Name_____ Pd _____ Date_____

Separation of a Mixture Lab:

In this lab, we will be separating a mixture that contains salt, popcorn kernels, iron filings, and sand. By the end of this lab, all four components should be physically separate from the others. To do this, you may use the equipment that is available in the lab.

Directions:
Test each of the physical properties in the chart for each material that will be in your mixture. Be sure to use a small sample so that the samples will last for all of the classes.

Physical properties each component of your mixture:

Material	Size Range of particles	Magnetic or not magnetic?	Density: less than or greater than water?	Solubility? (Does it dissolve in water?)	At least one other observation
Salt					
Iron Filings					
Popcorn Kernels					
Sand					

List three other physical properties that we aren't testing here.

A)

B)

C)

Planning:

For each material, list the physical property that you will use to separate it from the mixture and explain how it will help you and what you will do.

Salt:

Iron Filings:

Popcorn Kernels:

Sand:

Procedure:

List the steps you will take in order to separate your mixture.

You must have your teacher initial your plan before obtaining your mixture and supplies.

Teacher Initials: _____

List the materials you will need here; the first one is done for you.

1) Baggie with mixture:

   10g salt

   10g sand

   15g popcorn kernels

   5g iron

Recovery:

Once you have separated your mixture into its components, measure each of the recovered materials and calculate your percent recovery.

Material	Mass in mixture (crude material)	Mass of material recovered (pure product)	% Recovery (use formula below)	Observations about recovered material compared to original material
Salt				
Sand				
Popcorn Kernels				
Sand				

$$\%recovery = \frac{Massofpureproduct}{massofcrudematerial} x100$$

Post-Lab Questions:

Directions: Please use complete sentences to answer the following questions.

1) What part of the mixture was most difficult to separate? What part was easiest to separate? Explain.

2) Was the mixture you had a homogeneous or heterogeneous mixture? How could you tell?

3) Give a real world example of how/why separating mixtures is important. What physical properties and methods to people use to separate the mixture? Explain why separating this mixture is important.

4) Reflect on your experience in separating this mixture. How would you change your procedure next time? What advice would you give to students in another class before they start this lab activity?