

NATURAL SCIENCES AND TECH GRADE 6

WEEK 3 OF LOCKDOWN PROGRAMME

TOPIC :7 SOLUTIONS AS SPECIAL MIXTURES AND DISSOLVING... PAGE 69

UNIT 1 SOLUTIONS...PAGE 70

1. When two substances make a **solution**, it will look as if the **one substance has disappeared** into the other. We say that the substance has **dissolved**.
2. Solutions are **uniform** in appearance, which means that they are **the same** throughout the mixture.



3. When **sugar** is added to **water**, the sugar completely **dissolves**, and a **sugar solution** is then formed.

UNIT 2 SOLUBLE AND INSOLUBLE SUBSTANCES ...PAGE 72

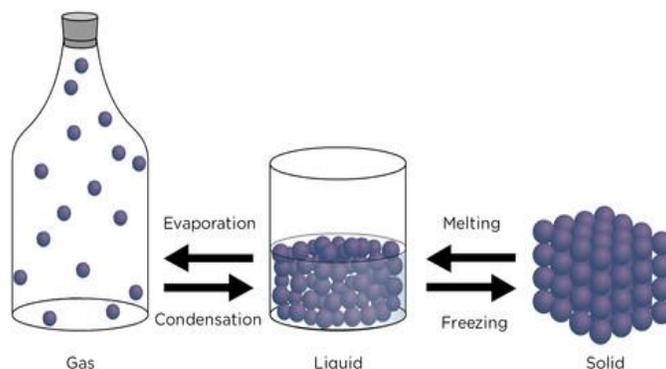
1. Substances, like **sugar and salt**, dissolve in water and are called **soluble** substances.
2. The substance that looks as if it has disappeared, but has actually dissolved, is called the **solute**.
3. The substance that we can still see, normally the liquid, is called the **solvent**.
4. **The solvent and solute** together are called **the solution**.
5. Some substances **do not dissolve** in water, e.g. sand. We say it is **insoluble** in water.



Sand will not dissolve in water, and settles at the bottom, it is insoluble

The difference between melting and dissolving

1. Substances **melt** when **heat** is added, but the **substance remains the same** type of substance. The **state** of the substance **changes** from **solid** to **liquid**, and then to a **gas**. The process can be reversed as shown in the diagram below.

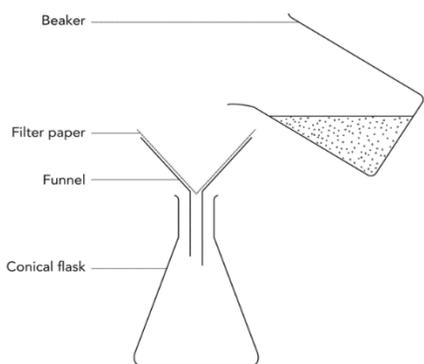


Solids melt when heat is added; the process is then reversed when cooling occurs.

Separating Solutions

1. The substances in solutions cannot be separated by sieving, filtering, hand sorting, or settling and decanting. This is because solute particles are dispersed between the solvent particles.
2. Solutions can be separated **by heating** so that the **solvent evaporates**. The **dry solute** will be left behind.
3. This is because the water evaporates or boils and turns into **water vapour**. If you heat sugar water, the sugar in the solution cannot evaporate and is left behind as a solid in the form of **crystals**. This process is called **crystallization**.

- Crystallisation** is used to recover salt from sea water. Sea water is pumped into shallow dams and allowed to evaporate. Windy and sunny weather is needed to speed up the evaporation process.
- Some mixtures can be separated by **filtering**. Filter paper is folded and put into a funnel. Fine substances like curry powder or small sand particles can be separated from water using this method.



Filtration of a mixture of sand and water

TASKS TO BE COMPLETED

- Activity 1...Page 69
- Activity 2...Page 70

Complete number 4 and 5 only, as you will not have copper sulphate at home.

- Activity 3...Page 72

This can be done at home. Use glasses instead of beakers. The glasses must be the same size. Use a table spoon to measure the same quantity of water in each glass. Use 4 tablespoons of water for each glass.

- Activity 6