

# The Knowledge

Supporting the National Curriculum



Knowing More

Remembering More

Learning More

# Properties of Materials






**ARDLEIGH GREEN**  
JUNIOR SCHOOL

Year 5  
Science

# Key Facts

## Properties of Materials

conducts energy	
insulates energy	
transparent	
waterproof	
durable (strong)	
magnetic	

## Everyday Materials

Metal saucepans **conduct** heat to warm food.



Wooden spoons and plastic handles **insulate** heat so hands do not get burned.

**Soluble** materials: solids which **dissolve** in water.  
**Insoluble** materials: solids which **do not dissolve** in water.

## Soluble Materials

Some solids **dissolve** in water (**SOLUBLE**).

coffee



sugar



salt



jelly



Some solids do not **dissolve** in water (**INSOLUBLE**).

pepper



sand



wax



# Key Vocabulary

**Conductive** – a material that allows heat and/or electricity to pass through it

**Thermal** – using or producing heat

**Magnetic** – material that is attracted to a magnet

**Conduction** – heat moving from one object to another through contact

**Hardness** – resistance to scratching and pressure

**Force** - when an object is acted upon by a pull or push motion in a specific direction

**Dissolve** - to mix with a liquid and become part of the liquid

**Solute** - a substance that can be dissolved in liquid

**Solvent** - a substance that can dissolve a solute, water is a solvent

**Substance** – any material, such as sugar

**Solution** – A mixture of a substance and the liquid it has dissolved in

**Filtering** – the separation of a mixture using a tool with small holes to separate particles

**Evaporation** – the process where a liquid changes into a gas.

## Separating Materials

### Sieving



### Filtering



### Magnetism



### Magnetic metals:

- iron
- nickel
- steel

# Test Yourself

- Can you name any different properties of a material?
- What does the term 'thermal conductor' mean?
- Which materials are thermal conductors?
- How does the hardness of a material make it suitable for a given task?
- What does it mean if a material is soluble or insoluble?
- What does solute mean?
- What is a solvent?
- What factors affect the solubility of solutes?
- How can mixtures be separated?