Properties of Materials

Norwood Green Junior School - Science

Topic: Properties of Materials | Year 5 | Term: Spring 1

Important Facts

- Some insulating materials found in our houses include fibre glass loft insulation, cavity wall filler and double-glazed windows.
- Natural resources which are used in every day life include: water, air, trees and plants, and cotton.
- Some insulating materials found in our houses include fibre glass loft insulation, cavity wall filler and double-glazed windows.

Did you know?

- Burning, rusting, and cooking are permanent changes. They cannot be undone by reversing the conditions that brought them about.
- Melting and boiling are reversible changes produced by heat. Steam from a boiling kettle condenses back into drops of water when it comes into contact with a cold surface, such as a window.
- Rusting is a chemical reaction between iron, oxygen, and water

Diagrams

Ways to test materials:

Hardness
How resistant a material is to scratching and pressure.
Hard materials: hardwood, metal, plastics

Strength
The amount of force needed to break a material.
Strong materials: many metals and woods.

Elasticity
Ability of a material to turn to its original shape after the force is removed
Elastic materials: rubber bands, metal coil springs

Plasticity
Ability to retain the new shape when the force is removed.
Example materials: plasticine, clay.

Absorbency
Ability of a material to soak up liquid.
Absorbent materials: sponge, cotton wool, towel.

Waterproof
Resistant and repellent to a liquid
Waterproof materials: Many rubbers and plastics

Vocabulary

Comparative test	Undertaking a test with a controlled variable to help answer questions.
elasticity	The ability of a material to resume its normal shape after being stretched or compressed.
plasticity	The ability for a material to be easily shaped or moulded.
crude oil	A natural oil formed by carbon deposits and organic materials.
perforate	To pierce or puncture something.
extraction	To remove something from its natural setting.
thermal conductivity	The ability of a material or substance to conduct or transfer heat.
inexhaustible	Something unable to be used completely because there's too much of it to be all used up.

What will I know by the end of this unit?

- How to compare and group everyday materials
- How to compare the properties and uses of different materials
- I will explore materials which can be derived from crude oil; explain the importance or carbon compounds in our lives.
- I will Explore extracting useful substances from natural resources.
- Explore the thermal conductivity of materials to improve energy efficiency in buildings or other systems.