

SCIENCE FESTIVAL FACILITATOR'S GUIDE

Alka-Rockets



Make sure you have the materials you need.

- Plenty of overhead space and a nonslip surface
- Empty film canisters
- Effervescent antacid tablets (Bayer Alka Seltzer Gold works really well!)
- Pitchers of water
- Safety glasses for all participants

1. Watch this video on your smartphone:

<https://youtu.be/Ur7QplGq4cw>

2. Prepare your station.

- Fill pitchers with water, and place them where they can be easily shared.
- Distribute film canisters and safety glasses for each student-adult pair.
- Have paper towels on hand to clean up any spills!

spark. inspire. engage.



Questions to ask participants before they start:

- What makes a rocket lift off? (Let them brainstorm and share their ideas for a few minutes—remember, there are no wrong answers.)
- Let's experiment!

Instructions:

Please read each set of instructions out loud. Make sure that you direct the correct person to complete each assigned task.

- **Both:** Put on your safety glasses
- **Student:** Pour approximately ½-inch of water into the film canister.
- **Working Together:**
 - Break the effervescent antacid tablet in half.
 - Put one half of the of the tablet into the film cannister
 - Quickly fit the lid on the cannister, make sure the seal is tight
- **Student:** Shake the canister vigorously, turn it upside-down and place it on a flat surface.
- **Both:** Stand back!

How It Works:

Gas pressure builds inside the film canister due to the mixing of the antacid tablet and water, which releases carbon dioxide. This action continues until the pressure builds high enough to blow the canister apart from its lid. The reaction is the launch of the rocket.

Vocabulary:

Third Law of Motion: The “rocket” in this activity is propelled according to the principle stated in Isaac Newton’s third law of motion, “For every action, there is an equal and opposite reaction.”

Real-World Application:

In an actual rocket engine, hot gas is produced by the burning of fuel. The gas is accelerated to the rear of the rocket. The reaction is a thrusting force, which makes the rocket “lift off.”