

Goal: Students will predict the point of impact after building their own rocket (see instructions on the last 2 pages), and launching it at a specific power and angle.

Grade Levels: 4-Adult

Method: Students will be given a specific Power and Angle by their teacher. We'll call this the Final Launch Settings. They may perform two Test Launches using any combination of Powers and Angles other than their Final Launch Settings. Students must give reasons for how they selected their Test Launch Settings. After completing their test launches and recording their distance, students must predict the point of impact when launching with the Final Launch Settings.

Grouping and Variations: You may have each student work as individuals or place them in small groups. This may be determined by time and the number of Elasti-Launchers you have. You might give every team the same Final Launch Settings, or use a variety of settings. You could also give each team 2 or 3 Final Launch Settings so they can modify their methods of choosing their Test Launch Settings as they go.

Sample Final Launch Settings:

<u>Power</u>	<u>Angle</u>
8	35°
5	50°
3	45°
7	15°



Make copies of the second page for student worksheets.

Elasti-Launcher: Launch Predictions

Team Members: _____

Mission Date: _____

Directions:

- A. Write down the Final Launch Settings as your teacher gives them to you.
- B. Select two Test Launch Settings that will help you predict where your rocket will land when it is launched using the Final Launch Settings. Do not use the exact Final Launch Settings for your Test Launch Settings. One number may be the same, but not both.
- C. Explain why you selected your Test Launch Settings.
- D. Launch two rockets using your Test Launch Settings and record their Distance.
- E. Based on the results of your Test Launches, predict and write down where you think the rocket will land when launched using the Final Launch Settings.
- F. Launch your rocket using the Final Launch Settings and record the Distance.

Mission #1			
Test Launch 1	Angle Setting		Distance
	Power Setting		
Test Launch 2	Angle Setting		Distance
	Power Setting		
Explanation			
Final Launch Settings	Angle Setting		Predicted Distance
	Power Setting		Actual Distance

Mission #2			
Test Launch 1	Angle Setting		Distance
	Power Setting		
Test Launch 2	Angle Setting		Distance
	Power Setting		
Explanation			
Final Launch Settings	Angle Setting		Predicted Distance
	Power Setting		Actual Distance

Make Your Own Projectiles

Simply use the template provided (next page) or have students create their own fin or wing designs. Attach the fins with glue or tape to the body of a pen with the writing section and end cap removed. Standard BIC™ pens or Papermate™ pens with the white housings work great. Just be sure that the pen housing you use can easily slip unrestricted on to the launch guidance rod.

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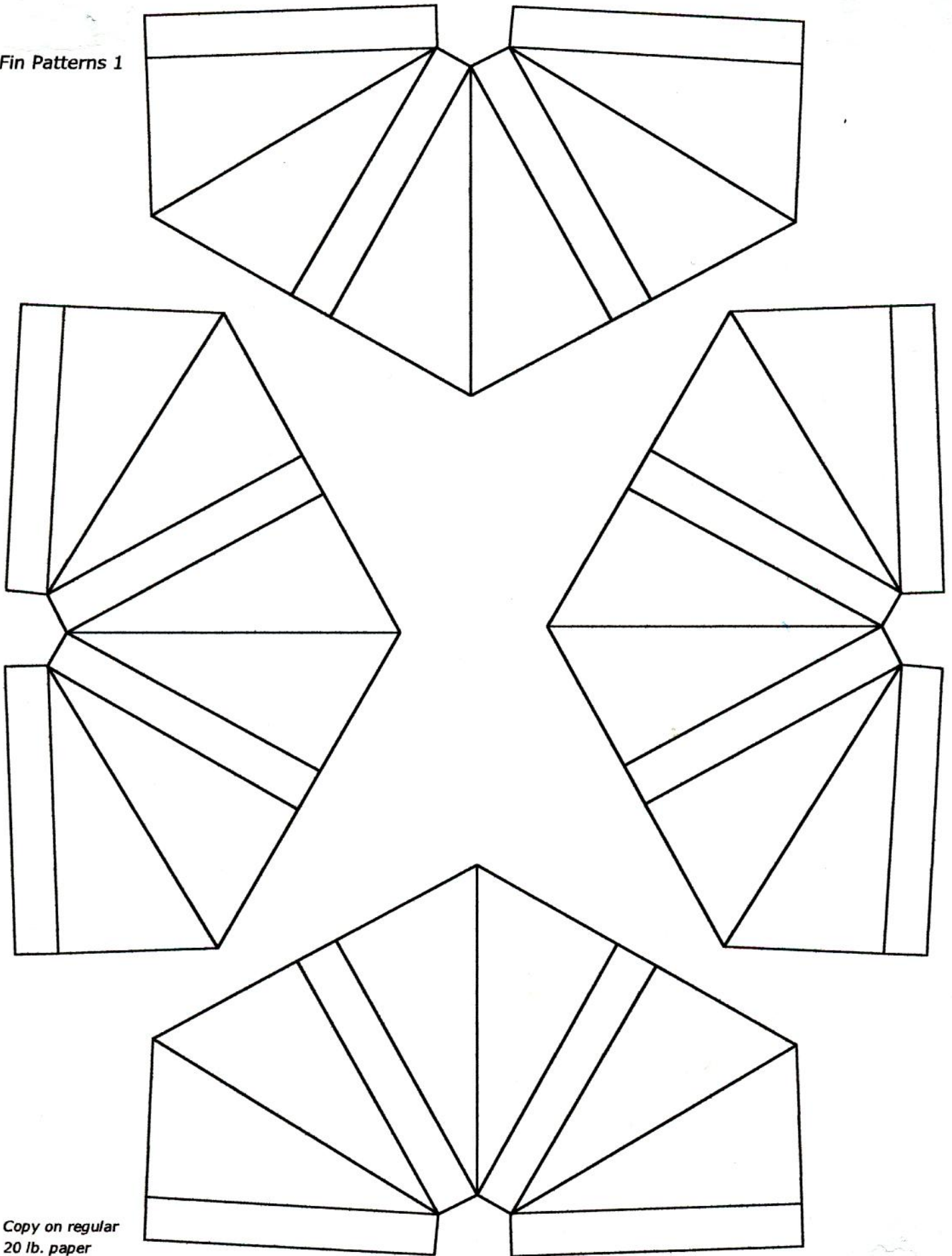
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Fin Patterns 1



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20 lb. paper