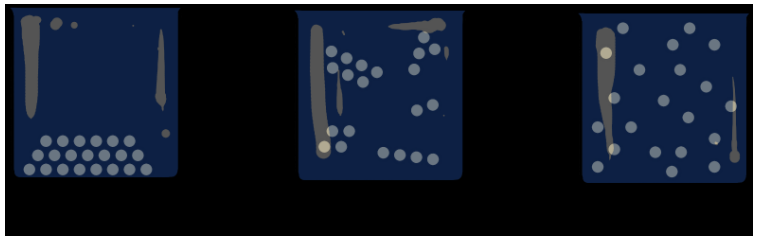
Year 4 SCIENCE – States of Matter

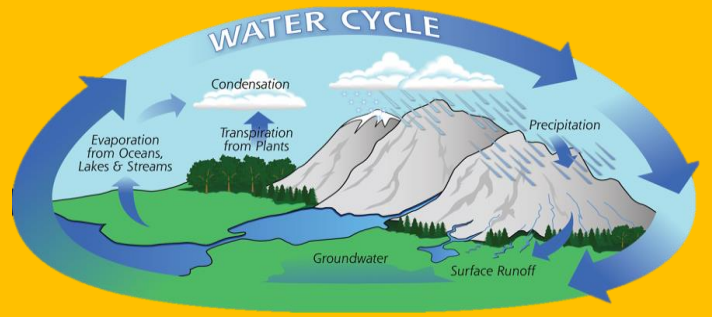
Subject Specific Vocabulary

Water vapour	Water that is in the form of gas.
Condensation	When water vapour that is around us changes from a gas back to liquid.
Evaporation	When liquid changes into gas, usually when it heats up.
Substance	Any solid, liquid, powder or gas is a substance.
Liquid	Liquids will flow as they are made up of loosely packed particles.
Gas	Gaseous matter is made up of matter that is so loose it is always moving.
Melting	When a solid turns to a liquid as it has reached its melting point. The can differ depending on the substance.
Freezing	When a liquid turns to a solid as it has reached it's freezing point. These can differ depending on the substance



Sticky Knowledge about States of Matter

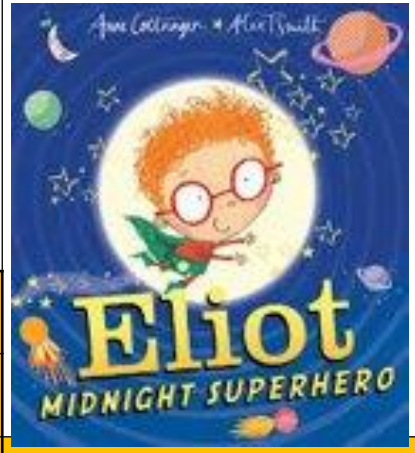
- There are three different states of matter- solids, liquids and gases. These states change when heated or cooled.
- Solids can change to a liquid and then a gas by melting and then evaporating. Gases can change to a liquid and then a solid through condensation and freezing.
- Solid particles are packed together and do not move so that they can keep structure. Liquid particles remain grouped together but move. Gas particles are separated and move individually.



Horbury Primary Academy - Sticky Knowledge Mat

Exciting Books

*Super hero link with English.



Important facts to know by the end of this topic

Identify and group materials based on their state.
Describe the process of changing states.
Describe the water cycle.

Year 4 Science – States of Matter

Prior Learning

- Children will have existing knowledge of how shapes can be changed by squashing bending, twisting and stretching
- Children will have learnt how to describe the properties of different materials using words like: transparent or opaque, flexible etc.
- Children will have knowledge and be able to recall which materials are natural and which are man made
- Children will have an understanding of which materials cannot be changed back after being heated, cooled, bent, stretched or twisted (Year 2)

Core Learning/Skills

- Children will explain the particle structure of solids, liquids and gases
- Children will name a range of solids, liquids and gases
- Children will identify and group materials based upon their state – solids, liquids and gases
- Children will describe how some materials can change state – solid to liquid, liquid to solid and vice versa
- Children will explore how materials change – heating and cooling
- Children will explain and measure the temperature at which materials change state
- Children will explain the process of the water cycle and can explain the part played by evaporation and condensation
- Children will ask relevant scientific questions about the states of matter – solids, liquids and gases
- Children will use observations of scientific investigations – dancing raisins, freezing superheroes
- Children will set up a simple enquiry to explore scientific questions related to states of matter
- Children will make careful and accurate observations using standard units of measurements – ml for freezing and melting investigation
- Children will use thermometers to make measurements related to a scientific states of matter investigation
- Children will make a prediction with a reason
- Children will use diagrams, bar chats and tables using scientific language