PAPER ROCKETS ACTIVITY

Introduction

Have you ever seen a rocket blast off to space on TV? To be able to do that, the engineers who designed it, made sure that the way it was shaped, that the rocket can fly all the way to space from here. Let's try designing a rocket of your own!

Learning Objectives

1. Understand the basics of aerodynamics and the design process.

Materials

1. Two pieces of paper
2. Scissors
3. Pencil
4. Drinking straw
5. Ruler
6. Access to a space to "launch" rockets (ex. hallway)

Step-by-Step

1. Cut one piece of paper into four rectangles.
2. Choose one rectangle and wrap it around a pencil (making a cylinder shape). The long part of the paper should be wrapped around the length of the pencil.
3. Tape paper closed so the cylinder doesn't unravel (take the paper closed but not onto the pencil) and slide off the pencil.
4. Pinch one end of the cylinder closed and tape it shut (front of your rocket!)

5. This is the first rocket- without fins and for the students to compare with and without- and how far it will go.
6. Slide the rocket in a straw and launch your rocket by blowing very hard through the straw.
7. Students can measure how far their rocket goes from where they are standing to where it lands. Try launching it multiple times to see how far you can go.
8. Once you have your data, begin creating your second rocket with one of the remaining rectangles and follow steps 2-4.
9. Cut 2 right triangles from a separate piece of paper. The hypotenuse should measure roughly 8 cm.
10. Fold the triangles in half (each triangle should look like 2 fins)
11. Have fun decorating and designing your fins! Feel free to experiment with different sizing, but remember triangles are key to this rocket's launch!
12. Attach the fins and you are ready for take off! Record data on how far your rocket goes this time, and do many trials like before.

Conclusion Qs

1. What difference did the fins make on your rocket compared to your first rocket? Share any data you may have!

2. Why do you think we used triangle shapes as fins?