

Class Copy

Observing Physical Properties of Matter Lab

INTRODUCTION:

As you look around the room, all the things you see are examples of matter. Most matter is found in the form of mixtures, meaning it is composed of more than one substance. Mixtures can be classified as either heterogeneous or homogeneous, and you can easily determine the type of mixture by looking at it. Can you see different parts? If so, you are looking at a heterogeneous mixture. If not, then the mixture is homogeneous.

In this lab you will be separating out the components from a heterogeneous mixture that contains 6 different substances: salt, sand, wax, iron, sulfur, and rock. Iron is an element because it is composed only of iron atoms. Compounds are composed of two or more atoms chemically bonded together. Luckily, all these different substances have different physical properties. To do this lab, it might be helpful to consider the size, density, as well as whether or not they will dissolve in water. These physical properties allow chemists (like you!) to explore matter.

Remember, lab safety for yourself and other is the most important concern in the classroom. This matter is generally safe as long as you do not misuse or mishandle it (*meaning use your goggles at all times and do not do anything unsafe*).

MATERIALS:

- 50 ml beaker, 30 ml beaker, H₂O bottle, plastic stir rod, small spoon, magnet, plastic cups, and GOGGLES.

SUBSTANCES (CHEMICALS):

- Iron (Fe), beads (C₃H₆), magic sand (SiO₂), sulfur (S), and table salt (NaCl)

What You Need to Do:

- **First**, read the introduction above as a group.
 - **Second**, copy down the data table into your notebook
 - **Before you start the experimental part of the lab, put on your goggles**
 - **Third**, test the five substances above for: magnetic attraction, solubility in water, and density compared to water. (**NOTE:** Do **not** place the iron in water, it will rust.)
 - **Fourth**, **Record** your results in the data table.
 - **Fifth**, list **3 unique physical properties** for each substance. Use your book or notes if you need help.
 - **Finally**, **Clean up** after you completed your testing. Pour liquids into the labeled collection containers.
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DATA TABLE:

Chemicals	Magnetic	Soluble (Dissolves) in Water	Insoluble in Water	Denser than Water (Sink)	Less Dense than water (Float)
Iron (Fe)					
Beads (C ₃ H ₆)					
Magic Sand (SiO ₂)					
Sulfur (S)					
Salt (NaCl)					