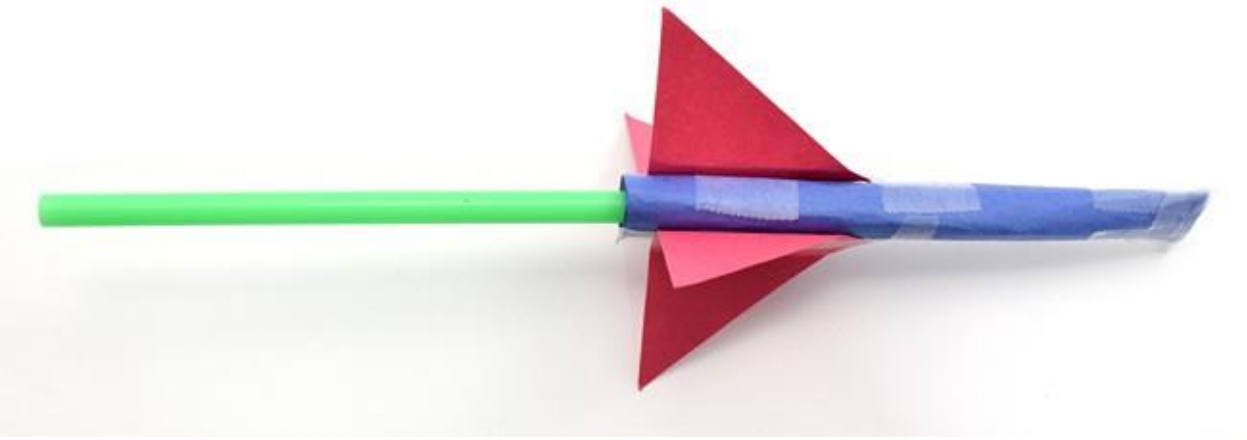
Engineering: Flying Rockets

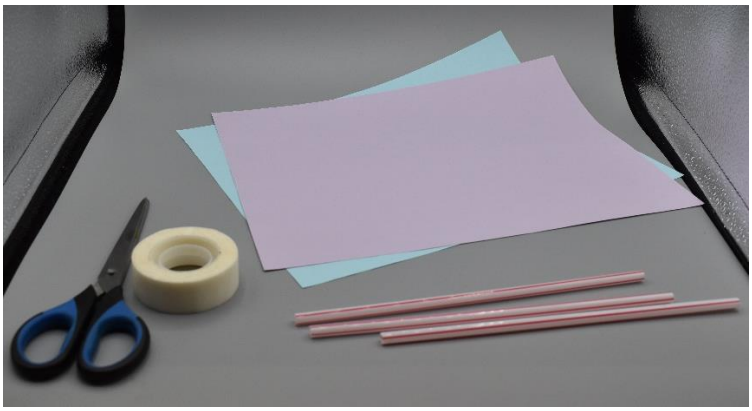
Ages: 6+

Hello everyone. Welcome to the fun and inventive world of making STEAM projects in your own home. In regards with the Kite flying day falling on February 8th, lets try a Flying Rocket activity for this month.



You will need:

- Colorful papers
- Scissors
- Tape
- Drinking straw



Time: 20 minutes

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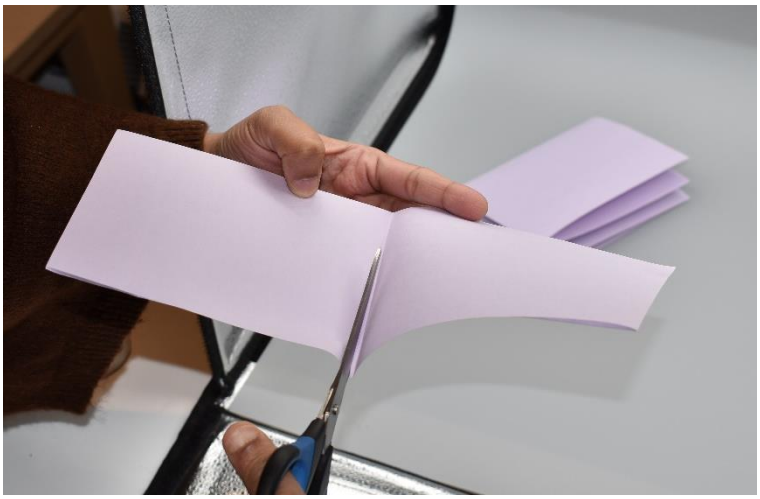
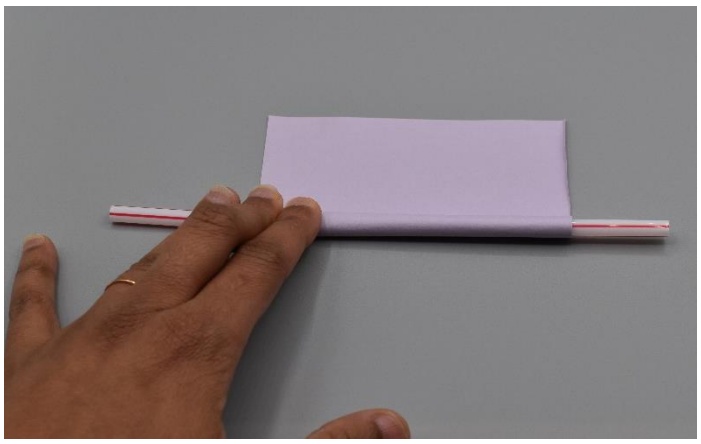
Steps:

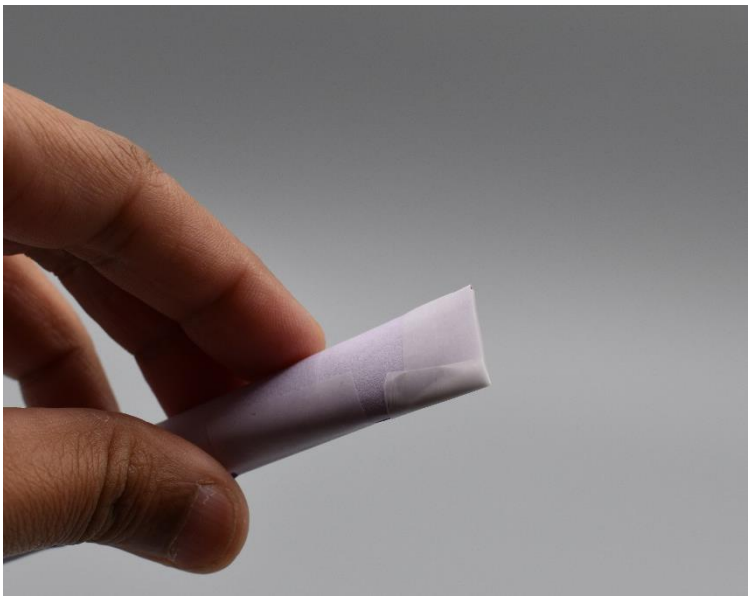
1. Fold the paper in 4 equal parts and cut along the lines.



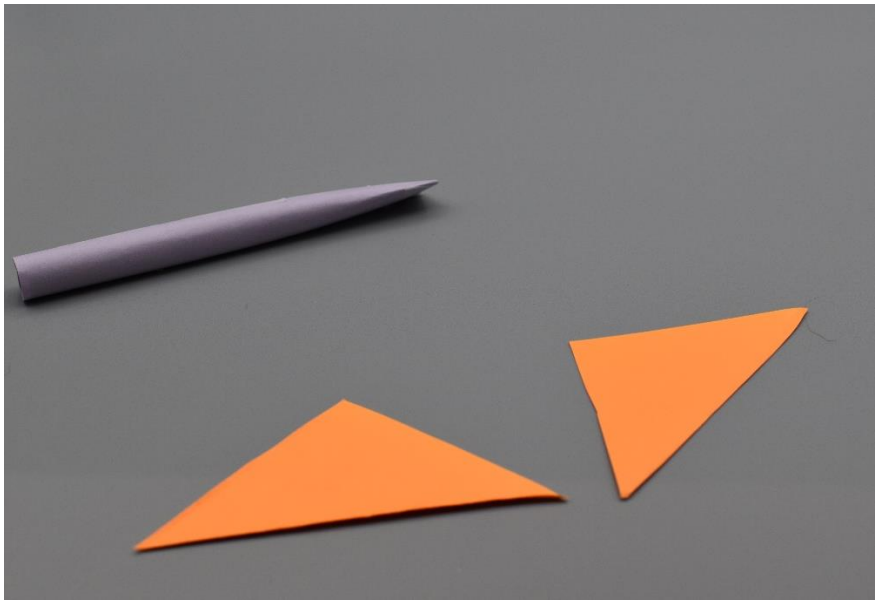
2. Roll the paper with a straw inside. Make sure its neither too tight or too loose. Tape the cylinder closed.



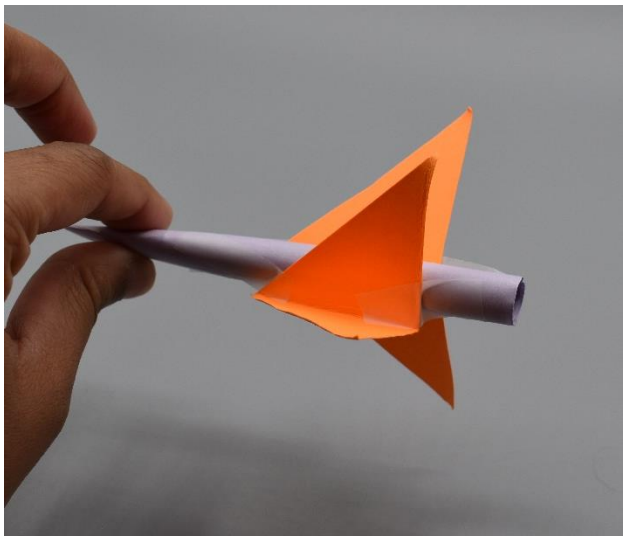
3. Pinch and tape one end of the cylinder to make the nozzle.

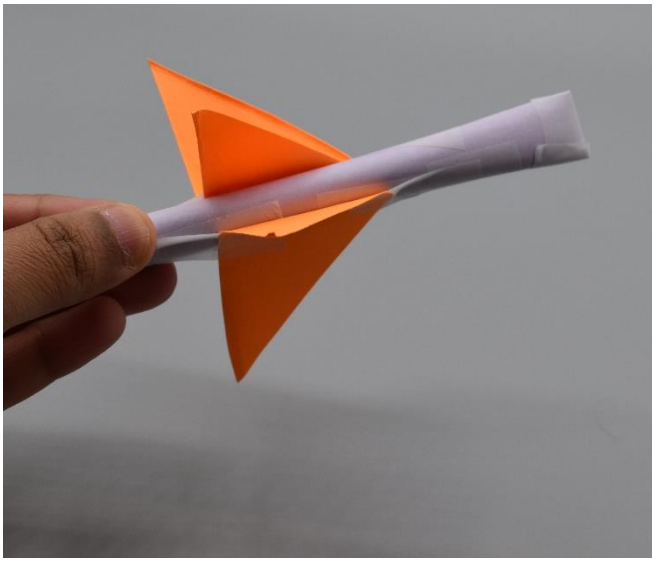


4. Cut some triangles for the rocket wings.

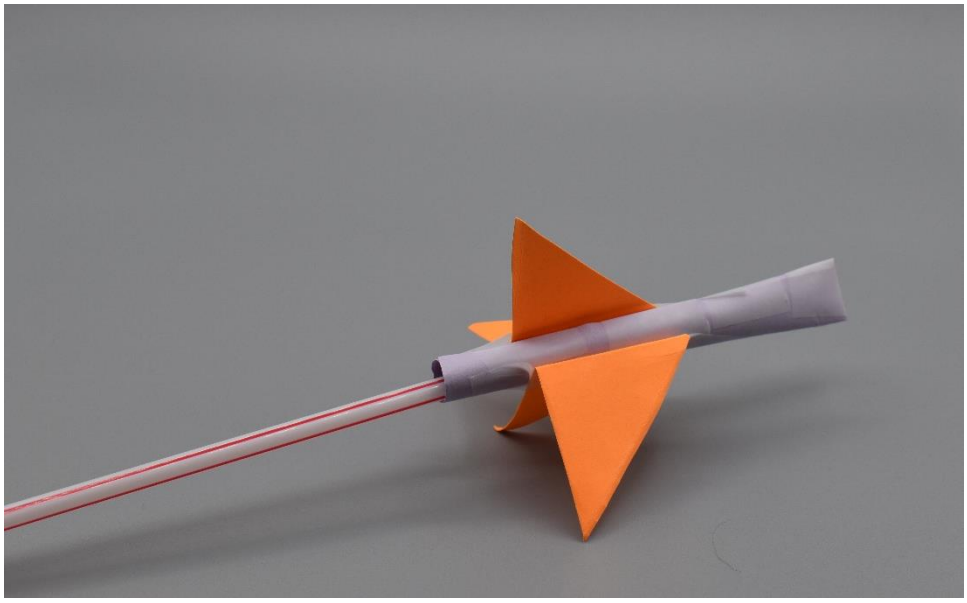


5. Tape the triangles near the end of the rocket (on the opposite side of the nozzle).





6. Insert the straw in through the bottom of the rocket and you are ready to fly!



With plenty of room in front of you—and no obstructions, such as furniture or people—prepare to launch your first rocket! Slide it over a drinking straw. Aim the straw forward, then blow into it as hard as you can. Watch your rocket as it flies.

Is there anything you can do to make your rocket go farther?

- Try different numbers of fins. For example, what happens if you only use two fins instead of four?
- Try different shapes for fins. For example, what happens if you make semicircular fins instead of triangles?
- Try attaching the fins at different points along the length of your rocket. Do the fins still work if you put them in the middle or front of the rocket instead of the back?
- What would happen if you give no fins to your rocket? – would it still fly?

All flying objects, from rockets to airplanes to kites and birds, have something in common—they need to remain stable when they fly. You are probably pretty familiar with what "**stability**" means for objects on the ground. Did you use training wheels when you learned how to ride a bike? Training wheels help keep the bike stable so you do not fall over. The same concept applies to things that fly. They need to stay pointed in the same direction when they fly forward, without spinning or tumbling, which could cause them to crash. Hopefully you created a strong stable rocket!