

# Build a Spacecraft

SMAP satellite image: NASA. [Discover how scientists study Earth from above!](#)

Scientists use satellites and spacecraft to study the Earth from outer space. They take pictures of Earth's surface and measure cloud cover, sea levels, glacier movements, and more.

## Materials Needed:

Paper, pencil, craft materials (small recycled boxes, cardboard pieces, paperclips, toothpicks, popsicle sticks, straws, cotton balls, yarn, etc. You can use whatever supplies you have!), fastening materials (glue, tape, rubber bands, string, etc.)

## Instructions:

Step 1: Decide what you want your spacecraft to study. Will it take pictures of clouds? Track forest fires? Measure rainfall? Be creative!

Step 2: Design your spacecraft. Draw a picture of what your spacecraft will look like. It will need these parts:

Container: To hold everything together.

Power Source: To create electricity; solar panels, batteries, etc.

Scientific Instruments: This is the why you launched your satellite in the first place! Instruments could include cameras, particle collectors, or magnetometers.

Communication Device: To relay information back to Earth.

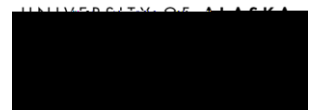
Image: NASA SpacePlace

Orientation Finder: A sun or star tracker to show where the spacecraft is pointed.

Step 3: Build your spacecraft! Use any craft materials you have available. Let your imagination go wild.

Step 4: Your spacecraft will need to survive launching into orbit. Test your spacecraft by gently shaking or spinning it. How well did it hold together? Adjust your design and try again!

Model spacecraft examples  
Courtesy NASA SpacePlace.



# Studying Earth From Above

NASA is best known for exploring outer space, but it also conducts many missions to investigate Earth from above. Scientists use the information