

St Bernards Primary School – Science

Topic: Uses of Everyday Materials

Autumn Term

Year 2

What should I already know?

- Object are things that you can touch or see.
- Objects are made from materials.
- The names of some materials that objects are made from (eg glass, wood, plastic).
- Some words that describe materials (eg shiny, soft, rough, absorbent).
- How to group and compare a variety of everyday materials based on their simple properties (inc natural and man-made).

What will I know by the end of the unit?

What are materials used for?

- 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.
- Names of materials include: glass, metal, rock, plastic, wood, water, brick, paper, fabric, elastic, foil.

What properties of materials make them suitable for a particular use?

- 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 for children because plastic is light and it cannot hurt children's growing teeth.
- Different types of properties include: transparent, waterproof, opaque, stiff, soft, shiny, rough, absorbent, bright, bendy, stretchy, hard, smooth, dull.

How can you change the shape of materials?

- The shape of some materials can be changed when they are stretched, twisted, bent and squashed.

How to compare and group materials using more complex diagrams

- Use an overlapping Venn diagram to compare and group objects made from natural and man-made materials. Give reasons why

Investigate!

(Investigation plans)

- Consider why some properties of materials make them suitable or unsuitable for different uses.
- Investigate if some items can be made from more than one material (eg cutlery) and explain why.
- Investigate if some materials can be used to make a variety of different objects and explain why their properties make them suitable for multiple uses.
- Investigate how some objects can be changed by squashing, bending, twisting and stretching.
- Investigate how some everyday items from your kitchen cupboard react together to make a fun volcano.
- Investigate the absorbency of paper towels and disposable cloths and develop a hypothesis to test science ideas against. (– paper towel / plant absorbency comparison)
- Investigate the absorbency of solid materials (incl wood, brick plastic and metal and make observations over time.
- Investigate which materials are waterproof and make predictions. Explore how materials can be waterproofed using a variety of materials and products.
- Investigate what happens when some materials are heated and why they change shape when they cool (eg wax candle). Explore the response of particles when introduced to heat via roleplay.



Vocabulary

absorbent	material that soaks up liquid easily
bendy	an object that bends easily into a curved shape.
brick	rectangular blocks of baked clay used for building walls, which are usually red or brown.
dull	a colour or light that is not bright or a material that is not shiny.
elastic	a rubber material that stretches when you pull it and returns to its original size and shape when you let it go
fabrics	cloth or other material produced by weaving together cotton, wool or other threads.
foil	sheets of metal as thin as paper.
glass	a hard transparent material.
man-made	things that are created by people.
metal	a hard substance such as iron, steel, gold or lead.
natural	things that exist in nature and are not made by people.
opaque	if an object or substance is opaque you cannot see through it
plastic	a material which is light in weight and does not break easily.
process	a series of actions used to produce something or reach a goal.
properties	the qualities or features that belong to something and make it recognizable.
purpose	the reason for which it is made or done.
recyclable	waste and materials which can be processed and used again.
rock	the hard substance which the Earth is made from.
rough	uneven and not smooth.
shiny	things that are bright and reflect light.
smooth	no roughness, lumps or holes.
soft	not rough or hard
squash	pressed or crushed with such force that something loses its shape.
stiff	firm or does not bend easily.
stretchy	slightly elastic.
suitable	something that is suitable for a purpose or occasion is right or acceptable for it.
translucent	if an object or substance is translucent it allows light but not detailed shapes to pass through it.
transparent	if an object or substance is transparent it allows light to pass through it and you can see detailed shapes through it.
twist	turn something to make a spiral shape.
unsuitable	someone or something that is unsuitable for a particular purpose or situation does not have the right properties for it.
waterproof	does not let water pass through it.

some objects are in the overlapping section.			wood	the material which forms that trunks and branches of trees.
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Question 1: Which of these materials can absorb water?	Start of Unit	End of Unit	Question 2 : Which of these materials is waterproof?	Start of Unit	End of Unit
Plastic			Wax		
Brick			Wool		
fabric			Paper		
Metal			Plastic		
Don't know			Don't know		

Question 3: True, False or Don't know? (T / F / D)	Start of Unit	End of Unit	Question 4 : These objects change shape after they have been squashed. Yes, No, Don't know (Y / N / D)	Start of Unit	End of Unit
Watercolour paint will cover wax crayon			Plasticine		
Some materials change shape when they are heated			Sponge		
Particles are tiny parts of all objects			Spring		
Once chocolate is heated it stays liquid			Dough		

Question 5:	Start of Unit	End of Unit	
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<p>These objects have the property of elasticity.</p> <p>Yes, No, Don't know (Y / N / D)</p>				
Rubber band				
Ruler				
Balloon				
Paintbrush				