No Limits
To Learning!

Topic Title: Wild Weather and Wizards **Year Group**: 4 **Academic Year**: 2021-2022

Science Intent:

Children will learn about the differences between solids, liquids and gases, classifying objects and identifying their properties. The children will work scientifically and collaboratively to investigate the weight of a gas. They will explore in-depth how water changes state, exploring melting, freezing, condensing and evaporation.

Prior Scientific Learning/Linked Topics:	**Literacy Links (including texts/media used):**	**Maths Links:**		
Scientific Knowledge	**Working Scientifically**			
	Observing and Measuring over time	**Identifying, classifying and grouping**	**Comparative and fair testing (controlled investigations)**	**Research**
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 (°C) Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature	**Questioning and enquiry** **Planning** Ask relevant questions and use different types of scientific enquiries to answer them. Raise their own questions about the world around them. Make some decisions about which types of enquiry will be the best way of answering questions. **Observing + measuring Pattern seeking** Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including **thermometers** and data loggers. Begin to look for naturally occurring patterns and relationships and decide what data to	**Identifying, grouping and classifying** Identify differences, similarities or changes related to simple scientific ideas and processes. Talk about criteria for grouping, sorting and classifying and use simple keys. Compare and group according to behaviour or properties, based on testing.	**Investigating** Set up simple practical enquiries, comparative and fair tests. Recognise when a simple fair test is necessary and help to decide how to set it up. Can think of more than one variable factor.	Begin to recognise when and how secondary sources might help to answer questions that cannot be answered through practical investigations.

	collect to identify them. Help to make decisions about what observations to make, how long to make them for and the type of simple equipment that might be used. Learn to use new equipment appropriately (eg data loggers). Can see a pattern in my results. Can choose from a selection of equipment. **Recording and reporting findings** 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, keys, bar charts and tables. Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. Use notes, simple tables and standard units and help to decide how to record and analyse their data. Can record results in tables and bar charts. **Conclusions** Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions. Use straightforward scientific evidence to answer questions or to support their findings.			

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	With help, look for changes, patterns, similarities and differences in their data in order to draw simple conclusions and answer questions. With support, identify new questions arising from the data, make new predictions and find ways of improving what they have already done.			

Content:

- **Start – States of matter Concept cartoon to assess prior learning and starting point.**
- **To compare and group materials together according to whether they are solids or liquids - Identifying grouping and classifying - Interpreting and communicating results**
- **To identify and explore the properties of gases. - Identifying grouping and classifying - Interpreting and communicating results**
- **To observe that materials change state when they are heated or cooled.** – Carousel of melting and heating materials – ice/ water, butter, wax, **.- Research – Asking Questions**
- **How to use a thermometer Observation over time – Observing and Measuring**
- **To research the temperature in degrees Celsius (°C) at which materials change state. Chocolate - Observation over time – Observing and Measuring**
- **To understand the process of evaporation. - Observation over time – Observing and Measuring**
- **To understand the process of condensation. - Observation over time – Recording Data**
- **To identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.- Research - Recording Data**

Stunning Start/Marvellous Middle/Fabulous Finish:	**OAA/Trips/Visits/Visitors:**
To be revealed	tbc