

***Our Intent is: To develop inquisitive children who are excited about investigating with curiosity, "How can scientific enquiry explain the world?" Exploring answers by gathering and analysing evidence.***



## Forton Primary School Science

Clougha Class  
Autumn 1  
Year A

### **N.C. LINKS:**

**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.

**Key Concept: States of Matter**

**Key Question: What is happening when scientists say the ice caps are melting?**

**How can some parts of the world have too much water and another country not have enough?**

**Unit Overview:**

Solids, liquids, gases and their properties.

Evaporation, condensation.

The effect of varying temperatures.

**Vocabulary:**

States of matter, solids, liquids, gases, water vapour, melt, freeze, evaporate, condense, precipitation.

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<p><b>New Knowledge Progression:</b></p> <ul style="list-style-type: none"><li>• Compare and group materials together, according to whether they are solids, liquids or gases.</li><li>• 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 (°C).</li><li>• Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.</li><li>• Solids, liquids and gases can be identified by their observable properties.</li><li>• Solids have a fixed size and shape (the size and shape can be changed but it remains the same after the action).</li><li>• Liquids can pour and take the shape of the container in which they are put.</li><li>• Liquids form a pool not a pile.</li><li>• Solids in the form of powders can pour as if they were liquids but make a pile not a pool.</li><li>• Gases fill the container in which they are put.</li><li>• Gases escape from an unsealed container.</li><li>• Gases can be made smaller by squeezing/pressure.</li></ul>	<p><b>Building on Prior learning KS1:</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, water, 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 (applying a force).</li><li>• Some materials can be found naturally; others have to be made.</li></ul> <p><b>Building on Prior learning when B follow A:</b></p> <ul style="list-style-type: none"><li>• Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties.</li><li>• Describe in simple terms how fossils are formed when things that have lived are trapped within rock.</li><li>• Recognise that soils are made from rocks and organic matter</li><li>• Recognise that rocks and soils can feel and look different.</li><li>• Recognise that rocks and soils can be different in different places/environments.</li></ul>

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- Liquids and gases can flow.

### **Key Skills (Disciplinary)**

- Observe and record relationships between structure and function or between different parts of a processes.
- Observe and record changes / stages over time.
- Record similarities as well as differences and / or changes related to simple scientific ideas or processes or more complex groups of objects / living things / events

*(e.g. evaporation and condensation, different food chains, different electrical circuits).*

- Ask / raise their own relevant questions with increasing confidence and independence that can be explored, observed, tested or investigated further.
- Ask questions such as ‘What will happen if...?’ or ‘What if we changed...?’.
- Choose / select a relevant question that can be answered [by research or experiment / test].
- Make a visual representation or a model of something to represent something they have seen or a process that is difficult to see.
- Build on / add to someone else’s idea to improve a plan.

### **Sequence of Lessons:**

1. LO – To compare and group materials according to whether they are solids, liquids or gases.
2. LO – To investigate gases and explain their properties.
3. LO – To investigate materials as they change state.
4. LO – To explain how water changes state.
5. LO – To investigate how water evaporates.
6. LO – To identify and describe the different stages of the water cycle.

### **Enhancements:**

The Science and Industry Museum.

### **End of Unit Outcome:**

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Create a PowerPoint on states of matter in groups and present them to the rest of the class.