

Activity Instructions

Part I - Rocket Construction

The following items will be needed for this part of the activity:

per group:

- bubble tea (wide diameter) straw
- construction paper
- fine grit sand paper (P150 - P180)
- floral foam
- craft knife
- scissors

per class:

- glue gun

Step 1

The bubble tea straw will be the main body of the rocket. Cut out the wing stencil provided in the *Student Handout* and trace around it on the construction paper three separate times. Cut out the traced shapes. Using the glue gun, attach the wings to the base of the rocket. Make sure to space the wings so that they are equal distances from each other.

Step 2

Using the craft knife, cut off a small rectangular prism from the floral foam, making sure the smaller face is bigger than the opening of the bubble tea straw. Push the straw into the foam prism until it is about halfway in. Use the knife and the sandpaper to remove excess foam from the sides of the rocket body. The cylindrical piece of foam should fit snugly in the body of the rocket. Use the sand paper to shape the protruding part of the foam into a tip (**Figure 1**).



Figure 1

Part II - Rocket Launch

The following items will be needed for this part of the activity:

- rocket launcher and pad (see *Prep Instructions*)
- rocket (see Part I)
- bangles or other bracelets
- duct tape or packing tape
- measuring tape

Step 1

Observe how the angle of the launcher varies with the placement of the clip. Start with the launcher at a 45 degree angle (**Figure 2**).

Step 2

Place a bangle on the floor to mark the predicted landing spot for the rocket. Ask a team member to stand near a point halfway between the launch pad and the bangle. He or she will observe the flight from the side to estimate the maximum height reached by the rocket.

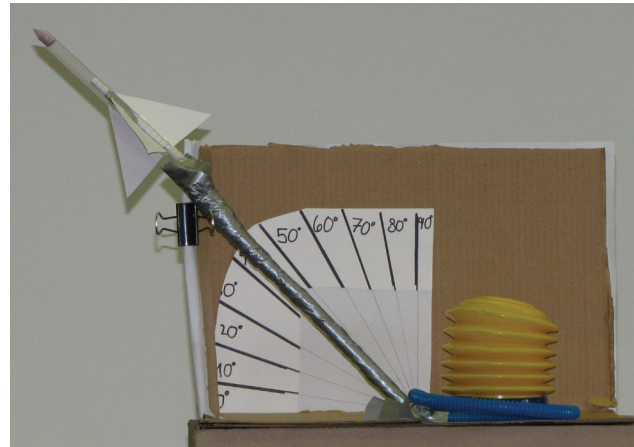


Figure 2

Step 3

Launch the rocket by stomping on the bellow pump.

Step 4

Mark where the rocket lands with a piece of tape. Measure the horizontal distance travelled by the rocket. Estimate the maximum height reached by the rocket based on the team member's observations.

Step 5

Change the launch angle by changing the position of the binder clip. Repeat Steps 2-4 as necessary until the desired number of samples and angles have been reached.