



California State University of Bakersfield, Department of Chemistry

Solubility of Salt and Sand



Standard:

2-PS1-1. Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties.

Introduction:

With a solution of sand and salt, you will create a demonstration which shows examples of changes in the state of matter (phase changes) and solubility rules.

Materials:

- Approximately 2 oz. sand (or dirt from outside)
- Approximately 2 oz. salt
- Funnel
- Filter paper (a fine coffee filter can work as well)
- (2) 6oz. cups, preferably clear plastic or glass.
- Approximately 4 oz. water

Safety:

- Always have an adult with you to help you during your experiment.
- Always wear eye protection and gloves when doing chemistry experiments

- Conduct this experiment in a well-ventilated area.

Procedure:

1. Prepare your solution of sand and salt by mixing them in a cup and adding the water.
2. Place the filter paper into the funnel, and place the funnel into the second cup.
3. Pour the mixed solution into the funnel, and observe that the water passes through the filter, but the sand stays behind.
4. Allow the water to evaporate (this may take a day or two) and observe how the salt has passed through the filter, and solidified again in the second cup!

Data and Observations:

What did you see? Anything you were not expecting? Describe it here.

Questions:

1. Why did the salt and water pass through the filter? Why was the sand unable to pass through the filter?
2. Where did the water go? Which phase changes did you observe?
3. What happens to salt when it is dissolved in water?

References:

1. "A Soluble Separation Solution" ScienceBuddies.org.
http://www.sciencebuddies.org/science-fair-projects/project_ideas/Chem_p016.shtml
(Accessed May 8, 2012).

