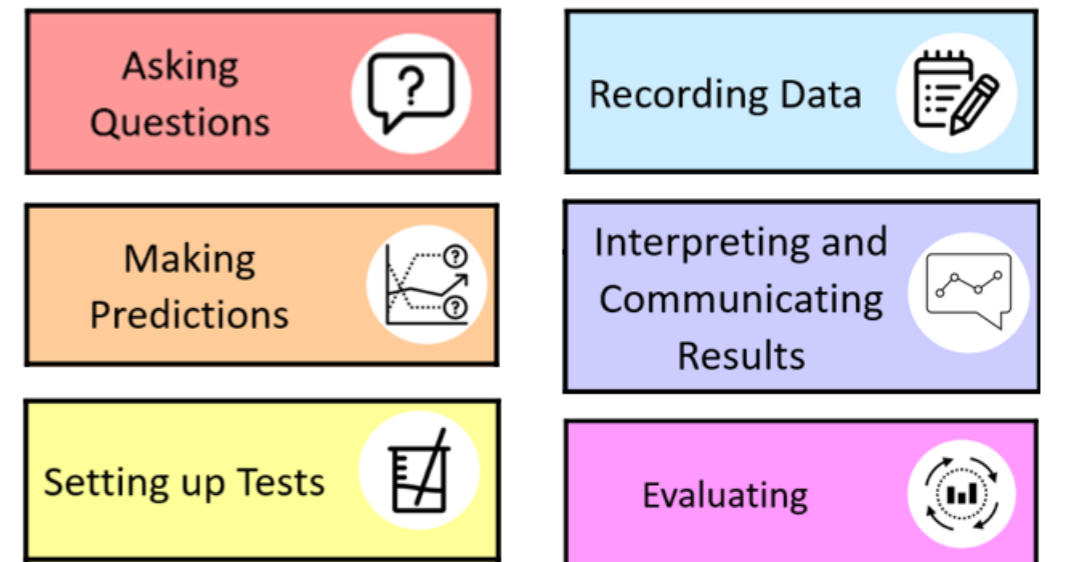
Curriculum maps detail the sequencing of substantive knowledge from the disciplines of biology, chemistry and physics to enable pupils to build schemata of important concepts over time through eight 'big ideas'



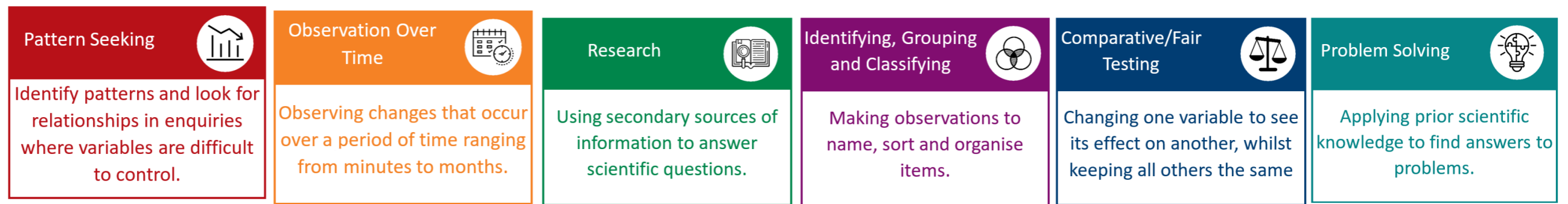
### The Curriculum Overview for Years 1-2

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Autumn 1	Animals Including Humans (About Me) <i>Organisms</i>	Living Things and Their Habitats <i>Organisms, Ecosystems</i>	Rocks <i>Earth</i>	States of Matter <i>Matter</i>	Properties of Materials <i>Matter</i>	Light <i>Waves</i>
Autumn 2	Everyday Materials (Exploring) <i>Matter</i>	Animals Including Humans (Growth) <i>Genes</i>	Animals Including Humans (What Makes us) <i>Organisms</i>	Animals Including Humans (Food and Digestion) <i>Organisms, Ecosystems</i>	Changes of Materials <i>Matter</i>	Electricity <i>Electricity and Magnets</i>
Spring 1	Everyday Materials (Uses) <i>Matter</i>	Plants <i>Ecosystems</i>	Forces and Magnets <i>Electricity and Magnets, Forces</i>	Living Things and Their Habitats (Nature and the Environment) <i>Ecosystems</i>	Animals Including Humans (The Human Life Cycle) <i>Genes</i>	Animals Including Humans (Blood and Transportation) <i>Organisms</i>
Spring 2	Plants <i>Ecosystems</i>	Everyday Materials <i>Matter</i>	Exploring the World of Plants <i>Ecosystems</i>	Living Things and Their Habitats (Classifying) <i>Genes</i>	Studying Living Things <i>Genes</i>	Animals Including Humans (The Heart and Health) <i>Organisms</i>
Summer 1	Animals Including Humans (About Animals) <i>Organisms, Ecosystems</i>	Animals Including Humans (Diet and Health) <i>Ecosystems</i>	Plants (Life Cycles) <i>Ecosystems</i>	Sound <i>Waves</i>	Earth and Space <i>Earth</i>	Evolution and Inheritance <i>Genes</i>
Summer 2	Seasonal Change <i>Earth</i>	Living Things and Their Habitats (Habitats around the World) <i>Ecosystems</i>	Light <i>Waves</i>	Electricity <i>Electricity and Magnets</i>	Forces <i>Forces</i>	Living Things and Their habitats <i>Genes</i>

### Scientific Enquiry Skills we Develop



### Scientific Enquiry Approaches we use to develop Disciplinary Knowledge





# Shepherdswell Academy

## Science Curriculum Map – EYFS into Key Stage 1



<b>Science Big Ideas</b>	<b>Earth</b>	<b>Matter</b>	<b>Organisms</b>	<b>Ecosystems</b>	<b>Genes</b>
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	EYFS		Year 1	Year 2	
<p><b>Early Learning Goal: The Natural World</b> Children at the expected level of development will:</p> <ul style="list-style-type: none"> <li>– Explore the natural world around them, making observations and drawing pictures of animals and plants;</li> <li>– 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;</li> <li>– Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.</li> </ul> <p><b>Reception Understanding the World Milestones</b> <b>Milestone 1</b></p> <ul style="list-style-type: none"> <li>• Notices detailed features of objects in their environment</li> <li>• Can talk about some of the things they have observed such as plants, animals, natural and found objects</li> <li>• Enjoys playing with small world reconstructions, building on first-hand experiences, e.g. visiting farms, garages, train tracks, walking by river or lake</li> </ul> <p><b>Milestone 2</b></p> <ul style="list-style-type: none"> <li>• Shows care and concern for living things and the environment</li> </ul> <p><b>Milestone 3</b></p> <ul style="list-style-type: none"> <li>• Explore the natural world around them, making observations and drawing pictures of animals and plants;</li> <li>• Comments and asks questions about aspects of their familiar world such as the place where they live or the natural world</li> <li>• Developing an understanding of growth, decay and changes over time</li> </ul> <p><b>Milestone 4</b></p> <ul style="list-style-type: none"> <li>• 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;</li> <li>• Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.</li> <li>• Begin to understand the effect their behaviour can have on the environment</li> </ul>	<p><b>Typical learning experiences include:</b></p> <p><u>Everyday materials</u></p> <ul style="list-style-type: none"> <li>• Exploring a variety of materials and their characteristics.</li> <li>• Joining materials together</li> <li>• Investigating properties – experimenting with floating and sinking, magnetic properties, strength, natural vs man made.</li> <li>• Investigating effectiveness of materials e.g making a paper plane made from different materials like a paper towel, or card.</li> <li>• Recycling and reusing materials. Junk modelling areas as well as explicit teaching.</li> </ul> <p><u>Plants</u></p> <ul style="list-style-type: none"> <li>• Categorising different types.</li> <li>• Naming common plants and different parts e.g petals, stem, leaves, roots.</li> <li>• Exploring natural environment.</li> <li>• Growing plants eg cress, beans, potatoes, sunflowers.</li> <li>• Caring for plants.</li> </ul> <p><u>Animals including humans</u></p> <ul style="list-style-type: none"> <li>• Taking care of our bodies, teeth, body, healthy food, sun safety, enough sleep etc. Being able to discuss how to keep healthy.</li> <li>• Identifying and naming and grouping different animals. Linking to habitats and environments.</li> </ul> <p><u>Seasonal Changes</u></p> <ul style="list-style-type: none"> <li>• Observing changes in the environment eg keeping a year long record, providing context for seasonal changes.</li> <li>• Observe changes in weather. Be able to name different types of weather e.g fog.</li> <li>• Discussions about why we wear types of clothing at different types of year.</li> </ul>	<p>Autumn 1</p>	<p><b>Animals Including Humans (About Me)</b></p> <ul style="list-style-type: none"> <li>• Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.</li> </ul>	<p><b>Living Things and Their Habitats</b></p> <ul style="list-style-type: none"> <li>• Explore and compare the differences between things that are living, dead, and things that have never been alive.</li> <li>• 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.</li> <li>• Identify and name a variety of plants and animals in their habitats, including microhabitats.</li> <li>• 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.</li> </ul>	
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	<p>Spring 1</p>	<p><u>Plants</u></p> <ul style="list-style-type: none"> <li>• Categorising different types.</li> <li>• Naming common plants and different parts e.g petals, stem, leaves, roots.</li> <li>• Exploring natural environment.</li> <li>• Growing plants eg cress, beans, potatoes, sunflowers.</li> <li>• Caring for plants.</li> </ul> <p><u>Animals including humans</u></p> <ul style="list-style-type: none"> <li>• Taking care of our bodies, teeth, body, healthy food, sun safety, enough sleep etc. Being able to discuss how to keep healthy.</li> <li>• Identifying and naming and grouping different animals. Linking to habitats and environments.</li> </ul> <p><u>Seasonal Changes</u></p> <ul style="list-style-type: none"> <li>• Observing changes in the environment eg keeping a year long record, providing context for seasonal changes.</li> <li>• Observe changes in weather. Be able to name different types of weather e.g fog.</li> <li>• Discussions about why we wear types of clothing at different types of year.</li> </ul>	<p>Spring 1</p>	<p><b>Plants</b></p> <ul style="list-style-type: none"> <li>• Observe and describe how seeds and bulbs grow into mature plants</li> <li>• Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.</li> </ul>	<p><b>Plants</b></p> <ul style="list-style-type: none"> <li>• Observe and describe how seeds and bulbs grow into mature plants</li> <li>• Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.</li> </ul>
	<p>Spring 2</p>	<p><u>Plants</u></p> <ul style="list-style-type: none"> <li>• Categorising different types.</li> <li>• Naming common plants and different parts e.g petals, stem, leaves, roots.</li> <li>• Exploring natural environment.</li> <li>• Growing plants eg cress, beans, potatoes, sunflowers.</li> <li>• Caring for plants.</li> </ul> <p><u>Animals including humans</u></p> <ul style="list-style-type: none"> <li>• Taking care of our bodies, teeth, body, healthy food, sun safety, enough sleep etc. Being able to discuss how to keep healthy.</li> <li>• Identifying and naming and grouping different animals. Linking to habitats and environments.</li> </ul> <p><u>Seasonal Changes</u></p> <ul style="list-style-type: none"> <li>• Observing changes in the environment eg keeping a year long record, providing context for seasonal changes.</li> <li>• Observe changes in weather. Be able to name different types of weather e.g fog.</li> <li>• Discussions about why we wear types of clothing at different types of year.</li> </ul>	<p>Spring 2</p>	<p><b>Plants</b></p> <ul style="list-style-type: none"> <li>• Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees.</li> <li>• Identify and describe the basic structure of a variety of common flowering plants, including trees.</li> </ul>	<p><b>Everyday Materials</b></p> <ul style="list-style-type: none"> <li>• Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses.</li> <li>• Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.</li> </ul>
	<p>Summer 1</p>	<p><u>Plants</u></p> <ul style="list-style-type: none"> <li>• Categorising different types.</li> <li>• Naming common plants and different parts e.g petals, stem, leaves, roots.</li> <li>• Exploring natural environment.</li> <li>• Growing plants eg cress, beans, potatoes, sunflowers.</li> <li>• Caring for plants.</li> </ul> <p><u>Animals including humans</u></p> <ul style="list-style-type: none"> <li>• Taking care of our bodies, teeth, body, healthy food, sun safety, enough sleep etc. Being able to discuss how to keep healthy.</li> <li>• Identifying and naming and grouping different animals. Linking to habitats and environments.</li> </ul> <p><u>Seasonal Changes</u></p> <ul style="list-style-type: none"> <li>• Observing changes in the environment eg keeping a year long record, providing context for seasonal changes.</li> <li>• Observe changes in weather. Be able to name different types of weather e.g fog.</li> <li>• Discussions about why we wear types of clothing at different types of year.</li> </ul>	<p>Summer 1</p>	<p><b>Animals Including Humans (About Animals)</b></p> <ul style="list-style-type: none"> <li>• Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals.</li> <li>• Identify and name a variety of common animals that are carnivores, herbivores and omnivores.</li> <li>• Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets)</li> </ul>	<p><b>Animals Including Humans (Diet and Health)</b></p> <ul style="list-style-type: none"> <li>• Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.</li> </ul>
	<p>Summer 2</p>	<p><u>Plants</u></p> <ul style="list-style-type: none"> <li>• Categorising different types.</li> <li>• Naming common plants and different parts e.g petals, stem, leaves, roots.</li> <li>• Exploring natural environment.</li> <li>• Growing plants eg cress, beans, potatoes, sunflowers.</li> <li>• Caring for plants.</li> </ul> <p><u>Animals including humans</u></p> <ul style="list-style-type: none"> <li>• Taking care of our bodies, teeth, body, healthy food, sun safety, enough sleep etc. Being able to discuss how to keep healthy.</li> <li>• Identifying and naming and grouping different animals. Linking to habitats and environments.</li> </ul> <p><u>Seasonal Changes</u></p> <ul style="list-style-type: none"> <li>• Observing changes in the environment eg keeping a year long record, providing context for seasonal changes.</li> <li>• Observe changes in weather. Be able to name different types of weather e.g fog.</li> <li>• Discussions about why we wear types of clothing at different types of year.</li> </ul>	<p>Summer 2</p>	<p><b>Seasonal Changes</b></p> <ul style="list-style-type: none"> <li>• Observe changes across the four seasons.</li> <li>• Observe and describe weather associated with the seasons and how day length varies.</li> </ul>	<p><b>Living Things and Their Habitats (Habitats Around the World)</b></p> <ul style="list-style-type: none"> <li>• 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.</li> <li>• Identify and name a variety of plants and animals in their habitats, including microhabitats.</li> <li>• 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.</li> </ul>

**Every child deserves to be the best they can be**