

NATURAL SCIENCES-GRADE7

SEPARATING MIXTURES.

Key notes to take down in your natural science book. Rule of after the last section and take down the notes provided.

- ✚ Draw the picture below and colour.
- ✚ Remember that the picture does not need to be perfect when drawn but simply show a variety of sweets that you like in order to capture the concept taught.
- ✚ There after ensure you answer the question below the picture.
- ✚ All notes to be taken down in your class work book in the bullet points provided. Use different colours to help you remember.
- ✚ Read the notes in the textbook provided as well as the notes given on the worksheet in order to understand the concept of separating mixtures.
- ✚ <https://youtu.be/jA0PzbLYPUM>



Here is a photo of different types of sweets that have been mixed to form a *mixture*. Look at the sweets in the mixture. The sweets look different and they have different properties in terms of shape, colour, mass, flavour and size. You also might have a favourite type of sweet and flavour. *How would you go about separating your favourite sweet from this mixture? ...*

Take down notes:

Many things around us occur naturally as mixtures: salty sea water, moist air, soil, compost, rocks (mixture of minerals) to name a few. Many mixtures are man-made, for instance; Coca Cola, paint, salad dressing and when mum is baking a cake.

Mixtures are very useful. However, sometimes we need to separate mixtures into their components/ ingredients. Remember that the substances in a mixture have not combined chemically. They have not turned into new substances, but are still the same substances as before - they have just been physically combined. That is why we can use physical methods to separate them again.

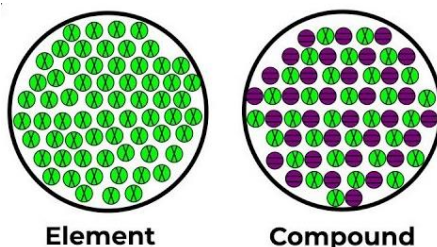
All materials are made up of matter. Matter is made up of tiny particles.

We can classify matter as either a *pure substance* or a *mixture* of different substances.

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Pure substances:

- Made up of only one type of particle.
- It is made up of the same arrangement / composition of particles all the way through.
E.g.



- Example:
- Distilled water, please note tap water is not a pure substance as water has a variety of particles which makes it a mixture. Water contains other chemical elements as it goes through the purification process. Chlorine and lime are some of the components used in the process of purification.
 - Table salt
 - Carbon dioxide
 - Gold.

Mixtures:

- Mixture: two or more substances with different physical properties that are mixed together. Example A cup of coffee.
- Physical properties: something about a material that can be used to describe how it looks, feels or behaves.
- Chemical reaction: when two substances combine with each other chemically to make a completely new substance.
- Constituents: These are the components or the ingredients that make up a mixture.
- Mixtures may be solids liquids and gasses.
- Mixtures consists of materials with different physical properties.
- The substances that make up a mixture are called constituents.
- Constituents in a mixture do not combine together, E.G corn flakes and milk. In this case the corn flakes will not combine together in a chemical reaction.
- The constituents of a mixture keep their physical properties in a mixture.
- This means that we can easily remove an ingredient/ component through the methods of physical separation. E.g. In a mixture of sand and water, we will use the method of filtration to remove sand particles.
- Because the constituents of a mixture have different physical properties, it is possible to separate it from each other.