STRAW ROCKETS

Straw Rockets is an excellent opportunity for students to practice the engineering design process. This activity provides students with a template that creates a rocket that can be launched from a straw. They are then challenged to modify the design to see how the changes impact the rocket performance. Length, fin shape or angle can be changed–one variable at a time–to see how the rocket launch performs, and compares to the control design.

MATERIALS

- ☐ Pencil
- ☐ Scissors
- ☐ Tape
- ☐ Straws
- ☐ Metre measuring ruler
- ☐ Rocket template

STEPS

1. Carefully cut out the large rectangle on the rocket template. This will be the body of the rocket.
2. Wrap the rocket body around a pencil length-wise and tape it closed to form a tube.
3. Using the sharpened end of the pencil, twist the top of the rocket body into a nose cone.
4. Carefully cut out the two fin units.
5. Fold along the dotted lines.
6. Tape the rectangle part of the fit tape it to the rocket body. Align the bottom of the rectangle to the bottom of the rocket tube. Nothing should stick out past the bottom of the rocket body.
7. Bend the fins so that each fin is at a right angle to its neighbor. Looking from the bottom of the rocket, the fins should look like a "+" mark.
8. Remove the pencil and replace it with a straw.
9. Blow into the straw to launch the rocket. (It works best if the straw is about half-inserted into the rocket)
10. Use the meter stick to measure, the distance it travels, then record the distance on the data log.
11. Next, make new rockets by altering the template. Try different rocket lengths, fin shape, or angle. Record each design change and distance in the data log.
12. Share your findings, how does the length of the rocket effect how far it flies?

ROCKET TEMPLATE

ROCKET BODY

ROCKET FINS