Take & Make: Film Canister Rockets

Film Canister Rockets propel with a strong force. Please provide adult supervision and stand back about 6 feet as the canister flies. Personal safety goggles are recommended. This project is best done outside as the rocket may fly over 20 feet into the air!

In addition, the "Alka-Seltzer" used for propulsion could be harmful if ingested.

Materials provided: film canister, Alka-Seltzer tablets
Materials you provide: water

Procedure:
1. Put on your safety goggles and head outside with your materials. (If you must do this inside, do not turn the canister upside down in step 5.)
2. Break an Alka-Seltzer tablet in thirds.
3. Fill your canister a third full of water.
4. Quickly drop an Alka-Seltzer piece into your water and snap on the lid.
5. Continuing to work quickly, turn the film canister upside down and place it on the ground. Step back 6 feet.
6. In about 10 seconds, you will hear a pop and watch your canister fly!
7. If the canister hasn't launched in about a minute, you may have a leak. Look around your area for evidence of a leak. Pick up the canister while aiming it away from you to empty it and try again.
8. If your canister doesn't launch or doesn't fly far, try some of the experiments listed below.

The Science behind this:
When you combine the Alka-Seltzer tablet and the water, they produce carbon dioxide. Pressure builds up inside the canister as the gas is released. The gas builds until the lid is blasted down and the canister is propelled upwards. Real rockets use rocket fuel to produce thrust in a similar way. If you'd like, you can create fins and a cone out of paper to control your rocket's path.

Extensions: Experiment with the following:
- Does water temperature affect either timing or height of the propulsion?
- How does the size of the tablet piece affect the time it takes for the rocket to launch?
- How do your paper fins & cone affect the rocket's path?
- What amount of water gives your rocket its highest flight?
- What amount of water gives your rocket tis quickest launch?