

## **Science**

**Grades: K-6**

**Date of Lesson: 10/28**

**Title: One Small Step**

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According to NASA, 25 astronauts are Ohio natives, having made nearly 80 space flights, with three of those flights being trips to the Moon. Ohio astronauts have logged more than 22,000 hours in space.

- John Glenn: 1st American to orbit the Earth in 1962
- Neil Armstrong: 1st man to walk on the moon in 1969

Of course, space flight would not have been possible without the rockets!

### **You will need**

- 1 balloon (round ones will work, but the longer “airship” balloons work best)
- 1 long piece of kite string (about 10-15 feet long)
- 1 plastic straw
- tape

### **What to do**

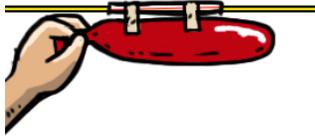
Tie one end of the string to a chair, door knob, or other support.

Put the other end of the string through the straw.

Pull the string tight and tie it to another support in the room.

Blow up the balloon (but don't tie it.) Pinch the end of the balloon and tape the balloon to the straw as shown above. You're ready for launch.

Let go and watch the rocket fly.



### **How does it work?**

It's all about the air...and thrust. As the air rushes out of the balloon, it creates a forward motion called THRUST. Thrust is a pushing force created by energy. In the balloon experiment, our thrust comes from the energy of the balloon forcing the air out. Different sizes and shapes of balloon will create more or less thrust. In a real rocket, thrust is created by the force of burning rocket fuel as it blasts from the rockets engine – as the engines blast down, the rocket goes up!

### **Extension**

Learn about the mathematician that helped make space travel possible, Katherine Johnson.



<https://www.nasa.gov/content/katherine-johnson-biography>