



Stomp Rocket

ACTIVITY INSTRUCTIONS

Suggested Age Range

Ages 7 and up
(young children may need help)

Activity Duration

10 minutes

Materials

- Stomp Rocket kit
- Rigid tube (e.g., 12-inch dowel rod or PVC pipe) with a diameter appropriate for the kit launcher
- Construction paper
- Transparent tape
- Masking tape
- Scissors
- Illustrated instruction sheet for participants
- Optional: markers or stickers for decoration

Setting

Outdoors

ⓘ SAFETY NOTES

Always have an adult present at the launcher, and ensure that rockets launch away from people. Instruct participants to stomp using just one foot, and do not allow them to run up to or jump on the launcher.

Objective

Build and launch a paper rocket.

Background

You can conceive of this activity as an engineering challenge, or a way to discuss air pressure and the physics of flight, or simply as imaginative play. Since many participants will assume that rockets are used only to carry people into space, you might use this activity to discuss that rockets can carry scientific instruments. For example, in December 2021, an Ariane 5 rocket launched the James Webb Space Telescope.

Preparation

1. Set up the Stomp Rocket launcher according to the directions on the box.
2. Use masking tape to draw two or three targets on the ground or on a wall, approximately 15-25 feet away. Each target should be about 5 feet away from other targets. The goal is to provide a couple of different challenges.
3. Consider precutting nose cones and fins. You may also wish to build a sample rocket.
4. Lay out rocket-making materials on tables.

Procedure

1. Invite participants to the table with a question like, "Do you want to launch a rocket?"
2. For participants who are very young or in a hurry, you can invite them to skip the building and instead launch a pre-made rocket from the Stomp Rocket kit. For everyone else, invite them to build a rocket. Their rocket will have a fuselage (a rolled-up paper tube), a nose cone, and fins.

Building a rocket:

3. Tightly roll a piece of construction paper around the rigid tube. Once completely wrapped, tape to hold in place. This creates a rolled-up paper tube that's the correct size for the launcher.
4. Slide the rolled paper off the tube.

CONTINUED ON BACK

A decorative wavy line consisting of several connected, rounded humps, positioned below the text.

Procedure (continued)

5. Make a nose cone by tracing and cutting out a circle, cutting a slit from the edge to the center, and wrapping one side over the other. Participants are welcome to use a pre-cut circle to make this part easier. Alternatively, make a simpler nose cone by folding over one end of the rolled-up paper tube and taping the folded end closed. The nose cone makes the rocket more aerodynamic so that it can slice through the air with less resistance. Important: For a successful launch, the rocket must be airtight—no air can escape out the top.
6. Cut fins of any shape and tape them to the rocket. Fins can help stabilize the rocket and make it fly better.
7. Optional: Participants may wish to decorate and name their rocket.

Launching the rocket:

8. Place the rocket onto the launcher, and confirm the rocket is aimed away from people.
9. Lead a countdown: “3, 2, 1, blast off!”
10. Stomp with one foot to launch the rocket. Invite your participant to aim for a target or work on improving their distance. They can try varying the angle of the launcher or how hard they stomp.

More Resources

- Learn about the European Space Agency’s Ariane 5 rocket that launched NASA’s James Webb Space Telescope: <https://webb.nasa.gov/content/about/launch.html>
- Find out about upcoming NASA launches: <https://www.nasa.gov/launchschedule>

Credit

Adapted from the NISE Network’s Stomp Rockets activity (<https://www.nisenet.org>)



The Statewide Star Party is made possible by the generous grant support of the North Carolina Space Grant.