

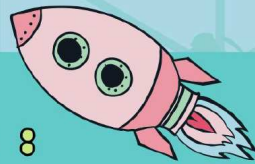
## DIY MODEL SATELLITE

A **satellite** is a small object that orbits, or goes around, a planet. Technically, the Earth's moon is a natural satellite! Artificial satellites are objects that are sent into orbit by humans. Even though you can't see them, artificial satellites are constantly rotating around Earth. Without them, we wouldn't have TV, internet, long-distance phone calls, or Global Positioning System (GPS) directions. Scientists also use them to take photos of space, Earth, and weather patterns.

Satellites come in many shapes and sizes depending on what they are used for. But most satellites have an antennae and a power source. The antennae sends and receives information to and from Earth using radio waves. The power source is often wing-like solar panels that collect energy from the sun. In this activity, we'll construct a model of a basic satellite.

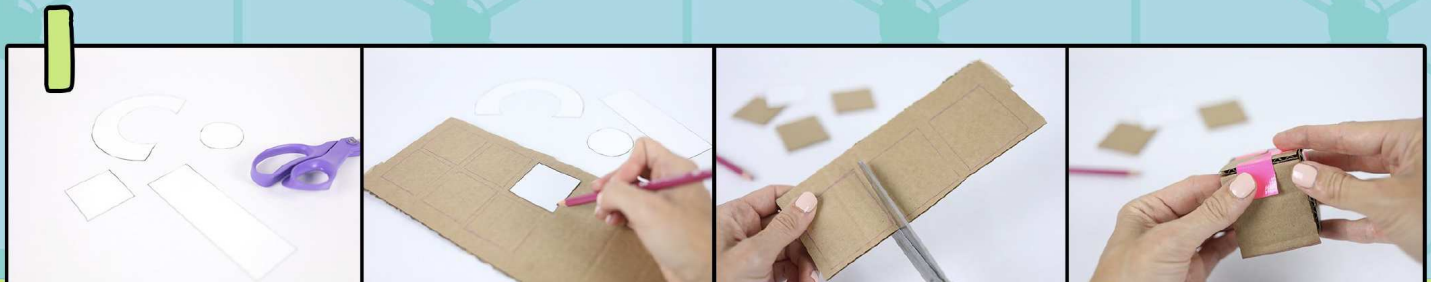


Sydney Hamilton builds communication satellites for Boeing that allow our phones to work.



### YOU WILL NEED :

- Scissors
- Cardboard
- (2) Brads
- Tape
- Pencil
- Paper
- Glue
- Printed Template (Page 3)



Print out template. Cut out shapes. Trace 6 squares onto cardboard. Trace 6 more onto paper. Cut out shapes. To make the body, assemble the 6 cardboard squares into the shape of a cube. Secure each seam with tape.

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2



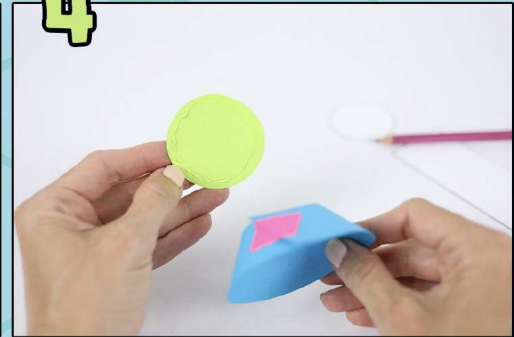
Poke a brad through center of 2 paper squares. Glue squares to left and right side. The arms of the brads should be poking outward. Glue remaining 4 paper squares to cube.

3



Poke a brad through center of 2 paper squares. Glue squares to left and right side. The arms of the brads should be poking outward. Glue remaining 4 paper squares to cube.

4



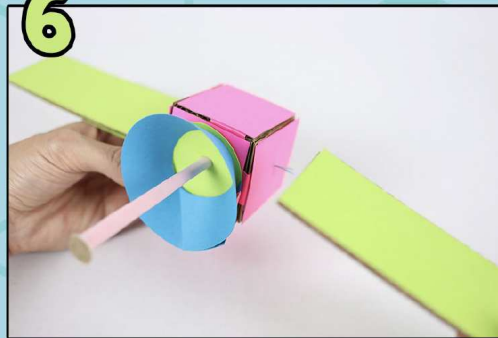
To make the solar panels, trace 2 large rectangles onto cardboard. Trace 4 more onto paper. Cut out shapes. Glue paper to top and bottom of each solar panel.

5



Now trace smaller rectangle and small circle onto paper. Cut then roll. With glue, secure seam then attach to center of large circle. Attach small circle to end of antennae with glue.

6



To assemble satellite, glue antenna to front. Add glue to brad then slip each arm of brad in between the paper and the cardboard of each solar panel.

## LEARN MORE

Awesome Space Tech by Jenn Dlugos and Charlie Hatton  
Prufrock Press, 2019

You Wouldn't Want to Live Without the Internet! by Anne Rooney  
Scholastic, 2015

Adventures in Engineering for Kids: 35 Challenges to Design the Future by Brett Schilke  
Rockport Publishers, 2020

## THINK ABOUT IT!

Satellites that don't work anymore stay in space. They are officially called "orbital debris" and unofficially called space junk! The oldest non-functioning satellite that's still floating in space is the Vanguard I. It's a research satellite from 1958. It stopped working in 1964 and has been orbiting Earth since then.

Orbital debris can cause damage to spacecraft because both are traveling thousands of miles per hour. That's why organizations like NASA try to track every item in space that's bigger than a marble. What else should we do about space junk? What kind of rules or programs would you create to help control it?

## FUN FACT!

The world's first artificial satellite launched in 1957. It was called Sputnik I, and it was the size of a beach ball.

x6

x1

SATELLITE  
TEMPLATE

x1



x6

# SATELLITE TEMPLATE

