

Pop Rockets 1 of 2

One important characteristic of gas is pressure. Increasing the amount of gas in a container can raise the pressure of a gas. In this activity, you will use the build-up of gas pressure to launch a film canister rocket.

Materials

File folder or card stock
Blunt-end scissors
Glue
Empty film canister
Double-sided tape
Half of an effervescent antacid tablet
Water
Stopwatch

NOTE: This activity can be messy and should be conducted outside.

SAFETY: Be sure to follow Milli's Safety Tips and do this activity only with adult supervision! Do not eat or drink the water used in this activity! Eye protection must be worn by everyone present in the launch area!

Procedure

Build the Rocket

1. To make fins for the rocket, trace the pattern below (four times) onto a file folder, or a piece of card stock.
2. Cut along the solid lines so that you make four fins.
3. Fold the fins along the dotted lines.
4. Place glue on each of the fins in the area marked "Glue here" in the picture above, and attach each of the fins to the film canister. Be sure to have the point of the triangle towards the closed end of the canister and to leave enough room to put the lid on the open end of the canister.
5. Fold the fins so they stick straight out from the canister.
4. Close the canister, quickly place it on the launch area with the lid at the bottom, and take at least three big steps backwards.
5. The tablet should produce enough gas in the canister to pop off its lid, which will propel the rocket into the air.
6. Dissolve any unreacted pieces of the effervescent tablets by placing them in a bowl of water. Thoroughly clean the work area and wash your hands.
7. Record your experimental data in the "What Did You Observe?" section.

Fuel the Rocket

1. Ask your adult partner to help you select an appropriate area outside for the launch of your rocket.
2. Fill the canister half full of water.
3. Tape the half tablet of the effervescent antacid inside the lid of the canister using a piece of double-sided tape.

Where's the Chemistry?

Effervescent antacid tablets contain an acid and a base, similar to baking powder. When the acid and base are dry, they do not react, but when they dissolve in the water, they react to produce carbon dioxide gas. As the gas is formed, pressure builds up until, finally, the cap is blown off the canister and your rocket is launched.

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What did you Observe?

How many seconds did it take for the rocket to launch after it was sealed?

_____ seconds

About how high did the rocket go into the air?

_____ meters