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10/3/2023

Separating Mixtures

Research Question: How can I separate a mixture into its original parts?

Introduction: Since a mixture contains different compounds and/or elements we need to know how to separate the compounds/elements to get them to their original parts. Compounds can be decomposed into elements by chemical means and an element can't be broken down.

Procedure:

Material- mixture; Sand, iron fillings, rocks, salt. Magnet, tweezers, water, glass beaker, spatula, coffee filter, hot pan.

First to remove the iron fillings we used a magnet to pull it from the rest of the mixture. Next, we used tweezers to remove the small rocks. We then filled a beaker with 150ml then added the sand and salt. We stirred the salt in the water until it dissolved. Next, we used a coffee filter and filtered out the sand from the salt water. Finally, we evaporated the water leaving only the salt at the bottom of the pan.

Results: All the different (combined) parts in the mixture were separated into their original parts. Even though we probably didn't separate every grain of sand from the salt or made sure all the iron fillings were out of the mixture, we did everything to the best of our abilities.

Conclusion: We figured out that to separate a mixture you need to know what it's made up of in the first place. Iron is magnetic so we used a magnet and rocks are the easiest to pick up with tweezers. If you tried to pick up each grain of salt and sand to separate them, it would take forever and you'd most likely not be able to differentiate between the two, but we know water dissolves salt and that you can filter the sand without it dissolving as well. So, in conclusion to separate a mixture into its original parts we must first know what the original parts are and what they are made of.