

## Topic: Materials

## Phase: KS1

## Strand: Every Day Uses

### What should I already know? (Yr2)

- Materials are the substances that things are made from.
- We use lots of different materials every day, e.g. metal, plastic, wood, and glass.
- Different materials have certain properties, e.g. glass is see-through, metal is strong and often shiny, etc.
- Composites are made from two or more materials together.
- Some materials are used to make many things.

### At the end of the unit, I will be able to:

- Name and identify common materials (yr1)
- Identify the properties of common materials (yr1)
- Understand the difference between the object and its material (yr1)
- Identify the use of everyday materials and limitations of materials.
- Explore how materials can be changed and how they can be altered to make them stronger.

### Key Knowledge

#### What are objects made from?

Have a look around your house/ classroom and investigate what objects are made from. Often (but not always) objects are made from the materials shown below:



- Tables, chairs, desks, benches and bookcases are often made from wood.
- Keys, taps, screws, nails, saucepans and radiators are often made from metal.
- Windows, mirrors and drinking glasses are often made from glass.
- Bins, toys, food packaging and shopping bags are often made from plastic.
- Diaries, planners, exercise books and posters are often made from paper.

### We are MANOR! As Scientists we will...

#### Manners

Develop a respect and understanding for the natural world, its people, animals and plants. Share ideas, celebrate good work, value others' contributions, or discussions and debates.

#### Aspiration

Learn by being challenged in a series of well-designed scientific enquiry and investigation tasks linked to meaningful contexts and develop a knowledge of scientists and careers to broaden our horizons. Be aspirational in developing scientific knowledge and conceptual understanding through biology, chemistry and physics.

#### Nurture

To recognise that we live in a wonderful world made up of many different people and living things. We will develop an appreciation and respect for the diverse world and environment in which we live, showing care and compassion for the environment around us.

#### Open-Mindedness

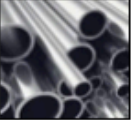
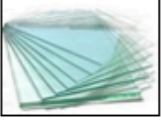




We will be open-minded so that we can conduct experiments or observe what is happening in order to see patterns that might emerge or to gain new knowledge. We will use our curiosity and learn to wonder why something behaves a certain way.

#### Resilience

Engage confidently with the science curriculum and learn that anything is possible and failure is not something to fear but to learn from. We will develop our scientific enquiry and investigation skills with patience and care, repeating investigations to check the accuracy of results.



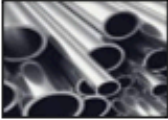
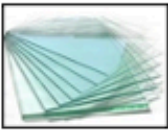






## Types of Materials

 <p><b>Metal</b></p> <ul style="list-style-type: none"> <li>-Metals are made from rocks.</li> <li>-Metal is strong and shiny.</li> <li>-Metals include aluminum, iron and steel.</li> </ul>	 <p><b>Glass</b></p> <ul style="list-style-type: none"> <li>-Glass is made from fine sand.</li> <li>-Glass is very strong and clear (transparent).</li> <li>-Glass is used for windows and glasses.</li> </ul>
 <p><b>Wood</b></p> <ul style="list-style-type: none"> <li>-Wood is made from trees.</li> <li>-Wood is a hard and strong material.</li> <li>- Woods include oak, pine and ash.</li> </ul>	 <p><b>Plastic</b></p> <ul style="list-style-type: none"> <li>-Plastics can be made from lots of different materials.</li> <li>-Plastic can be tough or bendy, and so it is used for many different purposes.</li> </ul>
 <p><b>Water</b></p> <ul style="list-style-type: none"> <li>-Water is a natural material, found all over the world.</li> <li>-Water is clear and can take many shapes. It can be frozen into ice or heated into gas.</li> </ul>	 <p><b>Paper</b></p> <ul style="list-style-type: none"> <li>-Paper is made from trees.</li> <li>-Paper is normally thin and can be made into different shapes. Lots of different things are made from paper.</li> </ul>

## Properties of Materials Vocabulary

Hard      Squashy      Flammable      Translucent      Waterproof  
                  Firm    Soft  
 Dull      Flexible      Smooth      Absorbent      Bumpy      Bouncy

## Properties of Materials

Material	Image	Properties	What could it be used for?
Metal		<ul style="list-style-type: none"> <li>-Metals are often strong, shiny, hard and long-lasting.</li> <li>-Metals can be hammered into different shapes.</li> </ul>	<ul style="list-style-type: none"> <li>-Metals can be made into things like pots and pans.</li> <li>-Metals can stretched into wires and rods.</li> </ul>
Glass		<ul style="list-style-type: none"> <li>-Glass can be strong, but thin glass shatters.</li> <li>-Glass is transparent and waterproof. It can be made into different shapes.</li> </ul>	<ul style="list-style-type: none"> <li>-Glass is most often used to make windows and glasses.</li> <li>-It is also used in making mirrors, table-tops and windscreens.</li> </ul>
Wood		<ul style="list-style-type: none"> <li>-Wood is hard and strong.</li> <li>-Wood is long-lasting and is a natural product.</li> <li>-Wood is flammable.</li> </ul>	<ul style="list-style-type: none"> <li>-Wood is often used to build furniture, like benches and desks.</li> <li>-Wood can be used to build houses and cabins.</li> </ul>
Plastic		<ul style="list-style-type: none"> <li>-Plastics can be tough or flexible and can be made into any shape. Plastics can be dyed different colours and can be made transparent.</li> </ul>	<ul style="list-style-type: none"> <li>-Plastics can be used to make packaging, bottles and toys.</li> <li>-Plastics can be moulded into plates, knives and forks.</li> </ul>
Rubber		<ul style="list-style-type: none"> <li>-Rubber is extremely tough, but also very flexible.</li> <li>-Rubber is elastic and also waterproof. Rubber doesn't tear easily.</li> </ul>	<ul style="list-style-type: none"> <li>-Not including food and drinks, water is still used in many, many products. For example, it is used in making paints, toothpastes, shampoos and cement.</li> </ul>
Brick		<ul style="list-style-type: none"> <li>-Bricks are very hard and strong. They are difficult to break. Bricks are thick and store heat well.</li> </ul>	<ul style="list-style-type: none"> <li>-Bricks are normally attached together with mortar and are used to make buildings.</li> <li>-They are also used for paving.</li> </ul>
Paper		<ul style="list-style-type: none"> <li>-Paper is often thin and can be made into lots of different shapes. Paper can be torn. It goes soggy when wet.</li> </ul>	<ul style="list-style-type: none"> <li>-Paper is normally used for writing. Paper is used in diaries, notebooks and for printing on. Paper is used for posters/displays.</li> </ul>
Cardboard		<ul style="list-style-type: none"> <li>-Cardboard is often thin but is firmer and tougher than paper. Cardboard is more difficult to tear. It goes soggy when wet.</li> </ul>	<ul style="list-style-type: none"> <li>-Cardboard is often turned into boxes and is then used for packaging items. It can be used for protection, e.g., protecting floors when painting.</li> </ul>



Materials Quiz		
Question		Answer
1	Which material is made from rocks?	
2	Name a soft material.	
3	Name an object that is normally made from paper	
4	Name 2 properties of glass.	
5	Name a material property that means 'see through'	

**Soft Materials**

**Hard Materials**

Wool	Fabric	Cotton	Polystyrene	Paper	Rubber	Plastic	Glass	Wood	Concrete	Metal	Diamond
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