STEPPING STONE SCHOOL (HIGH)

CLASS :8

Subject: CHEMISTRY
Date:17/06/2020
Topic: ELEMENTS, COMPOUNDS AND MIXTURES
Time Limit: 60 MINUTES
Worksheet No. :11

GOOD DAY, CHILDREN

In the last worksheet we have discussed about the mixtures and their types. Today I am going to discuss about the various method of separation of mixtures.

SEPARATION OF MIXTURES:

Why do you need to separate mixtures?

- To obtain useful component.
- To obtain a pure substance.
- To remove harmful impurities.

Method of separation of mixtures:

1. **SOLID - SOLID SEPARATION**
    - **Hand picking.**
    - **Sieving.**
    - **Winnowing.**
    - **Magnetic separation.**
    - **Sublimation.**
    - **Gravitation.**
    - **Solvent extraction.**
    - **Fractional crystallisation**.

Hand Picking

Principle on which it is based is the difference in size; shape or colour of the components of a mixture.
Ex: Picking small stones from pulses or rice.

Sieving

It is based on the principle of separating bigger particles from smaller particles.
Ex: To remove stone from sand

Winnowing

It is based on the principle of separating heavier particles from lighter particles.
Ex: Husk & chaff from grains.

Magnetic separation

It is based on the principle of separating magnetic substance from non magnetic substances.
Ex: To separate iron and sulphur mixture.

Sublimation

It is based on the principle of separating sublimable substances from non sublimable substances.
Ex: Ammonium chloride and sand.

Gravitation

It is based on the principle of separating a mixture when one component of mixture is heavier than water and the other component is lighter than water.
Ex: Sawdust and sand.

Solvent extraction

It is based on the principle of separating a mixture where one of the solid components is soluble in liquid and the other is not soluble.
Ex: Sodium chloride and calcium carbonate.

Fractional crystallisation

It is a process use to separate components of a mixture when the solubility of solid components varies in the same solvent.
Ex: Sodium chloride and potassium nitrate.

2. **SOLID LIQUID SEPARATON**
    - **Sedimentation.**
    - **Decantation.**
    - **Filtration.**
    - **Evaporation.**
    - **Crystallisation.**
    - **Froth floatation.**
    - **Distillation.**
    - **Centrifugation.**

Sedimentation

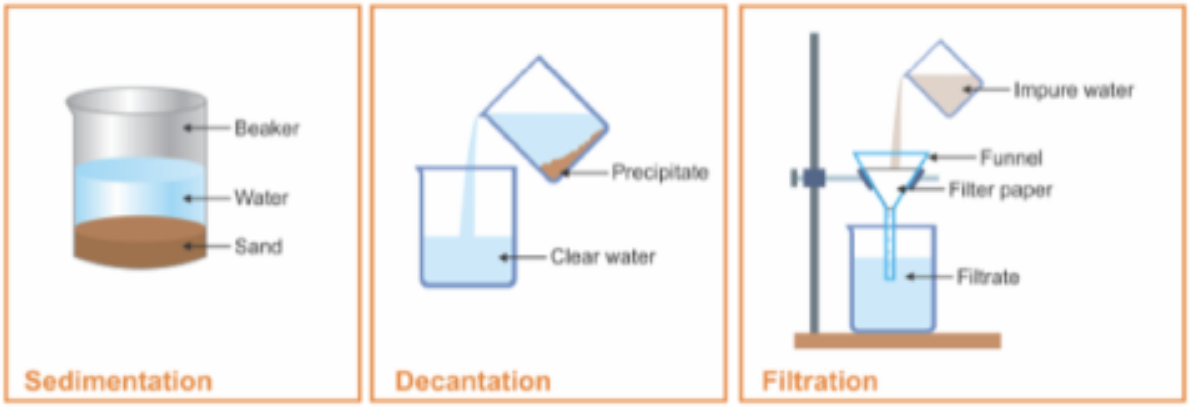
It is a process to separate insoluble solids suspended in liquid.
The solid particles that settle down are called Sediments.
The clear liquid above the sediments is called supernatant.
Ex: Separation of sand and water.

Decantation

The process of pouring the clear liquid without disturbing the sediments is called Decantation.
Ex: Decanting water from a mixture of sand and water.

Filtration

The process where insoluble solid particles can be separated from a liquid through filter paper.
The particles left behind in the filter paper is called residue.
The liquid that passes through the filter paper is called filtrate.
Ex: To separate tea leaves and tea; chalk powder and water.



Children going through the above worksheet please answer the following questions:

1. **Why do you need to separate mixture?**
2. **Define Sieving and Winnowing.**
3. **How will we separate a mixture of a) Calcium Carbonate and Sodium chloride; b) Husk from grain; c) ammonium chloride from sand?**
4. **Differentiate between Residue and Filtrate.**

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