

Techbridge Girls@Home

Straw Rocket Challenge

Techbridge Girls is committed to supporting our community by providing access to high-quality at-home STEM activities for our girls and curating resources for families and educators. The below activity was designed to empower girls to lead fearlessly by learning and teaching others while sheltering in place.

Have you ever wondered what it would be like to be an astronaut and explore space? Now is your chance to learn about rocket design, and build your own!

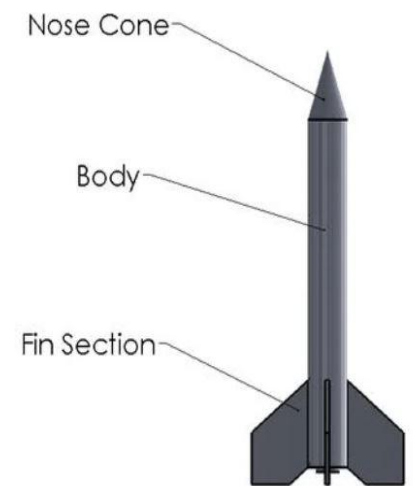
1 Get your materials.

Source materials around the house such as: scissors, tape, glue, straws, cardboard, paper, and a ruler or measuring tape. Consider decorating your rocket with colored pencils or craft materials.

2 Build your design.

A rocket is made up of three main parts: the body, the nose and the fins. The body of the rocket is responsible for holding the engine, which powers the entire rocket and creates enough **energy** so the rocket can fly. The nose of the rocket is shaped like a cone to allow air to flow smoothly around the rocket. This creates less **drag**, or air resistance, on the rocket making it easier to defy **gravity** during take off. Lastly the fins help the rocket fly straight. A rocket has multiple fins for **balance**.

You will be using your straw to launch your rocket by blowing air through it. For your design to be successful, make sure to build the body of the rocket around the straw so it can launch.



Now that we know how the rocket will launch, it's time to start brainstorming! Make sure to think brainstorm the size and shape of each rocket part.. After you design your rocket, make sure you test it by recording how far it goes and how long it soars through the air (you can do this by using a tape measure or yard stick). How can you redesign your rocket to soar further and fly longer?

ASK: This activity concludes the eight-week Techbridge Girls@Home series. Take a moment to reflect on the different Engineering Design Processes you engaged in. Consider decorating the body of your rocket with some reflections during this series - whether that is new STEM insights, your STEM future, or what you want our world to look like post-COVID.

3 Share!

With permission from your parents or guardians, please post a photo of your completed project on Facebook, Twitter, or Instagram, and tag @techbridgegirls so we can see your great work!

CAREER CONNECTION: Aerospace Engineers are responsible for building and repairing aircrafts and spacecrafts, such as rocket ships and planes. Their starting salaries are on average range from \$70,000- \$90,000.

We are proud to support our girls' STEM journeys by providing resources to overcome barriers and to thrive and lead in STEM.