

S8P1a. I can develop and use a model to compare and contrast pure substances (elements and compounds) and mixtures. This includes homogeneous and heterogeneous mixtures.



### Pure substance (element), Compounds, Mixtures Stations Lab

#### **Prior Knowledge:**

1. What is a pure substance? \_\_\_\_\_
2. What is a compound? \_\_\_\_\_
3. What is a homogeneous mixture? \_\_\_\_\_
4. What is a heterogeneous mixture? \_\_\_\_\_

**Problem:** How can you tell the difference between a pure substance, element, and compound?

**Hypothesis:** If \_\_\_\_\_, then \_\_\_\_\_

**Materials:** Bolt, Nut, Washer, Aluminum foil, Water, Salt, Soda, Salt water, Salad dressing, Baking soda, Iron, Ziploc bag, Copper, Egg shell

#### **Part 1 Instructions/Procedure:**

1. Follow your teacher's instructions. Take your screws, bolts, and washers and separate them into three different bowls. What does this represent (Element/pure substance, Compound, or Mixture)? \_\_\_\_\_
2. Now take your nut and screw it onto your bolt. What does this represent (Element/pure substance, Compound, or Mixture)? \_\_\_\_\_
3. Now remove your nut from your bolt and put your washer onto the bolt. Next screw your nut back onto the bolt. What does this represent (Element/pure substance, Compound, or Mixture)? \_\_\_\_\_
4. Now separate your bolt, nut, and washer from each other. Put them into a bowl. What does this represent (Element/pure substance, Compound, or Mixture)? \_\_\_\_\_
5. How do you know if you had an element/pure substance? \_\_\_\_\_
6. How do you know if you had a compound? \_\_\_\_\_
7. How do you know if you had a mixture? \_\_\_\_\_

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**Part 2 Instructions/Procedure** – Observe the following materials and write on your chart whether they are elements/pure substances, compounds, or mixtures.

Substance	Element, Compound, Mixture?	Homogeneous or Heterogeneous Mixture?
Aluminum foil		
Water		
Salt		
Soda		
Salt water		
Salad dressing		
Baking soda		
Iron		
Air		
Copper		
Egg shell		

**Post-Lab Questions:**

How were you able to determine if it was an element/pure substance, compound, or mixture? \_\_\_\_\_

\_\_\_\_\_

How were you able to determine if the mixtures were homogeneous or heterogeneous mixtures? \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_