

# SCIENCE

## Knowledge Organiser – Spring term (1) 2023

### Solids, Liquids and Gases

All materials can be put into **three** groups.

**Solids** – have a **rigid, fixed shape and volume**. Solids can be cut or shaped. Anything you can take hold of is a solid.

Examples include a brick and a metal spoon.

**Liquids** – are not rigid, they do not have a fixed shape (they will take up the shape of any container) but they have a fixed volume. Liquids are runny, they flow downwards.

Examples include water, milk and juice.

**Gases** – are not rigid, they do not have a fixed shape or volume. Most gases are invisible. They are all around us, spreading into any empty space.

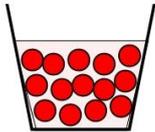
Examples include oxygen and helium.

#### SOLIDS



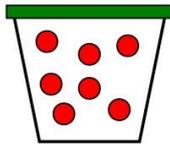
The molecules are held together with strong bonds. They don't move very easily so SOLIDS can keep their own shape and size

#### LIQUIDS



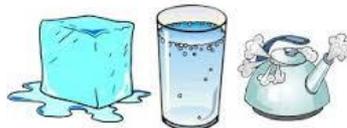
The molecules have weaker bonds. They can move around slightly so LIQUIDS can flow. They can't keep their shape unless they're in a container.

#### GASES



The molecules are free to move around. They can spread around an open space quickly and freely. GASES can't keep their shape unless they are kept in a sealed container.

#### states of matter



There are three states of matter - solid, liquid and gas.

# States of matter

## Key Vocabulary

**Particle** – a tiny amount of something. You cannot see them with your eyes.

**Matter** – objects that take up space and have mass are called matter. Everything around you is made up of matter.

**Temperature** – how hot or cold something is. Measured in degrees Celsius (°C)

**Melting** – the process of a solid **heating** and changing into a liquid.

**Evaporation** – the process of a liquid **heating** and changing into a gas.

**Condensation** – the process of a gas **cooling** and changing into a liquid.

**Freezing** – the process of a liquid **cooling** and changing into a solid.

**Reversible** – the process can be reversed so that the previous state is stored.

**Irreversible** – the process is not able to be undone or altered – a chemical change has occurred

**Precipitation** – when water or snow fall from a cloud

## The Water Cycle

This is the complete journey that water makes, from one place to another, and from one state to the other. Water in the air condenses and falls as rain and flows to the sea where the sun evaporates it.

