

## **STEM Activities for Programs**

Looking for activities you can implement in your afterschool program today? Say goodbye to googling or searching on Pinterest. Use the following activities in sequence to support youth in building an engineering mindset.

- [First Woman Camp Experience](#): Hands-on activities that accompany NASA's "First Woman" graphic novel series
- [James Webb Space Telescope STEM Toolkit](#): Virtual and classroom resources related to the James Webb Space Telescope.
- [Sun STEM Toolkit](#): Virtual and classroom resources related to the sun.
- [Sustainable Aviation STEM Toolkit](#): Virtual and classroom resources related to aviation.
- [NASA Coloring Pages](#): Color and learn about some faraway worlds with these coloring pages.
- [NASA for Students Grades K-4](#): Fun activities centered around all things NASA. Games, puzzles, color, and more
- [Space Place Art Challenge](#): Space Place monthly art missions. Draw, color or paint the subject of the month.
- [Climate Kids](#): Learn about weather and climate through games, activities, and videos
- [Build to Launch with LEGO Education and Artemis I](#): An interactive digital learning adventure that explores the Artemis I mission to the Moon.
- [Clean Room - Europa Clipper](#): Watch this live YouTube stream as NASA's Europa Clipper, is built and tested.
- [Learn the Phases of the Moon](#): Assemble a printable Moon Phases Calendar and Calculator.
- [Night Sky Network](#): Astronomy clubs bring the wonder of the universe to the public.

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- [NASA Space Voyagers Game](#): A strategy card game where students explore the solar system.
- [Mars Scavenger Hunt!](#): Students participate in a Martian mission by completing the Mars scavenger hunt.
- [Build a Pizza Box Solar Oven](#) - Use easily found materials to create an oven where students can cook s'mores. The activity answers the question "What has engineering got to do with me?" in a way that is fun.
- [Hands-On Math: Fraction Math Trees](#) - This fun hands-on, kinesthetic and visual approach to learning about fractions produces "math art".
- [Welcome to Space Math @ NASA](#) - A collection of math videos, books, and activities that are sorted by grade level, science topic, NASA missions, and engineering topics. All activities are based on NASA Mission and projects.
- [STEM Lessons from Space: Mathematics](#) - A collection of math and engineering activities, videos, and resources with a focus on the International Space Station.
- [The Institute of Electrical and Electronics Engineers](#) - A collection of fun and easy activities for ages 4-18 that cover a broad spectrum of activities—everything from designing devices to address climate change to coding.
- [Can Plants Stop Soil Erosion?](#) Soil erosion can cost the world billions of dollars every year by washing pollutants into our streams and rivers and by causing the loss of farmland. What can you do about this problem?
- [Build a Jumping Robot](#) Can you build a robot that hops like a frog? In this engineering project, you will learn how to build a simple robot that uses the energy stored in a stretched rubber band to jump. You will use the engineering design process to try to make your robot jump higher and farther. How far can you make it jump?
- [Gravity: It's What Keeps Us Together](#) This set of ten easy to understand activities use math to understand gravity on Earth and in space. The activities are kid-centered (for example, what would I weigh on Mars) and use math in an integrated format.

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- [3D Printing by Hand](#): Students will explore how 3D printers work. Then, working in pairs, they will use the same methods used by 3D printers to create a 3D model of an object. This comes with a video for educators and a complete lesson plan.
- [Experiment with Parachutes](#): In this aerodynamics science project, kids test whether the size of the parachute is important for slowing down the speed of the fall. They make a series of parachutes from small to large and test how quickly they fall from the same height.
- [Marble Run Kit & Caboodle Activity](#): Don't be misled by the word "kit" in the title! This activity plan uses easy to find materials to make a marble run (think marble roller coaster!). The "kit" is a complete lesson plan and video.
- [12 Great Ideas for Engineers Week](#): These quick, easy to implement, and fun activities highlight design process and engineering principles. Materials are easy to find at the grocery store or in the afterschool setting.