

OH WOW! Moment

Activity by Audra Carlson, Education Manager

Grade Level: suitable for all ages

Launch Your Own Satellite

AT A GLANCE:

Make your own satellite and try to launch it. Experiment with mass and volume, as well as some very basic aeronautics.

STUDENTS WILL BE ABLE TO:

Demonstrate the process of science by posing questions and investigation phenomena through language, methods and instruments of science.

BACKGROUND INFORMATION:

Satellites have become an important part of our society. They enable communication, help to predict weather phenomena, create detailed maps for navigations, and allow us to explore our Earth and universe like never before. The very first successful launch of a satellite was accomplished by The Soviet Union in 1957.

DETAILED EXPLANATION:

On October 4, 1957, the Soviet Union successfully launched Sputnik I, the world's first artificial satellite. It was about the size of a beach ball (58 cm. or 22.8 inches in diameter), weighed only 83.6 kg. or 183.9 pounds, and took about 98 minutes to orbit the Earth on its elliptical path. That launch ushered in new political, military, technological, and scientific developments. While the Sputnik launch was a single event, it marked the start of the space age and the U.S.-U.S.S.R space race.

MATERIALS:

- Styrofoam balls of various sizes
- Flat toothpicks
- Bendable straws

PROCEDURE:

1. Choose a Styrofoam ball and carefully push toothpicks through it so that the toothpick pokes out of both sides
2. Add as many or as few toothpicks as you think are necessary in order to create the best launch.
3. Choose a straw and bend it at the joint. This is your Launchpad.
4. Place your satellite on the short end and blow through the long end to launch your satellite!

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TRY THIS:

- Try different amounts of toothpicks. Does your satellite fly better with more or less?
- Try different sizes of Styrofoam balls.
- Try different materials like paper and aluminum foil. Do these fly better?

How does the weight and mass of your satellite affect its flight?

What do you notice or observe?

What conclusions can you make?

What can you do differently next time?