Explore

Name: _____ Date: _____

Solubility

Driving Question

Which of the unknown substances dissolve in water, and how can that help me identify them?

What We Need

1 Graduated cylinder (per group)
1 Pair of safety goggles (per student)
5 Stir sticks (per group)
1 tsp of Substance 1, 2, 3, 4 and 5 (per group)
5 8oz Clear plastic cups (per group)
250 mL Water (per group)

Directions
1. Take a moment to look at the data table on the next page.
2. Observe Substance 1. Record the color and particle size (fine, small, medium, large, very large) in the table.
3. Feel Substance 1. Be careful to not spill the substance, since all of the substance will be needed later. Record the texture in the table.
4. Observe Substances 2–5. Record the color, particle size, and texture in the table.
5. Label each clear plastic cup with a number, "Substance 1" through "Substance 5."
6. Fill each cup with 50 ml of water, using the graduated cylinder.
7. In the cup labeled Substance 1, pour in a teaspoon of Substance 1. Stir for 15 seconds.
8. Repeat the previous step for each substance.
9. Record your observations in your data table.
10. Use the Clue Card and your observations to identify each mystery substance. Write the name of the substance in the blank at the top of the correct column.
11. Answer the reflection questions on the next page.

Explore

Data and Observations

M	Substance 1 _____	Substance 2 _____	Substance 3 _____	Substance 4 _____	Substance 5 _____
Color					
Texture					
Particle Size					
Soluble in Water?					

Reflection Questions

1. Using the data you collected, which substances were similar in particle size?
   _____
   _____

2. How do you know if a substance is soluble in water?
   _____
   _____

3. How do you know if a substance is not soluble in water?
   _____
   _____

4. How does solubility help you identify substances?
   _____
   _____

5. Describe how the observations you recorded on your data chart help identify materials based on their properties.
   _____
   _____
   _____
   _____