



## Science – Year 4 States of Matter

### Vocabulary

| Tier 1      | Tier 2    | Tier 3       |
|-------------|-----------|--------------|
| Materials   | Solid     | Evaporation  |
| Heat        | Liquid    | Condensation |
| Cool        | Gas       | Water cycle  |
| Temperature | Particles | Celsius (°C) |
| Boiling     | State     | Gaseous      |
| Freezing    | Melting   | Volume       |

### Useful Resources

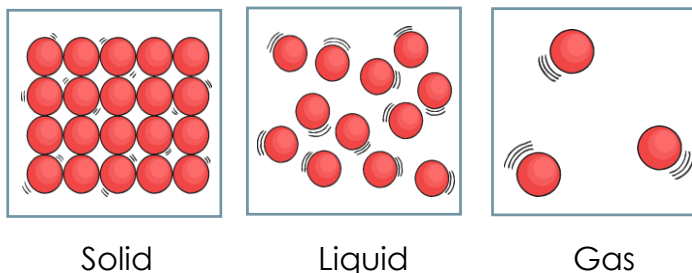
- Round objects, including bouncy balls, to represent particles on a larger scale.
- Craft materials to make models of the water cycle.
- Different materials to demonstrate changes of state, such as water, ice and chocolate.

### Key Scientists:

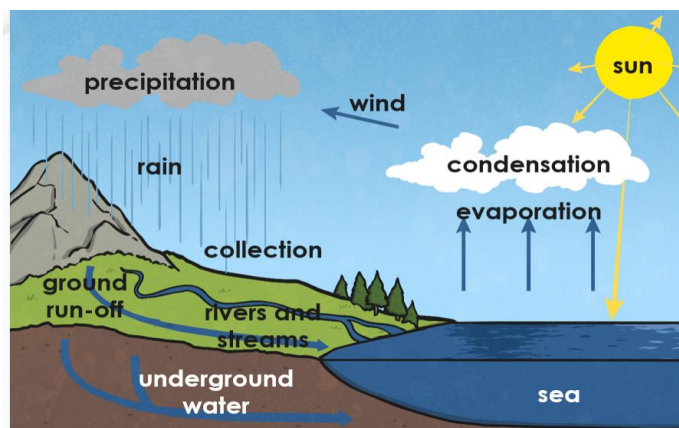
**John Dalton (1766-1844)** – was an English scientist who proposed that matter is made up of atoms that are indivisible and indestructible.



### Particles



### The Water Cycle



### Key Questions/Facts

#### What are the three states of matter?

- A material may be in one of three states: solid, liquid or gas.
- Materials in a **solid** state keep their shape unless a force is applied to them.
- Solid materials always take up the same amount of space.
- Materials in a **liquid** state take the shape of the container they are in.
- Although liquids can change shape, they do not change their volume. This means they still take up the same amount of space.
- Liquids can flow or be poured.
- Materials in a **gaseous** state can spread out to completely fill the container they are in.
- Gases have weight.
- Gases do not keep their shape.

#### How do materials change state?

When a solid turns into a liquid it is called melting. The temperature at which a solid material melts is called its melting point.

When a liquid turns into a solid it is called freezing. The temperature at which a liquid material freezes is called its freezing point.

It is important to remember that some materials have freezing points above 0°C.