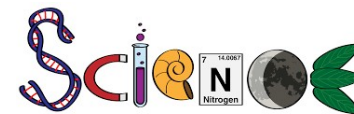




St Andrew's C of E Maghull

Science Knowledge Organiser

Year 4 – Spring 1 – States of Matter.



Knowledge

I can compare and group materials together, according to whether they are solids, liquids or gases.

I can 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).

I can identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.

Vocabulary

Air - the invisible mixture of gases that makes up the Earth's atmosphere.

Freeze - Cooling freezes a liquid into a solid.

Melting point - the temperature at which it changes from a solid to a liquid.

Evaporate/evaporation - when a liquid changes into a gas.

Cooled/cooling - when you lower the temperature.

Crystals - a certain type of solid object.

Condense/condensation - If gaseous water vapour cools down enough, it will turn back into a liquid.

Degrees Celsius – a temperature scale.

Solidify - to make solid, compact, or hard.

Melt - to change from a solid to a liquid state usually through heat.

Change state - the term used to describe the process of one state of matter (solid, liquid or gas) changing to another.

Solid - a state of matter that maintains its own shape instead of conforming to the shape of its container.

States of matter - solid, liquids and gases.

Heated/heating - when you increase the temperature of something

Boil - boiling happens when liquid becomes gas, forming bubbles inside the liquid volume.

Temperature - a degree of hotness or coldness that can be measured using a thermometer.

Precipitation - any liquid or frozen water that forms in the atmosphere and falls back to the Earth.

Boiling point - the boiling point for water is 100 degrees C

Gas - Gases are one of the three states of matter. They're made up of very small molecules which are really spread out.

Oxygen - element that is found in water, rocks, and free as a colourless tasteless odourless gas.

Liquid - a substance where the particles are still close together, but not as tightly bonded or in a fixed structure like a solid.

Transpiration - the process by which plants give off water vapour.

Water cycle - the path that all water follows as it moves around Earth in different states.

Water vapour - water in its gas state.

Lesson Sequence

Lesson 1 – I can identify properties, compare and group the 3 states of matter.

Lesson 2 – I can observe that some materials change from solid to liquid when heated.

Lesson 3 – I can observe that some materials change from liquid to solid when cooled.

Lesson 4 – I can investigate how temperature affects the rate of evaporation.

Lesson 5 – I can identify the part played by evaporation and condensation in the water cycle.

Lesson 6 – End of unit quiz.