

Previous Knowledge

Properties of materials Y5 Autumn term 3

Project Hook or 'Wow' memory

Group Experiments

The key skills we want pupils to use during this topic:

Gather, record, sort and present data in a variety of ways.

Record findings using scientific language, drawings, labelled diagrams and tables.

Report findings from investigations and present conclusions. Use results to draw conclusions.

Key vocabulary

Elasticity	Ability to return its original shape when a force is removed eg rubber band.
Hardness	Resistance to scratching and pressure. Hardwood does not mark as easily as softwood.
Absorbency	Ability of a material to soak up a liquid.
Waterproof	Resistance to liquids, repels water
Strength	Amount of force needed to break a material usually by pushing or pulling down.

Learning Steps	Key Knowledge
Which material will make the best rainjacket? Exploring/ fair testing	Stretch pieces of cloth across jars to make them taut and using a dropper, drop water onto the cloth. The number of drops and the time they stay on the cloth before being absorbed, if at all can be measured.
Which material is best for food preparation? Scratch test. Exploring	Hardness is a measure of how difficult it is to permanently change the shape of a material by compressing it. If it is difficult to change the shape then it has a high hardness. If it is easy to change its shape, it has a low hardness.
Do all stretchy materials stretch in the same way? Pattern seeking	Investigate elastic bands Stretching comparing different thicknesses of the bands. What patterns can they spot? The thicker the band, the harder it is to stretch but the more difficult it is to snap.
Are only fabrics absorbent? Fair testing Absorbency	Lay thin strips of equal lengths of different materials (include a waterproof strip) into a shallow tray. Pour coloured water into the tray, measure how fast and how far up the fabric it is absorbed. Discuss the different reasons why absorbent materials may need to be used.
Which material would keep my drink hottest for longest? Observing over time Thermal conductivity	Some materials do not let heat travel through them. These are called thermal insulators. e.g. Plastic cup, wooden handle, Oven glove and thermal vest. Test a range of objects to see which allow heat transfer

Statutory Requirements

- Compare and group together everyday materials on the basis of their properties, including their hardness, transparency, and conductivity (electrical and thermal)
- Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic

