

Straw Rocket Class Pack

Teacher Instructions



Kit Contents

The Straw Rocket Class Pack should contain the following components. If anything is missing, call Customer Service at 800-358-4983.

- 120 Precision Straws
- 100 – 3" x 5" index cards
- Pound of modeling clay

Tools and Materials Needed (not included):

- Ruler
- Scissors
- Pencil
- Transparent tape

Setup and Implementation

Make enough copies of the Student Instructions on the following three pages so each student has a copy. The Student Instructions provide basic assembly instructions. Students can experiment with different fin designs and placement, different number of fins, rocket body lengths, and nose cone shapes.

Divide the class pack materials equally for the number of students in your class. The class pack is itemized so 30 students can each make four rockets similar to the one pictured on the Student Instructions.

For each rocket, the students will need the following materials:

- 1 Precision Straw
- 1/2 of a 3" x 5" index card (cut the index cards in half – you will have extra halves for students who want to try bigger fin designs)
- Small piece of clay
- Several pieces of tape
- Tools listed above (may be shared by students)

Launching the Rockets

To launch the straw rockets, use the Pitsco Straw Rocket Launcher (20426) and carefully follow the launch directions included with the launcher. Make sure to read the Safety section and that students follow the safety rules.

Tip: If you want visual instructions for building and launching straw rockets, refer to the *Dr. Zoon Straw Rockets Video* (DVD 59700).



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Pitsco Straw Rocket

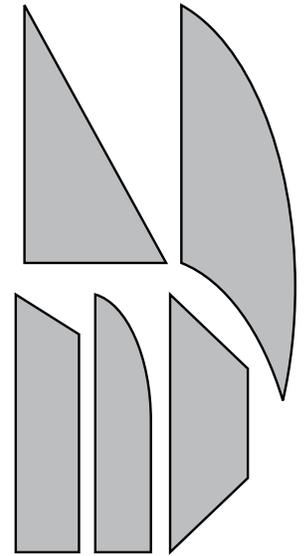
Student Instructions



Materials and Tools Needed for One Rocket

(You may have to share tools with other students.)

- Precision Straw
- Half of an index card
- Small piece of clay
- Several pieces of tape
- Ruler
- Scissors
- Pencil



**Fin Design
Suggestions**

Building the Rockets

1. Design a rocket. For your rocket, determine the following:
 - Fin shape
 - Number of fins
 - Rocket length
 - Nose cone shape

Note: There are some suggested fin designs at right, but you are not limited to these suggestions.

2. Draw your chosen fin shape on an index card, drawing as many fins as you wish to have on your rocket, usually two to four fins per rocket (Figure 1).

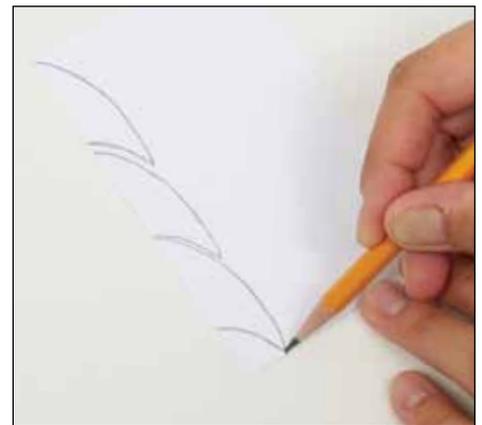


Figure 1

3. Using scissors, cut out the fins (Figure 2).

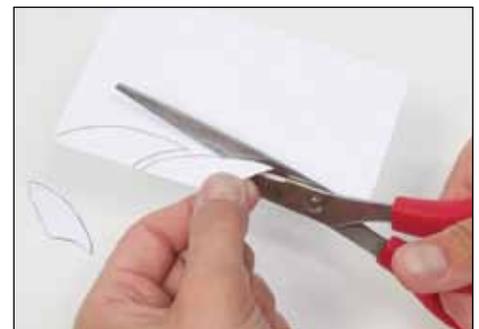


Figure 2

4. Cut the straw to the desired length with the scissors; the straw serves as the rocket body (Figure 3).



Figure 3

5. Cut a piece of tape the length of the edge of the fin that is to be connected to the rocket body. Place the tape on the edge of one fin (Figure 4). Repeat this for all the fins (Figure 5).

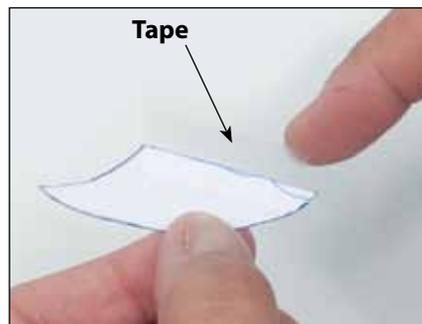


Figure 4



Figure 5

6. Attach the fins so they are evenly spaced around the straw (Figure 6). Carefully trim off any excess tape.

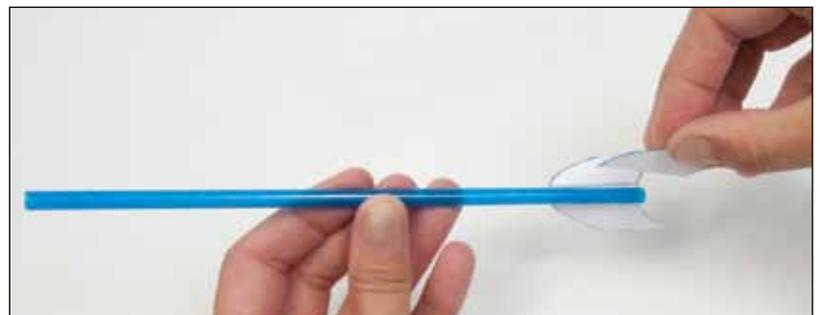


Figure 6

7. Knead the clay to soften it, and carefully shape the clay to match your nose cone design (Figure 7).



Figure 7



Figure 8

8. Press the nose cone on top of the straw rocket body (Figure 8). Some of the clay should go inside the straw rocket body. The outside edge between the straw and the nose cone should be sealed carefully with the clay.

Your rocket is done! Your teacher may provide enough materials to make several rockets. If so, try different fin designs, rocket body lengths, and nose cone shapes.

After making all your rockets, you will launch them using the Straw Rocket Launcher (Figure 9). Use data charts and tables to determine how the performance of the different rockets varies.



Figure 9