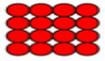


Science and Design Technology Knowledge Organiser : BMSBare (Spring 1)

Section 1 – States of materials:

Materials exist in three states: a solid, a liquid or a gas.

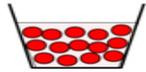
SOLIDS



Solids

- fixed shape
- fixed volume.

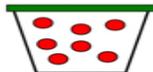
LIQUIDS



Liquids

- Changeable shape
- fixed volume.

GASES



Gases

- no fixed shape
- take on the shape of the entire container.
- no fixed volume

Section 3 - Reversible and Irreversible changes:

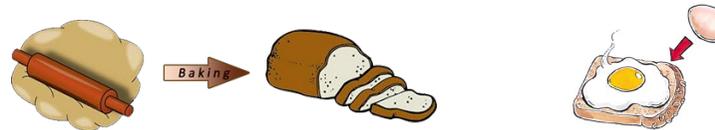
In a **reversible change**, a material turns into something that looks and feels different but then it can be changed back to its original form.

- Dissolving, evaporation, melting and freezing are reversible changes



In an **irreversible change**, the materials can't change back to how they were before.

- Cooking, baking and burning are irreversible



Section 2- Separating materials:

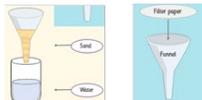
When materials are mixed together, it is sometimes possible to separate the mixture and get the original materials back again.

Some ways to separate materials are evaporation, filtering and sieving.

Evaporation is the process where liquids turn into gases because they are heated up and leave the solids behind.



Filtering is a separation technique that is used to separate a solid that has not dissolved in a liquid, using a funnel and filter paper.



Sieving is a process which can be used to separate a mixture of different size solids.



Section 4 – Sustainability:

Sustainability is ensuring that the planet and all of its resources can continue to provide a home for humans, animals and plants.

It is our job to take care of the planet to ensure that future generations of people and animals can live and **thrive** on Earth.

Thrive means to grow and develop well.

Environmentally friendly means not harmful to the environment.

Environment means the surroundings or conditions a thing, person or animal operates in.



Section 5 - Package design:

When designing packaging you need to consider the following:

- **Size** – is it suitable to contain the product?
- **Shape** – will it hold its shape and protect the product?
- **Materials used** – is it durable (will last for a long time) and
- **Will it catch the customers attention?**
- **Can your packaging be recycled?**

Paper and cardboard are both reusable and recyclable.

You can use shape nets to design and create packaging.

Section 6- Logo and Brand:



A **logo** is a symbol or other small design used by a group to identify products, uniform or vehicles.

A logo should be memorable and recognisable.

Brands are used in business, marketing, and advertising for recognition.

Logos may contain a company name or a **slogan**.

A **slogan** is a short memorable phrase.

Examples:

Kit Kat – “Have a Break, have a Kit Kat”

Skittles – “Taste the Rainbow”

Heinz – “Beanz Meanz Heinz”

Rice Krispies – “Snap! Crackle! Pop!”

A **brand** is a name given by the maker to a product or a range of products.

