

# Year 2

## Unit: Uses of Everyday Materials

### Intent:

Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper, and cardboard for particular uses.

Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting, and stretching.

### Prior learning

Year 1 – Tell the difference between an object and the material it is made from.

Year 1 – Identify and name a variety of everyday materials.

Year 1 – Describe the simple physical properties of a variety of everyday materials.

Year 1 – Compare and group everyday materials based on their physical properties.

### Later learning (not in Year 2)

Year 5 – Compare and group materials based on their hardness, solubility, transparency, conductivity, and responses to magnets.

Year 5 – Give reasons, based on scientific investigations, for the particular uses of everyday materials.

### Key learning

Materials are used for different purposes based on their properties. For example:

- Wood is used to make furniture and floors.
- Metal is used to make coins, cans, cutlery, and coins.
- Glass can be used to make windows.

The materials we will learn about are glass, metal, rock, plastic, wood, water, brick, paper, fabric, elastic, and foil.

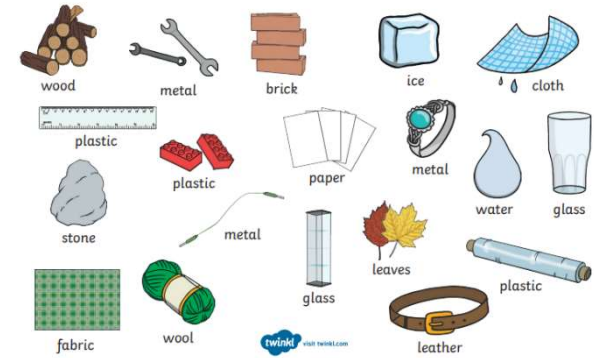
Glass can be used to make windows because it is transparent.

Rulers can be made of wood, plastic, or rubber because these materials are smooth and can be cut straight.

Spoons are made of metal because it is waterproof and can be cleaned easily. They can also be made from plastic because plastic is light and cannot hurt our mouths.

Different types of properties include: transparent, waterproof, opaque, stiff, soft, shiny, rough, absorbent, bright, bendy, stretchy, hard, smooth, dull.

The shape of some materials can be changed when they are stretched, twisted, bent, and squashed. This can be a property of the material or depend on how the material has been processed, e.g. the thickness of it.



#### hard

not easily broken or pierced



A hard diamond.

#### squashy

easily crushed or squeezed



The play dough is squashy.

#### smooth

an even and regular surface



Some smooth pebbles.

#### absorbent

able to soak up liquid



The sponge is absorbent.

#### bumpy

uneven, raised patches



This shell is bumpy.

#### opaque

cannot be seen through



She is hidden by the opaque screen.

#### dull

lacking shine or brightness



The moth's wings are dull.

#### brittle

hard, but may break easily



The glass is brittle.

#### translucent

allowing some light to pass through



The screen is translucent.

#### rigid

unable to be bent or forced out of shape



Stone is rigid.

#### transparent

can be seen through



This glass is transparent.

#### soft

not firm to the touch



The kitten has soft fur.

#### flexible

able to bend



A flexible spring.

#### rough

uneven, irregular surface



The log has rough bark.

#### waterproof

repels water and liquids



A waterproof coat.

#### elastic

springs back once stretched



An elastic band.

#### shiny

reflects light, smooth surface



A shiny silver spoon.

#### conductor

lets heat, electricity or sound to pass through it



Some metals are conductors of electricity.

### Key Questions:

Name a material that can absorb water.

Name an object that will change shape after it has been squished.

Which object has the property of elasticity?

Which material would you make an umbrella out of? Why?

True or false? Some materials change shape when they are twisted. Explain your answer.

## Vocabulary

<b>Absorbent</b>	Material that soaks up liquid easily.
<b>Bendy</b>	An object that bends easily into a curved shape.
<b>Brick</b>	Rectangular blocks of baked clay used for building walls, which are usually red or brown.
<b>Dull</b>	A colour or light that is not bright or a material that is not shiny.
<b>Elastic</b>	A rubber material that stretches when you pull it and returns to its original size and shape when you let it go.
<b>Fabrics</b>	Cloth or other material made by weaving together cotton, wool, or other threads.
<b>Foil</b>	Sheets of metal as thin as paper.
<b>Glass</b>	A hard, transparent material.
<b>Man-made</b>	Things that are created by people.
<b>Metal</b>	A hard substance such as iron, steel, gold, or lead.
<b>Natural</b>	Things that exist in nature and are not made by people.
<b>Opaque</b>	An object or substance that you cannot see through.
<b>Plastic</b>	A material which is light in weight and does not break easily.
<b>Process</b>	A series of actions used to produce something or reach a goal.
<b>Properties</b>	The qualities or features that belong to something and make it recognizable.
<b>Purpose</b>	The reason for which it is made or done.
<b>Recyclable</b>	Waste and materials which can be processed and used again and again.
<b>Rock</b>	The hard substance which the Earth is made from.
<b>Rough</b>	Uneven and not smooth.
<b>Shiny</b>	Things that are bright and reflect light.
<b>Smooth</b>	No roughness, lumps, or holes.
<b>Soft</b>	Not rough or hard.
<b>Squash</b>	Pressed or crushed with such force that something loses its shape.
<b>Stiff</b>	Firm or does not bend easily.
<b>Stretchy</b>	Slightly elastic.
<b>Suitable</b>	Something that is right or acceptable for a purpose or occasion.
<b>Translucent</b>	An object or substance that allows light through it but not detailed shapes to pass through it.
<b>Transparent</b>	An object or substance that allows light to pass through it and you can see detailed shapes through it.
<b>Twist</b>	Turn something to make a spiral shape.
<b>Unsuitable</b>	Someone or something that is unsuitable for a particular purpose or situation does not have the right properties for it.
<b>Waterproof</b>	Does not let water pass through it.
<b>Wood</b>	The material which forms that of trunks and branches of trees.