



Build the Rocket

Objective: Students will build straw rockets to launch at a Mars target.

Materials Needed:

- Rocket Cut-Out Sheet
- Scissors
- Tape
- Straws
- Pencil
- Mars Target
- Markers

Summary of Student Action:

Students can start by decorating their rocket; this is easier to do before it is cut out. On the Rocket Cut-Out sheet, the rectangle is the body of the rocket, while the triangles are the fins. Students cut all three pieces out on their own. Then, they roll the body around a pencil and tape it tightly. Next, they tape the two fins on opposite sides of the pencil. They should bend each to 90° so all the fins are perpendicular to each other. The final step is for the students to slide the rocket to the sharpened end of the pencil and twist the top so that it also becomes pointed and forms the nose cone of the rocket. It should be tight so that very little air can escape.

Once the rocket has been built, students should take it off the pencil and insert a straw into it. Blowing into the straw will launch the rocket. A few Mars targets should be placed on the wall. Students will try to hit the target. They can adjust their rockets after a few attempts, if they'd like. Once they hit the target, they have completed this station and can receive a stamp in their passport.

Setup Instructions:

- Attach Mars targets to a nearby wall. If you'd like to add a launch location, you can put a spot on the ground. Additionally, if you'd like to eliminate the requirement that they hit the target, you can. Give students the stamp after they complete the rocket and have them launch as an optional final step.
- Set out all the supplies along the table so students have access to them throughout their time at the station.

Additional Notes:

- Students may get confused about how to attach and bend the fins. They also may get confused about how to make the nose cone. It could be useful to make an example rocket to display.

PHASE TWO: ROCKET BUILD

The physical journey to Mars begins!

Your task is to build a straw rocket that will make the journey to Mars. Once you have built the rocket, you will launch it towards the Mars target. Hit the target and the mission is a success!

You will need:

- Rocket Template
- Build Procedures Sheet
- Straw
- Pencil
- Scissors
- Tape
- Markers/Crayons/Colored Pencils (to decorate)

Build Procedures:

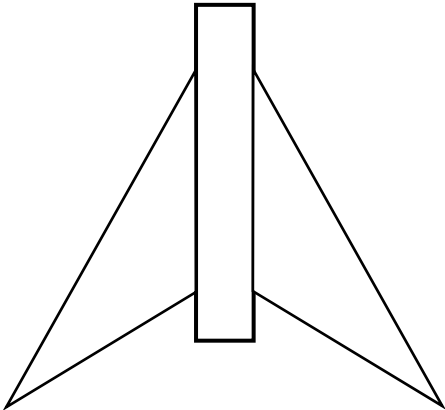
1. If you want to decorate your rocket, do so before cutting it out.
2. Once it has been decorated (if decorating), use scissors to carefully cut out the body (rectangle) and fins (triangles) of the rocket.
3. Roll the body of the rocket around a pencil. Make sure that when you roll the paper, it is tight. Place a piece of tape along the edge to secure the paper around the pencil.
4. Tape one of the fins onto the rocket, about 1 inch from the end near the eraser.
5. Tape the other fin opposite of the one taped in the previous step.
6. Bend each fin so it makes a V.
7. Slide the rocket to the end of the pencil with the lead. Twist the top of the rocket around the sharpened part of the pencil to make a point. This is your nose cone.
8. Remove the pencil and replace it with a straw.
9. To launch, blow into the straw.
10. Launch the rocket towards Mars; try to hit the target!

Optional Extension: *Make changes to the rocket and see if it changes the distance the rocket travels*

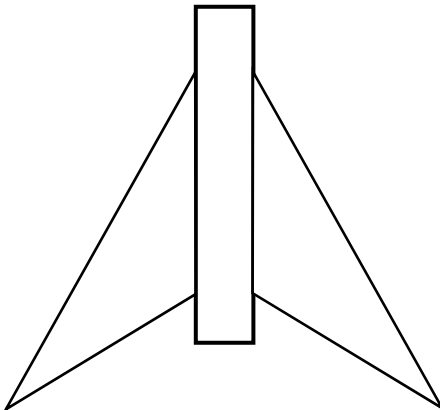
PHASE TWO: ROCKET BUILD

The physical journey to Mars begins!

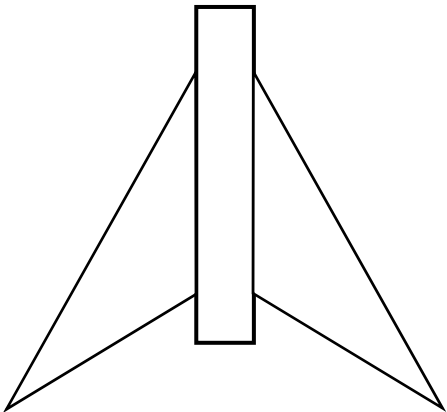
BODY



FINS



BODY



FINS

