Science: Materials Knowledge Organiser

Year 8: TERM 3 Date : _____

Why should carrier bags be made of plastic?

- They are disposable.
- The properties of plastics are ideal for this purpose as they are light yet strong

Why should carrier bags not be made of plastic?

- They are not widely recycled.
- They take many thousands of years to biodegrade in landfill.
- They are produced using non-renewable resources.

What is a polymer?

- A polymer is a substance which has a molecular structure built up chiefly or completely from a large number of similar units bonded together, e.g. many synthetic organic materials used as plastics and resins.

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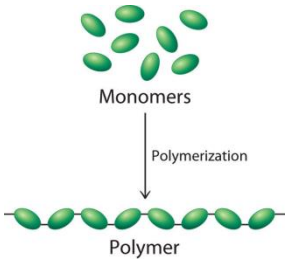


What is a composite?

- A composite is a material that is made of several different parts, often with properties that complement each other.

Why is Gore-Tex better for outdoor clothing than nylon?

- Gore-Tex is better because it's a more breathable material which means it allows air though, it's also water proof while nylon isn't.

What is the difference between mixtures and solutions?

- A **mixture** is two or more substances that are mixed together but not chemically joined.
- A **solution** is a special type of mixture that is made when a solid dissolves and can no longer be seen in the liquid.

Example
A cup of instant coffee is a **solution**.
The solid that dissolves (e.g. coffee granules) is called the **solute**.
The liquid that does the dissolving (e.g. hot water) is called the **solvent**.

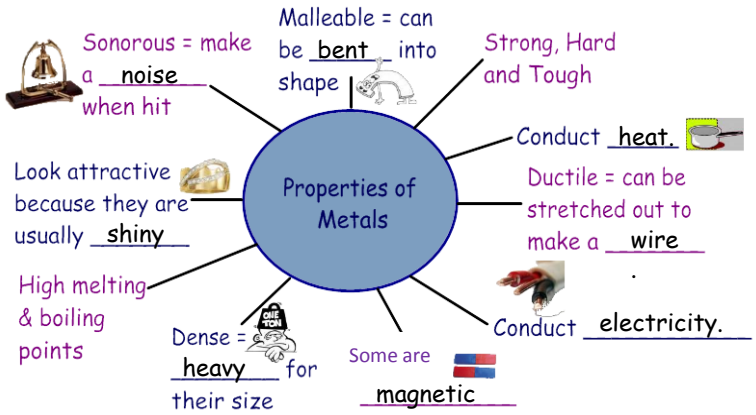
What is a ceramic?

- A ceramic is made of clay and permanently hardened by heat.

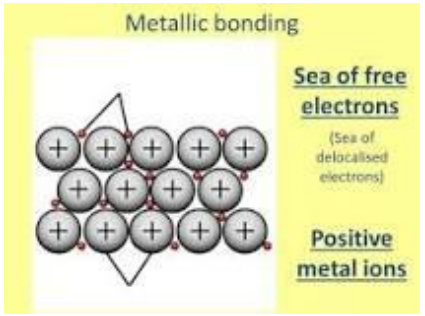
List the properties of ceramics below.

- High melting points (so they're heat resistant).
- High hardness and strength.
- Considerable durability (they're long-lasting and hard-wearing).
- Low electrical and thermal conductivity (they're good insulators).

Properties of metals



Particle diagram of a metal



KEY WORDS:

Electrons: a stable subatomic particle with a negative charge, found in all atoms and acting as the primary carrier of charge in solids.
Monomer: a molecule that can be bonded to other identical molecules to form a polymer.
Renewable: replaced at the same or higher rate than it is used.
Non-renewable: replaced at lower rate than it is used.
Sonorous: imposingly deep and full sound.
Material: the matter from which something is or can be made.
Malleable: able to be hammered or pressed into shape without breaking or cracking.
Dense: closely compacted particles in a substance.