

# Wellesley Park Primary School – Science

**Topic: Uses of everyday materials**

**Year: 2**

**Strand: Physics**

## What should I already know?

- In **EYFS** children should be able to make observations of animals and plants and explain why some things occur and talk about changes. (Early Learning Goal)
- In **Year 1** children should have learnt to identify a variety of everyday materials and describe their simple physical properties in order to compare and sort materials

## What will I know by the end of the unit?

- I can identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for different uses
- I can compare how things move on different surfaces
- I can find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching

## Big Questions

Can you change the shape of all materials?

What happens when water is put on absorbent or waterproof materials?

Who invented Tarmac?

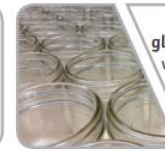
Why are cutlery made out of lots of different materials?

Why do some children drink out of plastic cups rather than glass ones?

## Vocabulary: Types of material



**wood:**  
hard, stiff, strong, opaque, can be carved into any shape.



**glass:**  
waterproof, transparent, hard, smooth.



**plastic:**  
waterproof, strong, can be made to be flexible or stiff, smooth or rough.



**metal:**  
strong, hard, easy to wash.



**paper:**  
lightweight, flexible.



**cardboard:**  
strong, light, stiff.



**fabric:**  
soft, flexible, hard-wearing, can be stretchy, warm, absorbent.

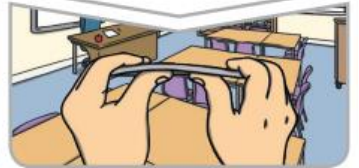


**rubber:**  
hard-wearing, elastic, flexible, strong.

Squash an object by pushing both hands together.



Bend an object by grabbing both ends of the object and bringing the ends inwards together.



Twist an object by turning your hands in opposite directions.



Stretch an object by pulling your hands slowly and gently apart.



## Vocabulary: Properties of material

**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.

**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.

**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.

**flexible**

able to bend



A flexible spring.

**rough**

uneven, irregular surface



The log has rough bark.

**waterproof**

repels water and liquids



A waterproof coat.

**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.

**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.

## RESOURCES THAT ARE IN SCHOOL:

- Feely tubs
- Box of different materials



## FAMOUS SCIENTISTS:

- Charles Macintosh-Waterproof material
- John MacAdam- Tarmac

## CULTURAL CAPITAL/MEMORABLE MOMENTS:

- Jelly snake sweet challenge – who can stretch theirs the furthest without it breaking
- Go on a material hunt around the school or local area
- Try to build the biggest bridge with dry spaghetti and marshmallows
- Visit a church and talk about the what materials were used to make it and what's in it. Talk about how building materials have changed over time.

## RECOMMENDED/USEFUL ONLINE RESOURCES:

- [Material song to learn](#)
- [Video and plenary quiz - BBC bitesize](#)
- [interactive game labelling materials](#)
- [online activity for grouping and sorting](#)
- [InteractiveWhiteboardActivity changing shapes and lesson plans](#)

## BOOKS LINKED TO TOPIC:

**The Tin Forest**  
(Helen Ward)



**Traction Man**  
(Mini Grey)



**Three Little Pigs**  
(Lesley Sim)



## CROSS-CURRICULAR LINKS:

**English:** create simple sentences, innovate a story in writing, use templates to write investigations.

**History-** homes through time.

**DT-** build structures, exploring how they can be made stronger, stiffer and more stable, what materials make the best bridges

# Wellesley Park Primary School – Science

Topic: Properties of materials

Year: 2

Strand: Scientific enquires

## Comparative / fair testing

Changing one variable to see its effect on another, whilst keeping all others the same.



## Research

Using secondary sources of information to answer scientific questions.



## Observation over time

Observing changes that occur over a period of time ranging from minutes to months.



## Pattern-seeking

Identifying patterns and looking for relationships in enquiries where variables are difficult to control.



## Identifying, grouping and classifying

Making observations to name, sort and organise items.



## Experiments

Which shapes make the strongest paper bridge?  
Which material would be best for the roof of the little pig's house?  
Test the properties of materials for particular uses e.g. compare the stretchiness of fabrics to select the most appropriate for Elastigirl's costume, test materials for waterproofness to select the most appropriate for a rain hat.

How have the materials we use changed over time?  
How are plastics made?  
How has glass making changed since it was first made in ancient Egypt?  
How have the materials that humans use for tools changed since the Stone Age?

How long do bubble bath bubbles last for?  
What will happen to our snowman?  
Would a paper boat float forever?

Do magnetic materials always conduct electricity?

Which materials are shiny and which are dull?  
Which materials will let electricity go through them, and which will not?