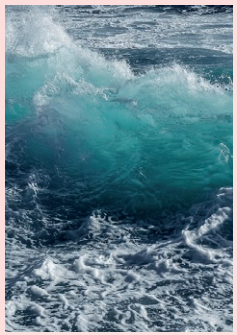
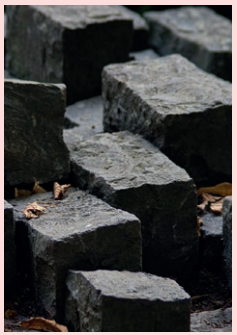
Key Vocabulary Overview	
properties	the qualities a material has
transparent	describes materials that allow light to pass through them
translucent	describes materials that allow some light to pass through them
opaque	describes materials that don't allow light to pass through them
magnetism	a non-contact force created by a magnet that either attracts or repels
hardness	a measure of how much a solid can resist changing shape
electrical conductor	a material that allows electricity to flow through it
electrical insulator	a material that does not allow electricity to flow through it
thermal insulator	a material that does not allow heat to easily travel through it
circuit	a complete route that electricity can flow around
component	a piece of equipment that is used in a circuit
cell	a component that converts stored chemical energy to electrical energy
bulb	a component that produces light
independent variable	the one thing you change in an investigation
dependent variable	what you measure (or observe) in an investigation
controlled variable	the things you keep the same in an investigation
thermometer	a piece of equipment used for measuring temperature
temperature	a measure of how hot or cold something is
data	information collected
conclusion	a statement of what you have found out
anomalous results	results that do not fit the pattern
plastic	a material that is generally light and can be made into different shapes
wood	a natural material that comes from trees/shrubs
metal	a material that is typically hard and shiny, usually conducts heat and electricity and can be magnetic
lifespan	the length of time something can function or last for

Properties

A material is the substance that something is made of, such as **wood**, wool or **plastic**. Different materials have different **properties**, which affect what it is used for.

Some **properties** of materials include:

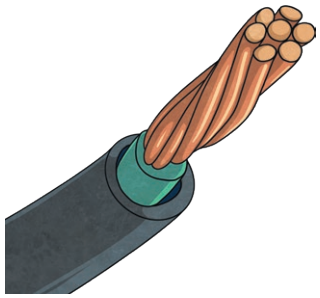
 magnetic	 hard	 flexible	 transparent	 translucent	 thermal insulator	 waterproof	 stretchy
 rigid	 opaque	 shiny	 brittle	 electrical conductor	 soft	 dull	 electrical insulator

Electrical Conductivity

Different materials have different **properties**. Electrical conductivity is the ability of a material to allow electricity to flow through it.

Electrical Conductor

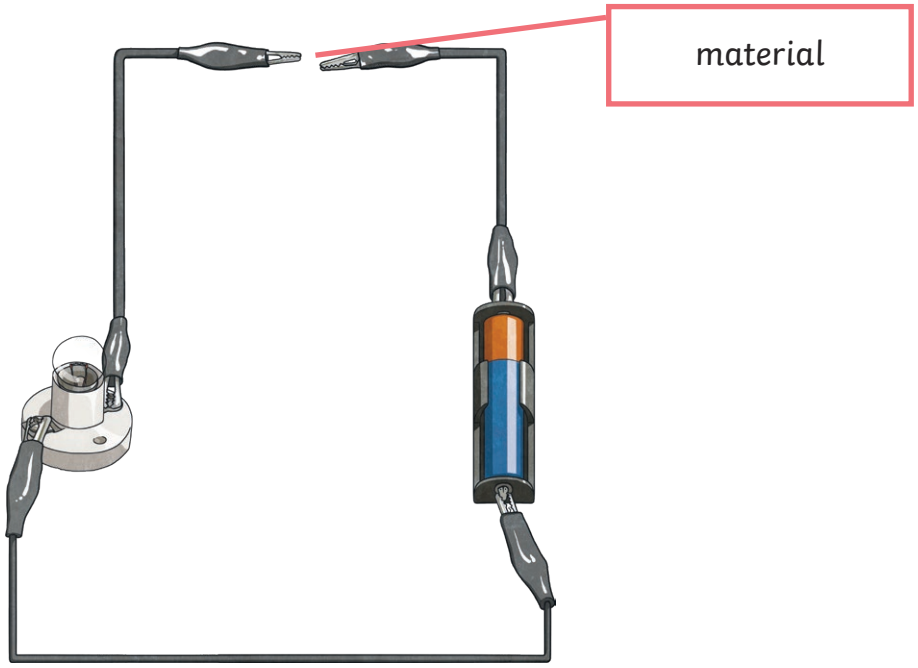
An **electrical conductor** is a material that allows electricity to flow through it, e.g. **metal**. It is used inside electrical wires.



Electrical Insulator

An **elctrical insulator** is a material that does not allow electricity to flow through it, e.g. **plastic** or **wood**. It is often used for safety reasons, such as for the outer casing of wires

If a material is an **electrical conductor**, electricity will flow through the **circuit** and the **bulb** will light up. If a material is an **elctrical insulator**, electricity will not flow through the **circuit**.



Thermal Insulators

A **thermal insulator** is a material that does not allow heat to easily travel through it. They are often used to keep something warm or to keep heat from the environment out.

Plastic bubble wrap is likely to be a good **thermal insulator**, as it does not allow heat to easily travel through it. Aluminium is unlikely to be a good **thermal insulator**, as **metals** conduct heat and so allow heat to pass through them easily.