

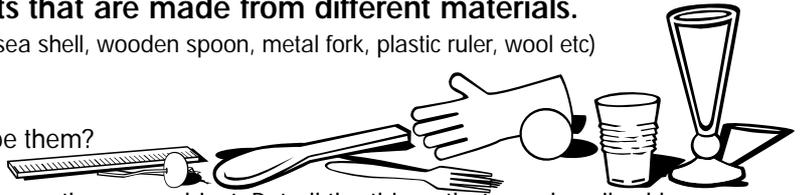
investigation 1

Collect together some objects that are made from different materials.

(ball, cup, glass, rubber glove, conker, sea shell, wooden spoon, metal fork, plastic ruler, wool etc)

Pick them up and feel them.

Can you think of words that describe them?



Some of these words will describe more than one object. Put all the things that are described by one word in one group (for example all the "soft" things). What word describes the things left over?

Now think of two more groups.

investigation 2

List all your objects. Tick the words that describe them.

Can you think of the opposite words?

	absorbent	elastic	electrical conductor	flexible	magnetic	hard	transparent	strong
1. rubber glove	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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5.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	waterproof							

investigation 3

The words that describe materials are their properties. These are things that do not change unless you change the material. (Big & small are not properties as you can cut materials to make them smaller).

WOULD YOU MAKE:

No? What property is needed?

What would be a good material?

A METAL window?	transparency	glass
A STRING chair?		
A PLASTICINE knife?		
A PAPER bucket?		
A PLASTIC magnet?		
A METAL overcoat?		
A GLASS football?		

investigation 4

Design an umbrella. What properties would it need?

WATERPROOF - glass is waterproof - could you make a good umbrella from glass?

TOUGH - metal is tough - could you make a good umbrella from metal?

FLEXIBLE - what materials could you make an umbrella from.

USE THE BACK OF THIS SHEET TO DESIGN AN UMBRELLA. LABEL THE MATERIALS AND THEIR PROPERTIES

This worksheet looks at the characteristics of materials and asks children to distinguish between the names of materials and their properties. This knowledge should help them recognise what needs to be considered when a material is chosen for a particular use.

investigation 1

EQUIPMENT NEEDED:

Collect together some objects that are made from different materials. Objects made from just one material are best. (e.g. rubber ball, cup, glass, rubber glove, conker, sea shell, wooden spoon, metal fork, plastic ruler, section of carpet, twig etc)



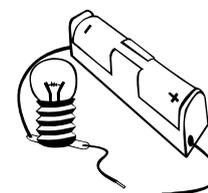
Ask the children to pick them up, feel them and think of words that describe them. Encourage children to choose words like "hard" or "transparent" that will not change. These words are the properties. Words like "big", "long" or "yellow" are things that can be changed and do not describe the properties of the materials.

Ask the children to choose two groups to sort the materials into. You may have to prompt some of the groups for example by bending a ruler to suggest flexible & rigid.

investigation 2

EQUIPMENT NEEDED:

magnet, bowl of water, light bulb & battery connected to form a circuit
List the objects then tick which properties apply.



TESTS FOR PROPERTIES:

Ask the children to conduct the following tests in order to fill in the table. They could first make predictions by ticking the boxes in pencil.

Absorbent: Does the material change when dipped in water?

OPPOSITE: **Waterproof**

Elastic: Does the material stretch then return to shape?

OPPOSITE: **Plastic** (does not return to shape)

Electrical Conductor: Does electricity flow when the material is used to complete a circuit?

OPPOSITE: **Insulator**

Flexible: Does the material bend without breaking?

OPPOSITE: **Rigid**

Magnetic: Is a magnet attracted to the material?

OPPOSITE: **Non- Magnetic**

Hard: Try scratching the surface of the material? Or drop a ball bearing on it

OPPOSITE: **Soft**

Transparent: Can you see through the material?

OPPOSITE: **Opaque**

Strong: Can you brake the material?

OPPOSITE: **Weak**

investigation 3

EQUIPMENT NEEDED:

None

This activity is designed to help children understand the difference between properties and materials and that you may need to consider more than one property to choose the right material.

Would you make...

What property does it need?

What would be a good material?

A chair from string?

rigid

wood, plastic or metal

A knife from plasticine?

strong

metal

A bucket from paper?

waterproof

metal or plastic

A magnet from plastic?

magnetic

iron or steel

A coat from metal?

flexible

fabric

A ball from glass?

tough

plastic or rubber

investigation 4

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