The Chemistry Kitchen
Year 5 - Properties and Changes of Materials

Key Vocabulary

materials	The substance that something is made out of, e.g. wood, plastic, metal.
solids	One of the three states of matter. **Solid** particles are very close together, meaning **solids**, such as wood and glass, hold their shape.
liquids	This state of matter can flow and take the shape of the container because the particles are more loosely packed than solids and can move around each other. Examples of **liquids** include water and milk.
gases	One of the three states of matter. **Gas** particles are further apart than **solid** or **liquid** particles and they are free to move around. Examples of **gases** are oxygen and helium.
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**.

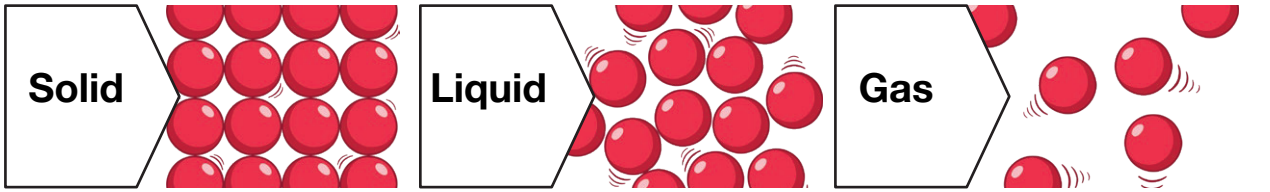
Key Knowledge

Different **materials** are used for particular jobs based on their properties: **electrical conductivity**, **flexibility**, **hardness**, **insulators**, **magnetism**, **solubility**, **thermal conductivity**, **transparency**. For example, glass is used for windows because it is hard and transparent.

Sequence of learning:
Solids, liquids and gases
Properties of materials
Thermal conductivity
Reversible and irreversible changes
Burning
Dissolving
Separating mixtures

In this unit, children will compare and group materials based on their properties, know that some materials will dissolve in liquid to form a solution, learn to separate mixtures, demonstrate that dissolving, mixing and changes of state are reversible and be able to explain that some changes make new materials.

Changes of State



Key Skills
Begin to look at the accuracy, precision, repeatability and reproducibility of investigations.
With support, take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate.
Begin to ask questions and develop a line of enquiry based on observations of the real world, alongside prior knowledge and experience.
With support, make predictions using scientific knowledge and understanding.

What are the properties of materials? Can we change them?