

Elementary STEM Activity 9

Subject: Science (Force & Motion)

Topic: Balloon Rocket Experiment

Grade Level: 3-5

Objective:

Students will explore how air escaping creates thrust that moves a balloon rocket.

Learning Outcome:

- Explain that air pressure can push objects forward (thrust).
- Measure distance and compare results across trials.
- Describe how changing variables affects motion.

Materials Needed:

- Balloon
- String (3–5 meters)
- Straw
- Tape
- 2 chairs or supports
- Measuring tape

Activity Steps:

1. Tie the string between two chairs, pulled tight.
2. Thread the straw onto the string.
3. Tape an uninflated balloon to the straw (opening facing backward).
4. Inflate the balloon without tying it; pinch the opening.
5. Release the balloon and observe it travel along the string.
6. Measure distance/time and test again with changes (bigger balloon, different angle).

Recording Table:

Trial	Balloon Size (small/med/large)	Distance	Notes
1			
2			
3			

Discussion Questions:

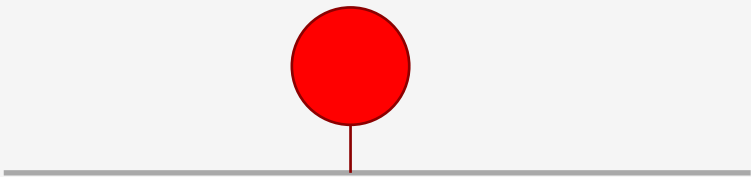
- Why did the balloon move forward?
- What happens with a larger balloon?
- How does friction affect movement?
- Where do we see propulsion in real life?

Extension Activity:

Have students time the rocket and calculate speed (distance ÷ time).

Illustration:

Balloon Rocket



String + Straw