**Separation of Mixtures Lab Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Physical Properties:** (Which properties will you use to complete the separation of the mixture?)

**1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Hypothesis:** IF\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

then\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Materials: (Things that you are using)**

**1) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 4) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**2) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 5) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**3) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 6) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Procedure:**

[1] Use scale to measure mass of mixture within the beaker. Next, weigh your plastic weigh boat. Record both results in your data table.

[2] Gently spread mixture over paper towel.

[3] Use scale to measure the mass of the empty beaker. Record the results in data table. Subtract the ”mass of the beaker” from the “mass of the beaker and the mixture” to determine the mass of just the mixture itself.

[4] Separate copper strips, place them into the plastic cup (or weight boat), and mass. Then subtract the mass of the weigh boat from the mass of both to determine the mass of JUST THE COPPER. Record the results in data table. Place copper strips into community copper beaker.

**STOP!!!!!!!!!!!!!!!! Wait for directions from your teacher.**

[5] Take the resulting mixture and spread it as flat as you can over the paper towel. If you do not, the next step will not work completely.

[6] **Use magnet in plastic bag and KEEP IT IN THE PLASTIC BAG**. Pass over mixture several times to collect iron. Place the iron shavings into the plastic cup (or weight boat). Repeat this process until all of the iron shavings are removed from the mixture. Record the results in data table.

[7] Mass your 50 ml beaker. Set up the funnel in the ring stand, and place the filter paper into the funnel. Place 50 ml beaker directly under the funnel.

[8] Dump the sand and salt combination into the filter paper, which is in the funnel. Using the graduated cylinder to collect the water from the sink, add 10 ml of water into the filter, wait for 30 seconds, then pour the last 10ml water in the filter. Allow the liquid to collect in the 50ml beaker

**STOP!!!!!!!!!!!!!!!! Wait for directions from your teacher.**

[9] Place 50 ml beaker onto the hotplate and allow sufficient time for the water to evaporate.

[10] Mass the 50ml beaker with the salt in it, and determine how much salt was in the mixture.

[11] Determine the percentage of each of the portions of the mixture by dividing one substance by the total mixture mass.

**Data Table**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Mass (g)** |  | **Mass (g)** |
| Mass of 400ml beaker with mixture in it | **(this)** | Mass of 50 ml beaker |  |
| Mass of 400ml beaker with nothing in it | **(minus this)** | Mass of weight boat/plastic cup |  |
| Total mass of just original mixture that was in 400ml beaker | **(equals this)** |  |  |

|  |  |  |
| --- | --- | --- |
| **Substance** | **Mass (g)** | **% (without weigh boat)**  **= (mass of object / mass of total mixture) X 100** |
| Total mass of just original mixture that was in 400ml beaker | **(‘equals this’ goes here)** | -------------------------------------- |
| Copper | With weigh boat =  Without weigh boat = |  |
| Iron | With weigh boat =  Without weigh boat = |  |
| Salt | With 50 ml beaker =  Without 50 ml beaker = |  |
| Sand | Original mass of mixture minus each individual part = |  |

Conclusion Questions:

1. What type of mixture were we trying to separating the beginning?
2. Did we ever separate a homogeneous mixture? If so, when?
3. List the different phases of matter you observed today and tell me where you saw it in the lab.
4. List the physical properties you used **and** how those properties helped to separate the types of matter.
5. Was the original mixture made of only elements, only compounds, or both elements and compounds? **Explain**.
6. In the end, did we change any of our original types of matter, or did we just simply separate them? **Explain.**