POP THE TOP

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Time Frame:	Standards:
20 minutes 6th Grade	**6.S.2.1.5** Explain the nature of physical change and how relates to physical properties

Objectives:

The student will experience what happens when there is a build up of gas and pressure. In addition, this activity provides a good contrast between a physical and chemical change.

Background Information:

What happens when you have a build-up of gas?

The gas in question is carbon dioxide and the explosion is nothing short of fun. It's impossible to do this activity just once. It is addicting and habit-forming. Proceed at your own risk!

In order for a chemical reaction to occur, the particles, atoms or ions, which are REACTANTS, must physically come into contact with one another. Anything that increases the frequency of these encounters will increase the rate at which PRODUCTS are formed.

Carbon dioxide gas builds up so much pressure the lid is forcibly launched. With an Alka-Seltzer tablet, the CO2 is produced as a result of a chemical reaction. With the soda, the CO2 is produced as a result of vigorous shaking. This provides a good contrast between a physical and chemical change. You may need to experiment with several different film canisters before you are successful at building a rocket that launches with a blast. If the lid fits too tightly or too loosely, it won't work.

Materials:

- Film canister with a snap-on lid. Look for a clear film canister, if possible.
- Water or Soda Water
- Alka-Seltzer® tablet
- Safety glasses
- Paper towel for clean-up (you already know that this one is going to be good!)
- Watch or timer
- Notebook
- Adult helper

Procedure:

1. Put on your safety glasses.
2. Divide the Alka-Seltzer tablet into three equal pieces.
3. Fill the film canister 1/4 of the way full with water.
4. Get ready to time the reaction of Alka-Seltzer and water. Place one of the pieces of Alka-Seltzer tablet in the film canister. What happens?
5. Time the reaction and write the time down. How long does the chemical reaction last? Why does it stop? Empty the liquid in the film canister into the waste bucket.
6. Repeat the experiment, but this time place the lid on the container. Remember to time the reaction. Write down your observations.
7. You should have two pieces of Alka-Seltzer tablet left. Repeat the experiment using one of the pieces of Alka-Seltzer, but this time you decide on the amount of water to put in the film canister. Do you think that it will make any difference?
8. Use the last piece of Alka-Seltzer to make up your own experiment. What do you want to find out? How are you going to do it? What are you going to measure?
9. Go ahead and experiment!

Assessment:

N/A

Additional Content:

N/A

References:

Hands-On Chemistry Experiments Grades K-2
Wendi Silvano
School Specialty Publishing
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