

# LAB for Students with NO SCIENCE SAFETY CONTRACT!

McDougal Littell Science: Matter and Energy 1.3

## M&E SECTION 1.3 LAB INVESTIGATION

### Separating a Mixture of Solids

White sand and sugar look alike. When they are mixed, it may be difficult to see the different substances in the mixture. Sand can be separated from sugar, however, because sugar will dissolve in water, and sand will not. Mixtures are combinations of substances in which the individual substances keep their individual properties even when mixed. In this experiment you will use water and a filter to

- dissolve the soluble portion of a mixture
- separate the soluble portion of a mixture from the insoluble portion



OPEN CONE

★ Use this worksheet to create your Lab write up. This will count as your Lab grade for this activity.

★ **Problem:** Is the unknown substance you are given a mixture?

★ **Hypothesis:** If the unknown substance is a mixture of soluble and insoluble solids, the mixture can be separated by mixing with water, filtering, and evaporating the filtrate.

★ **Procedure:**

1. Place 2-5 g of the unknown substance in a test tube. Fill the test tube about 1/4 full with water, stopper, and shake for one minute.
2. Fold a piece of filter paper and place in a funnel. Place the funnel into the second test tube in a test tube rack. Pour the contents of the first test tube through the filter and funnel so that it drains into the second test tube.
3. Pour about 1/2 of the liquid **filtrate** from the second test tube into the evaporating dish, place the dish on the burner stand, and heat gently with an alcohol burner until all the water is evaporated.

### MATERIALS

- 2-5 g of unknown substance
- filter paper
- funnel
- evaporating dish
- alcohol burner
- burner stand
- 2 test tubes
- test tube rack
- rubber stopper
- safety goggles

### Observe and Analyze:

- 1 The flow chart on the next page can be used as a summary of the procedures and observations made during the experiment. Copy this chart into your lab book under the DATA section.

2. Which of these solids is soluble in water?

\* **Conclude:** Write a conclusion (answer to the problem). Include in your conclusion

- Was your unknown substance a mixture?
- How do you know?

\* = write your own version of this. Use your Lab write up format as a guideline.

★ = copy this part



Data: Copy this flow chart into your lab ~~book~~. Write up. This should be in the data section of your lab write up.

