

Class Copy

Separating Mixtures Lab

INTRODUCTION:

During an earthquake last year most of the containers holding the substances from the Observing Physical Properties of Matter Lab spilled all over the floor and were mixed together. The lab today will give you the opportunity to separate out the five substances instead of throwing all this mixed up matter away. You will work with your group to develop a method for separating the mixture of substances. By using the data you have already collected, the materials available to you, and your knowledge of the properties of matter, you will successfully separate out the matter based on their physical and chemical properties and how they interact with each other and water.

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 (use your goggles at all times and do not do anything unsafe).

MATERIALS:

- Beakers, strainers, paper towel, funnel, H₂O, test tube, eye dropper, stir rod, spatula, candle, magnet, plastic cup, tongs and GOGGLES.

SUBSTANCES (CHEMICALS):

- Iron (Fe), Beads (C₃H₆), sulfur (S), magic sand (SiO₂), and Table Salt (NaCl)

What You Need to Do:

- **First**, write down the steps **and/or** draw how you will attempt to separate each of the five substances from the mixture. Spend **15-20 minutes** coming up with your experimental design.
- **Before you start the experimental part of the lab, put on your goggles.**
- **Second**, work with your team to **carry out your experimental design** for separating each part of the mixture (**NOTE:** Do not place the iron in water, it will rust.) See your teacher for additional supplies.
- **Third**, Notify teacher of your success separating the mixture. **Clean up** after this has been accomplished.
- **Fourth**, **describe** how you separated each substance from the mixture. Make sure it is clearly stated.
- **Fifth**, make a clear and complete **scientific drawing** of your actual **separation technique** and illustrate how you separated each part of your mixture.
- **Finally**, Complete the **table** below and **post-lab questions**.

Chemicals	Substance		Mixture	
	Element	Compound	Heterogeneous	Homogeneous
Iron (Fe)				
Beads (C ₃ H ₆)				
Sulfur (S)				
Magic Sand (SiO ₂)				
Salt (NaCl)				

Post-Lab Questions: Answers the following questions in complete sentences:

1. Explain how you determined whether each of the five were **substances** or **mixtures**?
2. Explain how you determined whether the substances were **elements** or **compounds**?
3. Explain how you determined whether the mixtures were **heterogeneous** or **homogeneous**?
4. Why was this lab important? In other words, what did it teach you and what did you learn?