



Ready Jet Go! Rocket Launcher



Three...two...one...blast off! Defy gravity with rocket engineering.

Ever wonder what it takes to send a rocket into space? Gravity—the force that pulls things down to the Earth—can make rocket launching tricky, but not impossible!

Use engineering, household items and your own imagination to solve this challenge.

Materials

- Printable Rocket Template (next page)
- Empty plastic water bottle with lid
- Scissors or cross-head screwdriver
- Markers or crayons
- Straw
- Clear Tape
- Duct tape

How can you make a rocket go UP when gravity is always pulling things DOWN? We can do it by creating another force that's stronger than gravity—even if just for a little while!



Create Rocket and Launcher

1. Print the rocket template, color, and with an adult's help, cut out as directed.
2. To make your rocket, first form a tube by rolling the body template around a straw (a recycled straw is better for the environment). Remove the straw. Then create a tip by folding over one end of the tube and taping it with duct tape. To the other end tape the three fins to help stabilize the rocket.
3. To make the rocket launcher, have an adult cut a hole in the water bottle lid just big enough for the straw to fit through. (Try using the end of scissors or cross-head screwdriver on a cutting board.) Screw the lid back on the bottle and insert the straw, leaving only an inch inside the bottle. Wrap duct tape around the lid to seal the hole and secure the straw.

Use and Improve your Paper Rocket Launcher

1. Blow air into the launcher through the straw. Then place the rocket on the straw. To launch your rocket, push the air out of the bottle by squeezing it quickly and firmly with both hands. What if you didn't want the rocket to go so high? What could you do differently?
2. Can you find ways to improve your rocket or launcher design to make the rocket go higher? For example, what could a bigger bottle do? How might you change the rocket itself?
3. Add a payload—a passenger or cargo—to your rocket. Attach something small and light, like a small plastic toy or paper clip. What happens? Try changing the weight, size or location. How does this affect your rocket?
4. Sean learns from astronaut Ellen Ochoa that creative play is an important way to prepare for space exploration. Use your paper rocket launcher and create your own space adventure! Where will your rocket take you? Maybe a trip to discover a new solar system, a new star or even a visit to Bortron 7? Invite friends or siblings to join in your creative play.



pbskids.org/readyjetgo



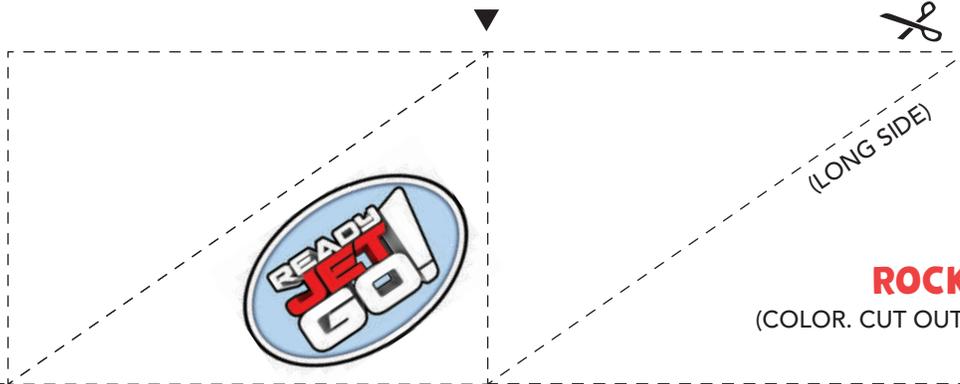
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Rocket Template & Instructions



THREE ROCKET FINS

(COLOR. CUT OUT. TAPE LONG SIDE TO ROCKET BODY.)

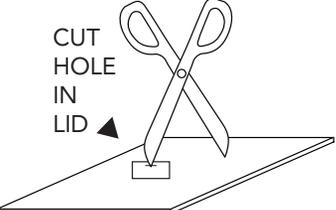


ROCKET BODY

(COLOR. CUT OUT. ROLL AROUND STRAW.)



Instructions

-  STRAW
-  ROLL PAPER AROUND STRAW AND TAPE.
REMOVE STRAW.
-  FOLD OVER AND TAPE.
-  TAPE ALL THREE FINS ON.
-  REMOVE LID
-  CUT HOLE IN LID
-  ATTACH LID
-  INSERT STRAW
TAPE
-  SLIDE ROCKET ONTO LAUNCHER