What should I already know?

- A variety of everyday materials.
- How materials are suitably used based on their properties.
- How magnets and electrical circuits work.
- Solids, liquids and gasses and their particle structures.
- Some materials change state when they are heated or cooled.

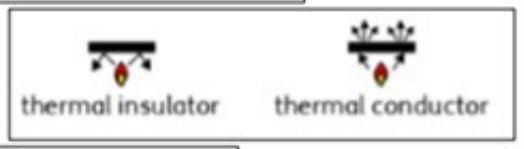
What will I know at the end of the unit?

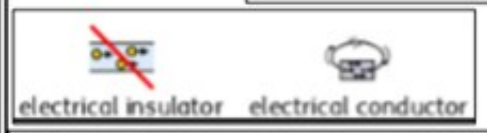
- Be able to compare and group together everyday materials on the basis of their properties.
- Know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution.
- Be able to use knowledge of solids, liquids and gases to decide how mixtures might be separated.
- Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic
- Demonstrate that dissolving, mixing and changes of state are reversible changes
- Explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible.

Scientific Language

Properties	The ways in which an object behaves.
Particles	A tiny amount or small piece.
Soluble	Able to be dissolved.
Solution	A type of mixture where one substance has dissolved into another.
Mixture	Where 2 or more substances are mixed but not chemically joined together.
Reversible	Able to turn or change back.
Irreversible	Impossible to reverse, turn back or change.
Transparent	If an object is transparent, you can see through it.
Translucent	If an object is translucent, you can see light through it but not detailed shapes.
Opaque	If an object is opaque, you cannot see through it.
Conductor	A material that heat or electricity can pass through or along.
Insulator	A non-conductor of electricity or heat.
Thermal	Relating to or caused by heat or by changes in temperature.

Diagram/ Key.





Research questions to investigate.

- Which is the best material to stop an ice cube from melting? Remember to keep it a fair test by using the same amount of ice and the same size and thickness material.
- Do thermal conductors also make good electrical conductors?
- Investigate which materials are soluble and insoluble.
- Observe and compare the changes that take place when cakes are baked or bicarbonate of soda mixes with vinegar.
- Create a mixture of your own. How might you separate each material out again?

Cross curricular links

DT (baking) - reversible and irreversible changes

English—writing non chronological reports

Recommended books