

STOMP ROCKET





Next Giant Leap: Stomp Rocket

Objective:

Students build paper rockets that can be launched using a stomp rocket launcher (without template)

Materials Needed:

- ✓ ½ - inch PVC Pipe
- ✓ Construction Paper (2/student)
- ✓ Tape
- ✓ Scissors
- ✓ Circle Stencil (4) (Optional)
- ✓ Stomp Rocket Launcher (Optional)
- ✓ Printed Nose Cone Circles (Optional)
- ✓ Printed Fins (Optional)

Summary of Student Action:

Students investigate Newton's Laws of Motion by building a paper rocket using construction paper and tape and launching their rockets using a stomp rocket launcher. Students should use what they know about air resistance and drag to build the most aerodynamic rocket possible.

Setup Instructions:

- Lay out all materials:
 - ½ - inch PVC Pipe
 - Construction Paper (2/student)
 - Tape
 - Scissors
 - Circle Stencil (4) (Optional)
 - Stomp Rocket Launcher (Optional)
 - Printed Nose Cone Circles (Optional)
 - Printed Fins (Optional)
- Lay out instruction sheets for student reference.

Additional Notes:

Students should decorate their rocket as they see fit. The NASA templates for the rocket fuselage, nose cones, and fins are included and can be used if printing capabilities allow. Instructions sheets for both options (with & without using templates) are provided. If not using templates, students should cut out fins using any shape, but should be encouraged to think of rocket fins they have seen. Students should choose how many fins to use (1-3).



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To Get to the Moon, Astronauts Must Ride Inside a rocket.

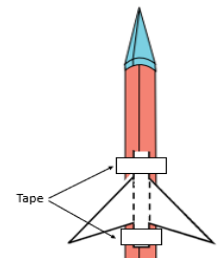
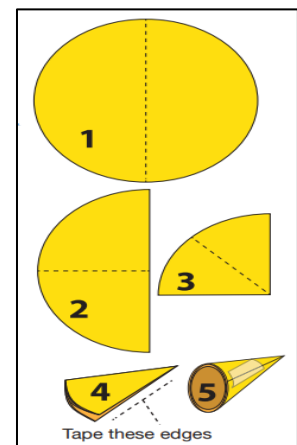
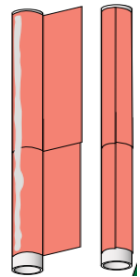
Your task: Build a stomp rocket that can be launched and propelled through the air.

You will need:

- ✓ ½ - inch PVC Pipe
- ✓ Construction Paper (2/student)
- ✓ Tape
- ✓ Scissors
- ✓ Circle Stencil (4) (Optional)
- ✓ Stomp Rocket Launcher (Optional)
- ✓ Printed Nose Cone Circles (Optional)
- ✓ Printed Fins (Optional)

Procedures:

1. Select a piece of paper from the station.
2. Roll the paper around the PVC Pipe wrapping it snug, but not too tight.
3. Tape the paper in place. Do not tape the paper to the pipe.
4. Choose another piece of paper. Trace and cut out one 2¼ inch circle (the largest circle) using the circle stencil.
5. Fold the circle in half to make a 1/2 pie shape.
6. Fold the circle in half two more times to make a 1/4 and then a 1/8 pie shape.
7. Tape the edges as seen in the picture.
8. Spread the nose cone with your fingertip and tape it in place.
9. Attach the nose cone to the top of your rocket and tape it in place. Do not tape the nose cone to the pipe.
10. Cut out at least 1, but no more than, 3 triangle shaped fins.
11. Place the fins on the rocket tube and tape into place along the body of the rocket.





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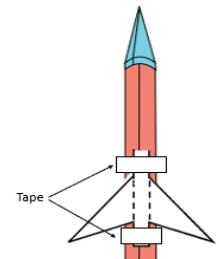
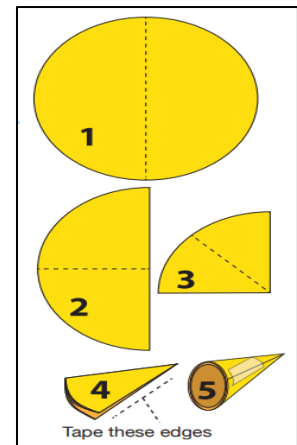
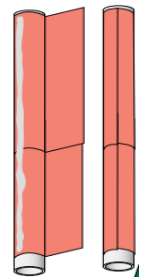
Your task: Build a stomp rocket that can be launched and propelled through the air (with template)

You will need:

- ✓ ½ - inch PVC Pipe
- ✓ Construction Paper (2/student)
- ✓ Tape
- ✓ Scissors
- ✓ Circle Stencil (4) (Optional)
- ✓ Stomp Rocket Launcher (Optional)
- ✓ Printed Nose Cone Circles (Optional)
- ✓ Printed Fins (Optional)

Procedures

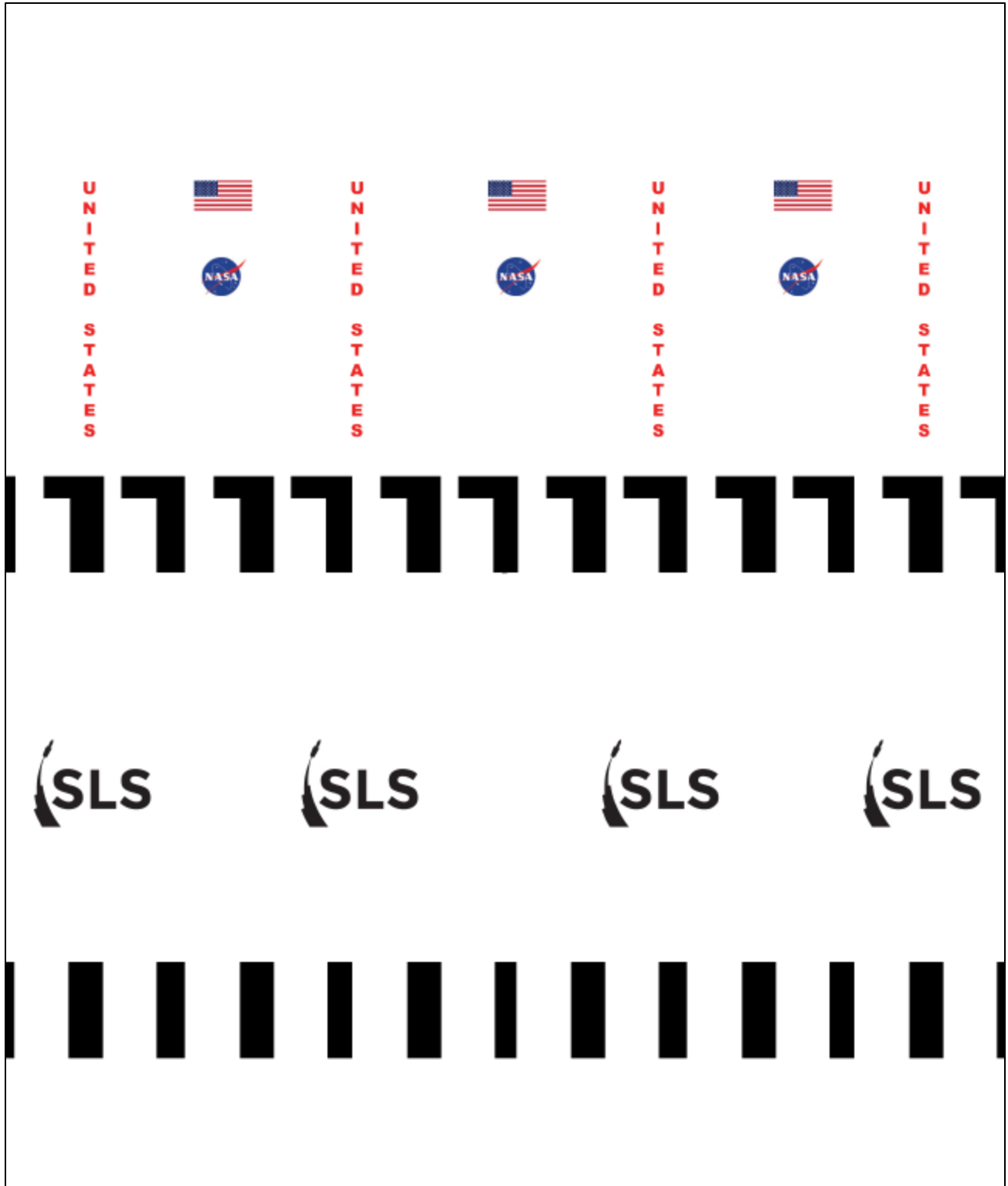
1. Cut out the body of the rocket from the SLS fuselage template at the station.
2. Roll the paper around the PVC Pipe wrapping it snug, but not too tight.
3. Tape the paper in place. Do not tape the paper to the pipe.
4. Cut out one of the circles from the SLS Nose Cone template at the station.
5. Fold the circle in half to make a 1/2 pie shape.
6. Fold the circle in half two more times to make a 1/4 and then a 1/8 pie shape.
7. Tape the edges as seen in the picture.
8. Spread the nose cone with your finger tip and tape it in place.
9. Attach the nose cone to the top of your rocket and tape it in place. Do not tape the nose cone to the pipe.
10. Cut out at least 1 but no more than 3 fins from the Rocket Fins template sheet at the station.
11. Place the fins on the rocket tube and tape into place along the top and bottom of the fin.



SLS Nose Cone



SLS Fuselage



Rocket Fins

