

Research Lab

Separation of a Mixture

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Research Question-

- How can I separate a mixture into its original parts

Introduction-

Mixtures are physical combinations of substances. Because they are not chemical combinations of substances, mixtures can be separated into their individual components. Most separation techniques separate components of a mixture by manipulating the physical properties of the substance in the mixture, such as size, density, solubility or boiling point.

Procedure-

1. Taking the magnet, we moved it over the sand to pick out the metal pieces.
2. Using the tweezers, we picked out the colored rocks in the sand.
3. We poured sand into a beaker with 150 mL of H₂O. We then stirred the sand into the water.
4. After putting a coffee filter on a second beaker, we poured the sand/water solution into the filter to separate the gravel and salt.
5. We then poured the strained water from the second beaker into the pan to separate the salt from the water. This would be done by heating up the pan with the water in it to evaporate the water, leaving salt.
6. When the water evaporated, a white film was left on the bottom of the pan. This was the salt.

Conclusion-

To separate the mixture into its original parts, we used a magnet, two beakers, tweezers, a coffee filter, a cooking pan, water, and a heating plate. We used the tweezers to separate the rocks, the magnet to pick up the bits of metal, water to separate the gravel from the sand, and the heating plate to separate the water from the salt. Obviously it would vary on what you would use to separate the components in another mixture, but the process is pretty much the same. You have to use outside sources to get the components in the mixture by themselves.