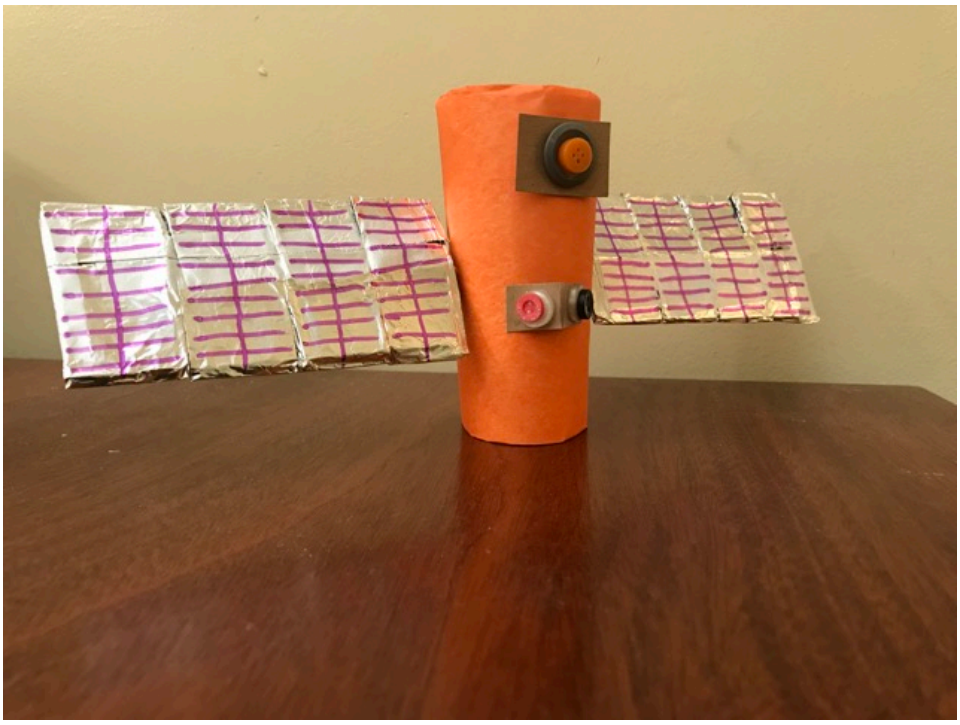
STEAM CALIPSO Satellite Building Activity



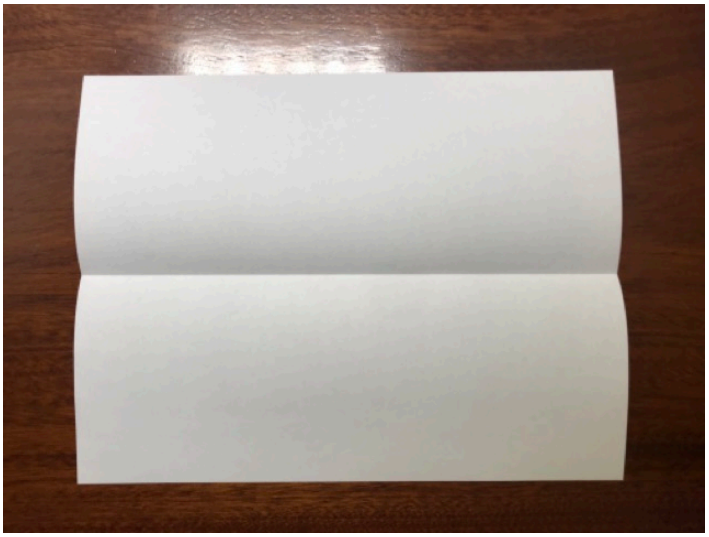
Creating CALIPSO

<u>Supply List</u>

Toilet paper roll, sheet of colored construction paper, or plain printer paper
Very small nail, like ones used to hang small pictures
Colored tissue paper, if using a toilet paper roll
Tape
Glue
Long bamboo skewer
Soft cardboard from a kleenex, cereal, or similar box
Scissors
Tin foil
Colored sharpies
An assortment of different sizes/colors of buttons

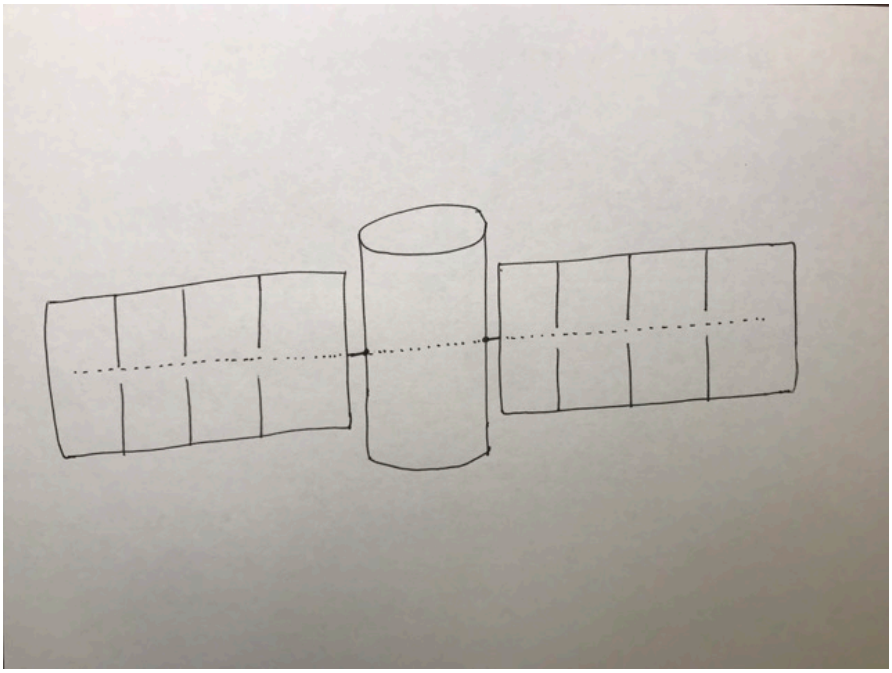
Construction Process

1) Start with a toilet paper roll OR
   If using a piece of plain or construction paper, cut the paper in half lengthwise along the fold down the middle.



   Roll the half sheet into a tube about the size of a toilet paper roll. Tape it on both ends and along the seam so that the tube stays in the rolled shape.

CALIPSO Body and Solar Panel Diagram



2) Take a small nail and poke holes in opposite sides of the middle of the tube, so that the skewer can pass through the center of the tube. The dotted line in the diagram shows where the skewer will be.

3) For the toilet paper roll, cut a piece of tissue paper a little smaller than a sheet of paper, and roll it around the toilet paper tube, tucking the extra into the ends of the tube. Tape the seam so that the paper stays tight on the roll. You should still be able to find the small nail holes by looking inside the tube or through the tissue paper.

4) Poke a single bamboo skewer through the two nail holes that were poked into the tube. Make sure that the skewer extends evenly on either side of the tube.

5) Cut thin cardboard into four long strips that are slightly longer than the length of the exposed skewer on either side of the tube.

6) Sandwich one exposed skewer between two pieces of cardboard, first by taping one piece to one side of the skewer and then taping the second piece of cardboard to the first, so that you can no longer see the skewer in between. Do the same to the other exposed skewer.

7) Cut three narrow slits into the cardboard on each side as shown in the diagram, but stop cutting before the scissors reach the skewer. You can choose to draw lines instead of cutting slits. These “wings” are the solar panels on either side of the satellite. Why do you think a satellite might need solar panels?

8) Cut two pieces of tin foil to wrap around both lengths of cardboard, and secure it with glue or tape.

9) If you chose to cut slits in the cardboard, rub your finger over the tin foil to find where the slits are, and then cut through the foil at those places.

10) Use a colored sharpie to mark a solar panel grid on the tin foil.

11) Cut small squares of cardboard and glue or tape them to the satellite tube. Glue buttons on the cardboard to represent CALIPSO’s LIDAR instruments.

12) You should be able to swivel the bamboo to adjust the angle of the solar panels.

VOILA! You’ve made your own CALIPSO satellite!