Year 4&5 Term 5 Science Knowledge Organiser Materials

Key Vocabulary

materials	The substance that something is made out of, e.g. wood, plastic, metal.
solids	State of matter. Solid particles are very close together, so solids hold their shape.
liquids	State of matter. Liquids flow and take the shape of the container because particles are more loosely packed and can move around each other.
gases	State of matter. Gas particles are further apart and free to move around. A gas fills its container, taking both its shape and volume.
melting	The process of heating a solid until it changes into a liquid.
freezing	When a liquid cools and turns into a solid.
evaporating	When a liquid turns into a gas or vapour.
condensing	When a gas, such as water vapour, cools and turns into a liquid.
conductor	A material that heat or electricity can easily travel through. Most metals are both thermal (heat) and electrical conductors.
insulator	A material that does not let heat or electricity travel through them. Wood and plastic are both thermal and electrical insulators.
transparent	A transparent object lets light through so it can be looked through, for example glass or some plastics.

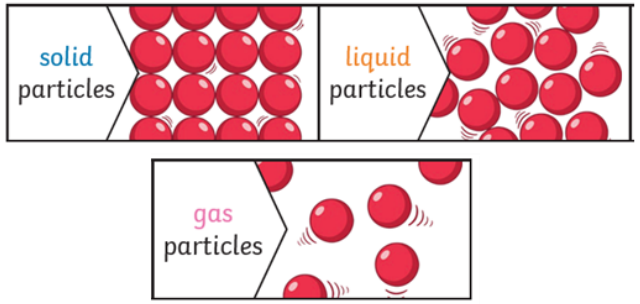
Key Knowledge

Different materials are used for particular jobs based on their properties: electrical conductivity, flexibility, hardness, insulators, magnetism, solubility, thermal conductivity, transparency.

E.g. glass is used for windows because it is hard and transparent.

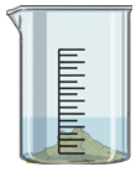
Oven gloves are made from a thermal insulator to keep the heat from burning your hand.

States of Matter



Dissolving

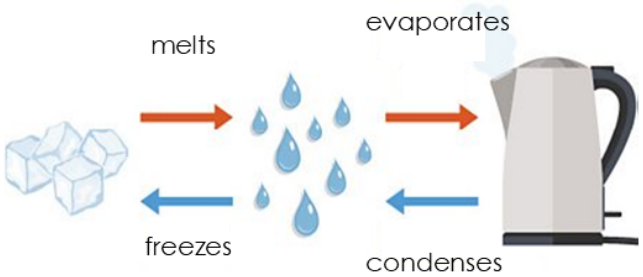
A solution is made when solid particles are mixed with liquid particles. Materials that will dissolve are known as soluble. Materials that won't dissolve are known as insoluble. A suspension is when the particles don't dissolve.



Sand is an insoluble material.

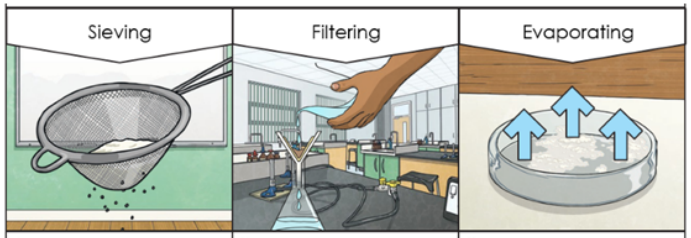
Sugar is a soluble material.

Changes of State



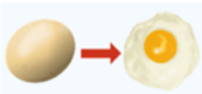
Reversible Changes

Reversible changes, such as mixing and dissolving solids and liquids together, can be reversed by:

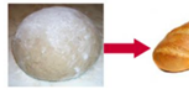


Irreversible Changes

Irreversible changes often result in new materials (products) being made from the old materials (reactants).



For example:
Cooking an egg.
Mixing vinegar with milk produces casein plastic.
Burning wood produces ash.
Baking dough to make bread.



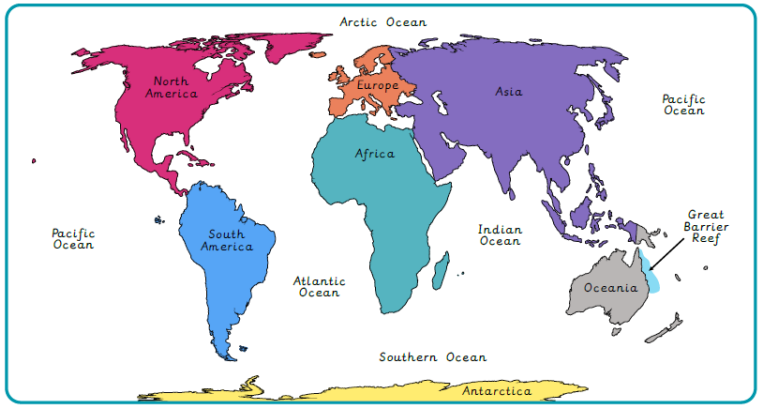
Year 4&5- Why do Oceans Matter?

Why are oceans important?

- They are used for trading between countries.
- Ocean currents influence our weather.
- They provide food and jobs.
- They are used for fun activities.
- They give us ingredients for medicine.
- They absorb carbon dioxide and warm our planet.
- Coral reefs act as a buffer to natural disasters.
- Coral reefs are home to a quarter of our marine species.

Ways to support a healthy ocean:

- Trying to avoid buying single-use plastics.
- Recycling any plastics where possible.
- Only buy what you need.
- Buying second-hand.
- Re-using or re-purposing items.
- Teaching others about the ocean.
- Only buy the seafood you need.
- Trying to use natural fertilisers in gardens.
- Walking or cycling if you can.



ocean current	The movement of a large area of seawater driven by the wind, gravity and water density.
coral reef	A large rock structure in the ocean formed by corals.
coral bleaching	A process which turns coral white, losing its colour.
marine	Relating to the ocean.
threat	Something likely to cause damage.
microplastics	Tiny pieces of plastic created from plastic waste.
acidification	The process of making something acidic.
overfishing	The number of fish decreases as a result of extreme amounts of fishing.
biodegradable	When something naturally breaks down and returns to nature.
Marine Protected Area	A designated geographical area of the ocean that is protected and managed.
single-use plastic	Plastic only used once and then thrown away.

Year 4/5 RE Knowledge Organiser Worldviews

How do non-religious people understand and respond to the world and life?

Our Learning

- Census data (2001–2021) shows a significant increase in people reporting 'no religion'.
- Sociologists often refer to this group as "Nones".
- Many non-religious people are atheist or agnostic.
- Being non-religious does not necessarily mean having no spiritual or supernatural beliefs.

- Why do many reject belief in God? Common reasons include:
  - Growing up in a non-religious family
  - Lack of evidence for God
  - Problem of suffering
  - Trust in science and reason over ancient beliefs

Key Vocabulary	
Worldview	a way of understanding life and the world
Atheist	a person who disbelieves or lacks belief in the existence of God or gods
Non-religious	not following an organised religion
Agnostic	a person who believes that nothing is known or can be known of the existence or nature of God
Nones	people who say they have no religion
Humanism	a non-religious worldview based on reason, empathy and human wellbeing
Personal worldview	your own beliefs and values
Census	a census is an official, mandatory count of every person and household in the country, conducted by the government every 10 years.

Our Learning

How do non-religious people decide right and wrong?

- No shared religious authority or sacred text
- Decisions often based on:
  - **Reason**
  - **Empathy**
  - Consequences for **happiness and wellbeing**
  - The **Golden Rule**
- **Humanists** emphasise living good lives without religion, using reason and compassion.

How do non-religious people make the world better?

- Personal values guide action rather than religious rules
- Many support **human rights**, equality and justice
- The **UN Universal Declaration of Human Rights** is widely accepted by religious and non-religious people

Non-religious worldviews are **diverse, thoughtful and influential**. Like religious worldviews, they shape how people understand life, act morally and contribute to society — and they invite us to reflect critically on our **own beliefs and values**.