

Inspiring and enabling our school community to live life to the full



YEAR 4 SCIENCE

Changes of State

Our Science curriculum aims to enthuse children and help them to be curious and develop a sense of excitement about the world. Through a range of teaching, learning and extra-curricular opportunities, children will develop scientific knowledge and conceptual understanding to recognise the uses and implications of Science, today and for the future. We encourage children to ask their own questions; predict how things will behave and analyse causes, using Science to explain what is happening.

Characteristics of an Effective Learner

Courage
Commitment
Collaboration
Creativity
Curiosity

Prior Learning:

- Children identify, classify, compare and group everyday materials in year 1
- Children look at how materials can change shape in year 2

Key Vocabulary taught in this unit:

Cool, empty, flow, heat, horizontal, space, vertical, control variable, fair test, volume, solid, liquid, gas, air, boil, boiling point, carbon dioxide, change of state, cloud, condense, evaporate, expand, freeze, freezing point, ice, oxygen, melt, helium, solidify, viscous.

Key Questions:

- Q. Is this material a liquid or a solid?
- Q. How is temperature measured?
- Q. What difference does temperature make to how quickly the ice blocks melt?
- Q. What are melting and freezing?
- Q. Are spaces empty?
- Q. What is evaporation and how does it help to get things dry?
- Q. Where does the rain come from?

Intent: What do we want the children to know, be able to do by the time they complete this unit?

- 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.

Working Scientifically:

- Setting up simple practical enquiries, comparative and fair tests.
- Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers.
- Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions.
- Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables.

- Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.
- Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.
- Identifying differences, similarities or changes related to simple scientific ideas and processes.

Impact / Outcome:

What will the final product / result be?

Children will learn about the methods scientists use to build scientific knowledge about materials and how they can be used in different ways.

They will learn that scientists make and use observations to answer scientific questions and explain natural phenomena, that they use scientific equipment to quantify their observations and that they use models to help understand how systems and processes work.

They will develop an understanding of the following types of enquiry: observing over time, identifying and classifying, fair testing.

P4C Inquiry (where appropriate)