

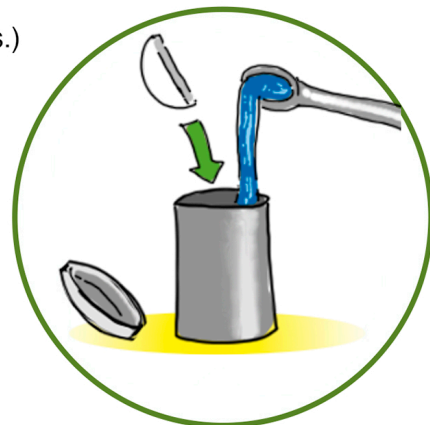
BUILD A FILM CANISTER ROCKET!

YOU WILL NEED:

- One empty 35mm plastic film canister and lid. These are getting harder to find, but stores that develop film should have some. (The white canisters work much better than the black ones do.)
- One fizzing antacid tablet (such as Alka-Seltzer - Get this from your parents.)
- Water
- Safety goggles

WHAT TO DO

1. Put on those safety goggles and head outside - no really, when this works, that film canister really flies! If you want to try the indoor version, do not turn the canister upside down in step 5.
 2. Break the antacid tablet in half.
 3. Remove the lid from the film canister and put a teaspoon (5 ml) of water into the canister. Do the next 2 steps quickly.
 4. Drop the tablet half into the canister and snap the cap onto the canister. (make sure that it snaps on tightly.)
 5. Quickly put the canister on the ground CAP SIDE DOWN and STEP BACK at least 2 meters.
 6. About 10 seconds later, you will hear a POP! and the film canister will launch into the air!
- CAUTION: If it does not launch, wait at least 30 seconds before examining the canister. Usually the cap is not on tight enough and the build up of gas leaked out.



HOW DOES IT WORK?

There's nothing like a little rocket science to add some excitement to the day. When you add the water it starts to dissolve the alka-seltzer tablet. This creates a gas called carbon dioxide. As the carbon dioxide is being released, it creates pressure inside the film canister. The more gas that is made, the more pressure builds up until the cap is blasted down and the rocket is blasted up. This system of thrust is how a real rocket works whether it is in outer space or here in the earth's atmosphere. Of course, real rockets use rocket fuel. You can experiment controlling the rocket's path by adding fins and a nose cone that you can make out of paper. If you like this experiment, try the Exploding Lunch Bag. Be safe and have fun!

MAKE IT AN EXPERIMENT:

The above is a DEMONSTRATION. To make it a true experiment, you can try to answer these questions:

1. Does water temperature affect how fast the rocket launches?
2. Does the size of the tablet piece affect how long it takes for the rocket to launch?
3. Can the flight path be controlled by adding fins or a nosecone to the canister?
4. How much water in the canister will give the highest flight?
5. How much water will give the quickest launch?