



Properties of materials





- *What's in the bag? Why?*
- *Post-it note what material you think it is and why?*





Materials and their Properties

We know how different properties that make them suitable for different purposes.

Absorbent

Absorbent materials soak up water. Towels are made of cotton fabric because it is absorbent.

Waterproof

Waterproof materials do not let water through them. Nylon fabric is used to make tents because it is waterproof.

Elastic

An elastic material will stretch and then return to its original shape. Rubber is used to make rubber bands because it is elastic.

Electrical Conductor

An electrical conductor allows electricity to pass through it. Copper is used to make wires because it is a good electrical conductor.

Electrical Insulator

An electrical insulator does not allow electricity to pass through it. Plastic is used to coat wires because it is an electrical insulator.

Flexible

Flexible materials bend without breaking. We use leather to make shoes because it is flexible.

Rigid

Rigid materials do not bend easily. We use wood to make tables because it does not bend easily.

Hard

A hard material is difficult to scratch or wear away. We make knives out of steel because it is hard.

Soft

A soft material easily scratches or wears away. We draw pictures using chalk because it is soft and wears away easily.

Transparent

A transparent material allows light to pass through it. We use glass to make windows because it is transparent.

Tough

Tough materials do not break if they are hit or dropped. We use rubber to make balls because it is tough.

Opaque

Opaque materials do not let light through. We cannot see through them. We make curtains from fabric because it is opaque.

Strong

Strong materials do not bend or break when force is applied to them. We use bricks to build houses because they are strong.

Weak

Weak materials are easy to break. We use paper to wrap presents because it is weak - we can tear it easily.

• Post-it note what material you think it is and why?



Pick one of your post-it notes and stick it in your book, underling vocab you have used to describe the material



Good words	Avoid words
Magnetism	Fluffy
Hard	Holey
Soft	Squishy
Transparent	Rough
Flexible	Smooth
Permeable	Bumpy
Waterproof	Stretchy
Flexible	Shiny
Bendy	sticky
brittle	Breaky
Waterproof	See through
conductor	leaky
Insulator	
reflective	
absorbent	
elastic	

Magnetism test.

Touch a magnet to each material. If it is attracted to the magnet, it is a magnetic material. If it is not attracted to the magnet, it is not magnetic. Cross or tick to show whether each material is magnetic.

Hardness test.



Using the pointed end of a nail, carefully try to scratch the surface of each material. Number the materials from 1 to 5, with 1 being the softest material and easiest to scratch with the nail, and 5 being the hardest material and hardest to scratch with the nail. Wear goggles for this test

Transparency test.

Hold each material in front of your eyes. If you can completely see through it, it is transparent. If you can see through it a bit, it is translucent. If you can't see through it at all, it is opaque. Cross or tick to show whether each material is transparent.

In twos or threes pick 3-4 materials and test them for the following



Property	Definition	Materials which are	Materials which are not	How do you know?
Magnetic	Objects are attracted to magnets	Metal- aluminium (foil) Spoon- (steel)		I know that aluminium is magnetic because when I placed it near the magnet it stick to the magnet. Plastic was not attracted to the magnet so cannot be magnetic
Transparent				
flexibility				

Once you have collected your results record your results in the table as above

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