

Knowledge Organiser

Subject: Science

Unit: Everyday Materials

Overview:

During this sequence of learning, pupils will identify and compare the suitability of different materials including metal, wood, plastic, glass brick, rock, paper and cardboard. They will also find out how the shape of objects can be changed by squashing, bending, twisting and stretching.

What should I already know?

- Objects are made from different materials including: glass, plastic, wood, metal and rock.
- How to distinguish what an object is made from by looking at it.
- Materials can be hard, soft, strong, weak, absorbent, heavy, light, smooth and rough.

What will I know by the end of the unit?

- A range of objects that are made from different materials including wood, plastic, glass, rock, metal, brick and paper.
- How to group materials based on their properties.
- The difference between an object and a material - an object is a thing and the material is the stuff the object is made from.
- Different materials have different properties such as glass which is transparent, smooth and hard.
- Many types of plastic are waterproof, that steel (a type of metal) is strong, that rock is hard, that cotton wool is soft, that rubber is flexible, that rock is rigid, that polystyrene (a type of plastic) is light and that iron (a type of metal) is heavy.
- Certain materials are suitable for different objects e.g. a window pane is made from glass as it is transparent, hard, waterproof and will not rot.
- Applying a force to an object can change its shape e.g. plasticine can be stretched, squashed and twisted.
- Some objects will return to their original shape once the force has been removed.
- When objects move across a surface there is friction when they rub against each other and that sometimes this friction is larger or smaller.
- The friction acting on an object affects the speed at which it moves on a surface.

Vocabulary:

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| Absorption | When a material soaks up a liquid e.g. a sponge is absorbent. |
| Waterproof | Something that keeps water out e.g. a rain jacket is waterproof. |
| Friction | A force that is produced when objects rub against each other. |
| Suitability | Having the right properties for something e.g. glass is suitable for a window pane. |
| Surface | The outside layer of something. |
| Stretch | Cause something to become longer or wider by pulling it. |
| Twist | Form something into a different shape by taking both ends and turning it. |
| Flexible | Bends easily. |
| Rigid | Unable to bend easily. The opposite of flexible. |
| Smooth | An even surface, free from bumps. |
| Rough | An uneven surface. |

