



## Foxes Class Medium Term Planning for Science Summer Term 2024

### Topic: Ancient Greek and The Olympics

#### States of Matter

##### Pupils should be taught to:

- 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 or research the temperature at which this happens in degrees Celsius ( $^{\circ}\text{C}$ );
- identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.

This topic will be continually developed throughout the curriculum every day. My classroom and the school building will be accessed daily and children will be supported to make transitions.

There will be specific planned opportunities to support the children's progress and may be altered to suit the needs of the children during the term.

##### Key vocabulary:

Solid Liquid Gas Gases Water Cycle Particles State Materials Properties Carbon Dioxide Weight Mass

<p><b><u>Lesson 1 - Link it</u></b> <b>Solid, Liquid or a Gas.</b></p> <p>Match states of matter to the correct properties.</p> <p>To compare and group materials together, according to whether they are solids, liquids or gases by sorting and describing materials into solids, liquids and gases. I can sort and describe materials.</p>	<p><b><u>Lesson 2 - Link it.</u></b> <b>Investigating Gases</b></p> <p>Explore the states of fizzy pop in a bottle - experiment.</p> <p>To compare and group materials together, according to whether they are solids, liquids or gases by investigating gases and their uses. I can investigate gases and explain their properties.</p>	<p><b><u>Lesson 3 - Learn it</u></b> <b>Heating and Cooling</b></p> <p>Introduce the context for the investigation using the Lesson Presentation. Model the investigation by placing a square of chocolate in three different foil tins, and then floating the tins on trays of water, each of which has a different temperature. State that they will observe how long it takes the chocolate at each temperature to melt.</p> <p>To 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 (<math>^{\circ}C</math>) by investigating how heating and cooling can change a material's state.</p> <ul style="list-style-type: none"> <li>• I can investigate materials as they change state.</li> </ul>	<p><b><u>Lesson 4 - Learn it</u></b> <b>Wonderful Water</b></p> <p>Ice Cube Investigation, Reversing Changes and Salt and Ice: Children identify the different states of water in each activity.</p> <p>To 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 (<math>^{\circ}C</math>) by exploring how water can change its state to a solid, liquid or a gas. I can explore how water changes state.</p>	<p><b><u>Lesson 5 - Check it</u></b> <b>Evaporation Investigation</b></p> <p>Introduce the investigation. Ensure that children understand that when the towels dry, the water will evaporate from them. Describe the equipment the children will have access to. Encourage the children to think about the points on the Lesson Presentation. If necessary, point out the measuring jug and suggest they pour the same amount of water over each towel, or soak each towel in the same amount of water. You may want to point out the scales, and suggest they weigh the wet towels at the start, and then weigh them again at the end. The difference between the two weights will show how much water has evaporated from each towel.</p> <p>To associate the rate of evaporation with temperature by investigating the effect of temperature on drying washing.</p>	<p><b><u>Lesson 6 - Know it</u></b> <b>The Water Cycle</b></p> <p>Identify the four stage of the water cycle - Evaporation, condensation, precipitation, collection</p> <p>Work in groups to make mini water worlds. To identify the part played by evaporation and condensation in the water cycle by creating a model of the water cycle. I can identify and describe the different stages of the water cycle.</p>
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				<p>To make systematic, careful and accurate observations and measurements and report on findings from enquiries by displaying results and conclusions by investigating the effect of temperature on drying washing.</p> <ul style="list-style-type: none"> <li>• I can investigate how water evaporates.</li> </ul>	
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<b>Substantive Knowledge (Content)</b>			<b>Disciplinary Knowledge (Skills)</b>		
<p><b><u>KS1 - Science</u></b></p> <p>Asking simple questions and recognising that they can be answered in different ways.</p> <p>Explore the world around them, leading them to ask some simple scientific questions about how and why things happen.</p> <p>Experience different types of scientific enquiries, including practical activities.</p> <p><b><u>KS2 - Science</u></b></p> <p>Start to raise their own relevant questions about the world around them in response to a range of scientific experiences;</p>			<p><b><u>EYFS - C&amp;L - Listening, Attention and Understanding</u></b></p> <p>Make comments about what they have heard and ask questions to clarify their understanding.</p> <p><b><u>EYFS - UTW - The Natural World</u></b></p> <p>Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.</p> <p><b><u>KS1 - Science</u></b></p> <p><b>Asking Questions, children can:</b></p> <ul style="list-style-type: none"> <li><b>a</b> explore the world around them, leading them to ask some simple scientific questions about how and why things happen;</li> <li><b>b</b> begin to recognise ways in which they might answer scientific questions;</li> <li><b>c</b> ask people questions and use simple secondary sources to find answers;</li> <li><b>d</b> experience different types of scientific enquiries, including practical activities;</li> <li><b>e</b> talk about the aim of scientific tests they are working on.</li> </ul> <p><b>Identifying, Classifying, Recording and Presenting Data</b></p> <ul style="list-style-type: none"> <li><b>a</b> use simple features to compare objects, materials and living things;</li> <li><b>b</b> decide how to sort and classify objects into simple groups with some help;</li> <li><b>c</b> record and communicate findings in a range of ways with support;</li> </ul>		

Start to make their own decisions about the most appropriate type of scientific enquiry they might use to answer questions.

### **Using Scientific Evidence and Secondary Sources of Information**

Identifying differences, similarities or changes related to simple scientific ideas and processes.

Using straightforward scientific evidence to answer questions or to support their findings.

#### **Children can:**

**a** make links between their own science results and other scientific evidence;

**b** use straightforward scientific evidence to answer questions or support their findings;

**c** identify similarities, differences, patterns and changes relating to simple scientific ideas and processes;

**d** recognise when and how secondary sources might help them to answer questions that cannot be answered through practical investigations

**d** sort, group, gather and record data in a variety of ways to help in answering questions such as in simple sorting diagrams, pictograms, tally charts, block diagrams and simple tables.

#### **KS2 - Science**

• Ask relevant questions.

• Gather, record, classify and present data in a variety of ways to help in answering questions.

• Record findings using simple scientific language, drawings, labelled diagrams, bar charts and tables.

• Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.

#### **Sound**

Pupils should be taught to:

• identify how sounds are made, associating some of them with something vibrating;

• recognise that vibrations from sounds travel through a medium to the ear;

• find patterns between the pitch of a sound and features of the object that produced it;

• find patterns between the volume of a sound and the strength of the vibrations that produced it;

• recognise that sounds get fainter as the distance from the sound source increases.

### **Progression of Learning**

'Link It'	'Learn It'	'Check It'	'Show It'	'Know It'
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What do we know about sound and how it is produced.	To develop our prior knowledge and relate new learning to known knowledge.	Research information to clarify what we have learned so far.	Draw conclusions. Develop fact files about sound.	Apply learned knowledge to generalised activities. Apply learned knowledge to others.
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