

Key Vocabulary

Science—Learning about how and why things happen the way they do by observing, describing and experimenting.

Experiment—Investigate a question by carrying out 1 or more tests or activities and recording the results

Enquiry—Gather information to try to answer a question.

Fair test—Only changing **one** thing to ensure that any differences in results are because of that one change.

Observation—Looking closely at results and commenting on what that can tell us.

Materials—The substance that objects are made from.

Properties—Description of a material based on what we can see, feel or measure.

Purpose—The reason that something is made and used.

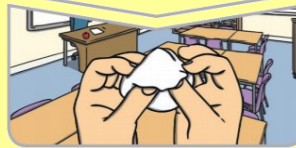
Suitability—Having the properties that make a material right for a particular purpose.

waterproof—Something that does not let water pass through it or soak water up.

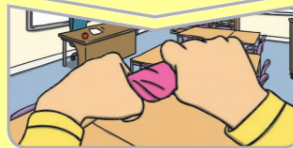
Absorbent—Something that can soak up and hold water in it.

Changing materials

Squash an object by pushing both hands together.



Twist an object by turning your hands in opposite directions.



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



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



Discovering new materials

John McAdam's process was so successful that roads were built in this way right across the world.



Charles Macintosh invented the first waterproof fabric by painting a dissolved rubber solution onto cloth.



Key Questions

Why are some materials better suited to jobs than others?

Why are objects sometimes made out of more than one material?

Do all materials react in the same way when we manipulate them?

What material is best suited for an umbrella? How can we find out?

Why is fair testing important when carrying out experiments?

How have inventions of new materials impacted the world?

Waterproof experiment

What do we want to find out?

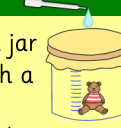
What material would be most suited to use as an umbrella?

What properties should it have?

Waterproof Strong
Light Flexible

What will we do?

- Put a bear into a jar
- Cover the jar with a material
- Pour water over the material



What are we observing?

If the bear is dry after pouring water onto the material, it is waterproof

How can we make it a fair test?

Change: Material

Same: Amount of water. How long we wait.
Size of material. Height water is dropped.

Properties of materials

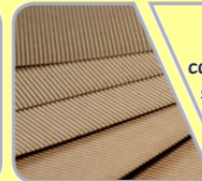
wood:
hard, stiff,
strong, opaque,
can be carved
into any
shape.



glass:
waterproof,
transparent,
hard, smooth.



paper:
lightweight,
flexible.



cardboard:
strong, light,
stiff.

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



metal:
strong, hard,
easy to wash.



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



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