



ACTIVITY PLAN



Grades: 4, 5

Subject: Aerospace Engineering

Topic: Rocketry

Lesson: Paper Rockets

Objectives:

- Explain the role of fins on rockets
- Describe which forces act on the paper rocket

Materials:

- Two pieces of paper
- Scissors
- Pencil
- Drinking straw
- Ruler

Instructions:

1. Cut one piece of paper into four smaller rectangles to make four rockets
2. Wrap one of the paper rectangles around a pencil to form a cylinder, with the long edge of the paper along the length of the pencil.
3. Tape just the cylinder (not the pencil) closed so it does not unravel
4. Pinch one end of the cylinder shut and seal it with tape to make the front
5. Slide it over a drinking straw
6. After ensuring no one is in your way, aim the straw forward, then blow into it as hard as you can
7. Now repeat steps 2-5
8. To make fins now, cut out two right triangles (with a 90-degree angle in one corner) from the other piece of paper (the long sides of the triangles should be about eight centimeters and you will fold each triangle to make two fins, so you will have four fins total)
9. Draw a line from the 90-degree corner to the middle of the long side of the triangle that splits one triangle in half
10. Draw two lines parallel to the first line (one on each side), about five millimeters away from it
11. Fold the triangle up along these two lines. The result should be two triangles sticking up in the air (the fins), with a flat part connecting them in between
12. Tape the flat part to the side of your cylinder, toward the open end
13. Repeat these steps for the other triangle, and tape it to your cylinder on the opposite side of the first one. The result should be four fins that form a "+" shape when you look at the rocket from either end
14. Repeat step 5 and 6



Notes:

We'd recommend watching this video to follow along:

English -

<https://www.youtube.com/watch?v=0hThMoHB88w>

Spanish -

<https://www.youtube.com/watch?v=k90Fj9vzePU&t=1s>