CRISTY BURNE

FILM CANNISTER ROCKET

TEACHING RESOURCES

Science and English Extension Activities

In her show, Cristy often uses a film cannister rocket demonstration. Below, she details how it works, and offers some after-show activities to try in class, deepening scientific understanding and connecting learning across subjects.

FILM CANNISTER ROCKET: HOW IT WORKS

Cristy uses:

- Empty film cannister with tight-fitting lid
- Water
- Fizzy tablet (such as Alka-Seltzer)
- Safety glasses
- Open space
- Adult supervision

What Cristy does:

1. Puts on safety glasses.
2. Fills the film cannister about one-third full with water.
3. Breaks the fizzy tablet in half.
4. Drops the half tablet into the water.
5. Quickly snaps on the lid.
6. Places the cannister with the lid facing down.
7. Steps back to watch!

What happens

When the fizzy tablet touches the water, a chemical reaction begins. The tablet releases a gas called **carbon dioxide**. Because the lid is sealed tightly, the gas cannot escape.

More and more gas builds up inside the cannister, increasing the pressure. Eventually, the pressure becomes too strong for the lid to stay on.

The lid pops off, pushing downward. This creates an equal and opposite force that launches the cannister upward like a rocket.

Science demonstrated

- chemical reactions create gas
- gases take up space
- pressure builds inside sealed containers
- Newton's Third Law Of Motion (for every action there is an equal and opposite reaction)

SCIENCE: FOLLOW-UP ACTIVITIES

1. Ziplock bag experiment

You will need

- Ziplock sandwich bags
- Bicarbonate soda
- Vinegar
- Measuring spoons
- Paper towel

What to do

1. Pour vinegar into the ziplock bag.
2. Wrap bicarbonate soda in a small piece of paper towel.
3. Place the bicarbonate bundle into the bag without letting it touch the vinegar.
4. Seal the bag and place it on the ground.
5. Stand back and watch!

Extension questions

- What happens if you add more bicarbonate soda?
- Does the size of the bag matter?
- Which creates more pressure: warm or cold vinegar?

2: Balloon rocket experiment

You will need

- Balloons
- String
- Straws
- Tape
- Scissors

What to do

1. Thread the string through the straw.
2. Tie the string tightly across the room.
3. Tape an inflated balloon to the straw (be sure to hold the neck of the balloon tightly so it doesn't deflate).
4. Release the balloon.

What happens

Air rushing out of the balloon pushes the balloon forward. This demonstrates Newton's Third Law and thrust, similar to real rockets.

ENGLISH FOLLOW-UP ACTIVITIES

1: Procedural writing: How to launch a film cannister rocket

Students write clear instructions for another class to follow.

Encourage:

- numbered steps
- time connectives
- command verbs
- diagrams and labels

2: Creative writing prompt: My homemade rocket

You used the film cannister rocket idea to invent your own rocket. It can be one huge rocket, or hundreds of tiny rockets. It can be a rocket you can live inside, or a rocket you strap to your bicycle.

Write a story describing the test launch.

- Where are you launching the rocket invention?
- What does it look like?
- How do you feel about the launch?
- What is a problem that could drive your story?

3: Persuasive writing: "Should kids be allowed to build DIY experiments?"

Students argue:

- YES: DIY experiments are vital to learning through doing, help build creative problem solving, and encourage resilience.

Or

- NO: DIY experiments can quickly become dangerous, kids learn better when they're guided by an expert, and too much failure can be disheartening.

Want more?

Are you ready to think more creatively, communicate more powerfully, and thrive through change?

Cristy Burne is an award-winning author, keynote speaker, science communicator and creative learning specialist who combines science, storytelling and adventure to help people reimagine what is possible.

Connect with Cristy to find out more.

Discover more teaching resources.