Plop Plop Fizz Fizz

Scientific Process

Edgenuity Unit: Scientific Knowledge Conclusions
Time: 30-60 minutes

Lesson: Analyzing Data/Drawing

Learning Target

I can make predictions based on prior knowledge, test them using an experiment, and analyze my results.

Materials

• 3 Alka-Seltzer tablets • 3 plastic cups (18 oz.) • Salt • Teaspoon	• Vinegar • Water • Stopwatch or clock with second hand

The fizzing you see when you drop an Alka-Seltzer tablet in water is the same sort of fizzing that you see from baking powder. A baking powder **reaction** is caused by an acid reacting with baking soda (sodium bicarbonate). If you look at the ingredients for Alka-Seltzer, you will find that it contains citric acid and sodium bicarbonate (baking soda). When you drop the tablet in water, the acid and the baking soda react -- this produces the fizz.

The question for this investigation will be: "What factors will make an Alka-Seltzer tablet dissolve faster?" You will compare 3 factors:

- Room temperature water
- Acidic water
- Salt water

The **control group** is the group that is separated from the rest of the investigation; the factors will not influence this group. What should be your **control group**?

The **independent variable** is the factor that changes between groups, for this investigation the **independent variable** will be the type of water (acidic, salt, etc).

The **dependent variable** is what changes or is different because of the **independent variable**. Based on the original question, what will you observe as the **dependent variable**?

Develop your **hypothesis** by completing this statement:

Alka-Seltzer will dissolve fastest in _____ water, and slowest in _____water.

I think this because _____.

Procedures:

Label and fill the 3 cups halfway (~9 oz.) with the following:

- 1- Room temperature water
- 2- Room temperature water with 2 tsp. vinegar
- 3- Room temperature water with 1 tsp. salt

Drop one Alka-Seltzer tablet into Cup 1 and use the stopwatch to keep track how long it takes to dissolve completely. Record your results here:

Type of Water	Dissolve Time

Repeat with Cups 2 and 3.

What factors made the Alka-Seltzer tablet dissolve faster?

In a complete sentence, answer the question:
Did your results support your **hypothesis**? Why or why not?

Source: www.sciencebuddies.org