



### What I should already know

- Variety of everyday materials and their properties
- How magnets and electrical circuits work
- Solids, liquids and gases and how they change state.



### Sticky Knowledge

- ◆ Different materials are used for particular jobs based on their properties: electrical conductivity, flexibility, hardness, insulators, magnetism, solubility, thermal conductivity, transparency.
- ◆ Changes of state, solids, liquids and gases
- ◆ Reversible changes, such as mixing and dissolving solids and liquids together, can be reversed by filtering, evaporating and sieving.
- ◆ 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
- ◆ Irreversible changes often result in a new product being made from the old materials (reactants).

### Working Scientifically

- compare materials in order to make a switch in a circuit
- observe and compare the changes that take place, for example, when burning different materials or baking bread or cakes.
- research and discuss how chemical changes have an impact on our lives, for example, cooking, and discuss the creative use of new materials such as polymers, super-sticky and super-thin materials.

### Vocabulary

|              |   |
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| materials    | The substance that something is made out of,  |
| solids       | Solid particles are very close together, meaning solids hold their shape.   |
| liquids      | Liquids can flow and take the shape of the container because the particles are more loosely packed and can move around each other.  |
| gases        | Gas particles are further apart and they are free to move around.   |
| 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 conductor is a material that heat or electricity can easily travel through. Most metals are both thermal conductors (they conduct heat) and electrical conductors (they conduct electricity). |
| insulator    | An insulator is a material that does not let heat or electricity travel through them. Wood and plastic are both thermal and electrical insulators.  |
| transparency | A transparent object lets light through so the object can be looked through, for example glass or some plastics.  |