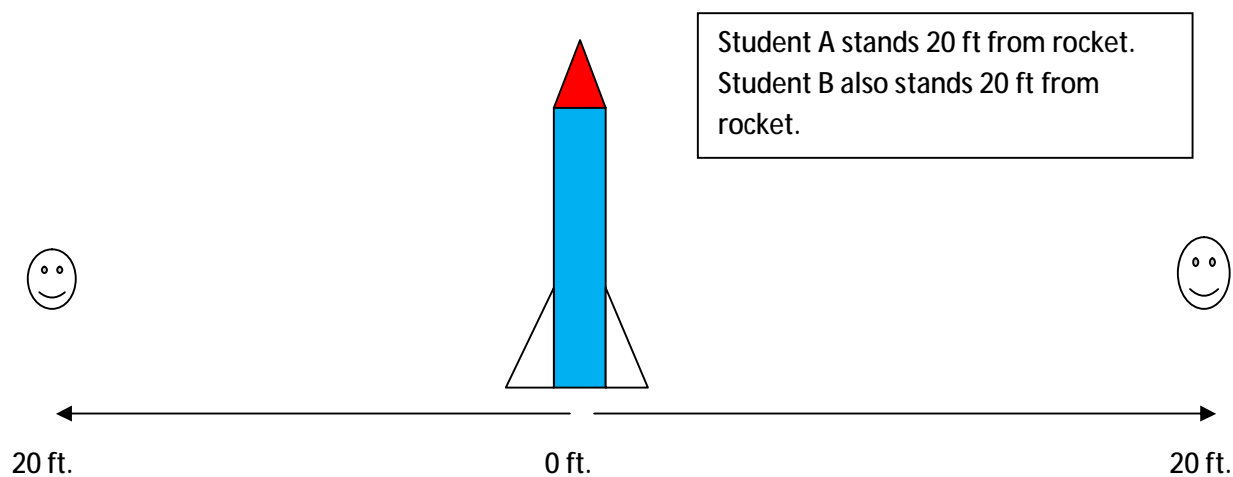


Younger students can easily determine the height of an object through a collective exercise in graphing. This is also a great way to hone basic measurements skills in fun hands-on activity. Using rockets they create themselves (see instructions on the last 2 pages), makes it even better. Students will have a great time as they get practical experience in basic measurements skills, graphing, and data collection.

Objective: Determine the altitude of a rocket

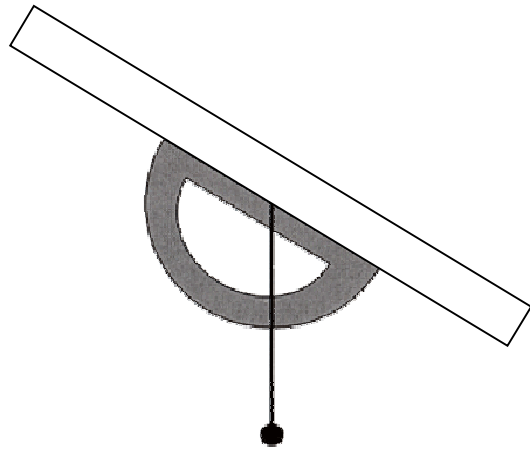
Have students observe the launch of a rocket or projectile while standing a predetermined distance from the object. Have students stand at different distances so that they collect different launch angles to graph.



Have your students' breakup into small teams, so that they can compete to see who gets the best results. Groups of four to six students will work well. They'll get a number of different angles on the launch and should have fairly accurate results. Have them collect their launch angle data and then collaborate on creating their team graph. Encourage them to try a few launches to practice getting the angle right. When they get to the graphing stage, they should be able to see if one of the angles collected were slightly off the mark. If the angles are correct the lines drawn on the graph should intersect at the ground zero line.

Building an Altitude Finder

Using a student ruler with a protractor taped to the bottom, attach a string through the center hole of the protractor with a small washer as a weight on the other end. (See figure 2)



Students should work in pairs, so as one student aims the ruler at the rising rocket the other student takes note of the angle indicated on the protractor. Students can practice first by computing the height of the school or flag pole.

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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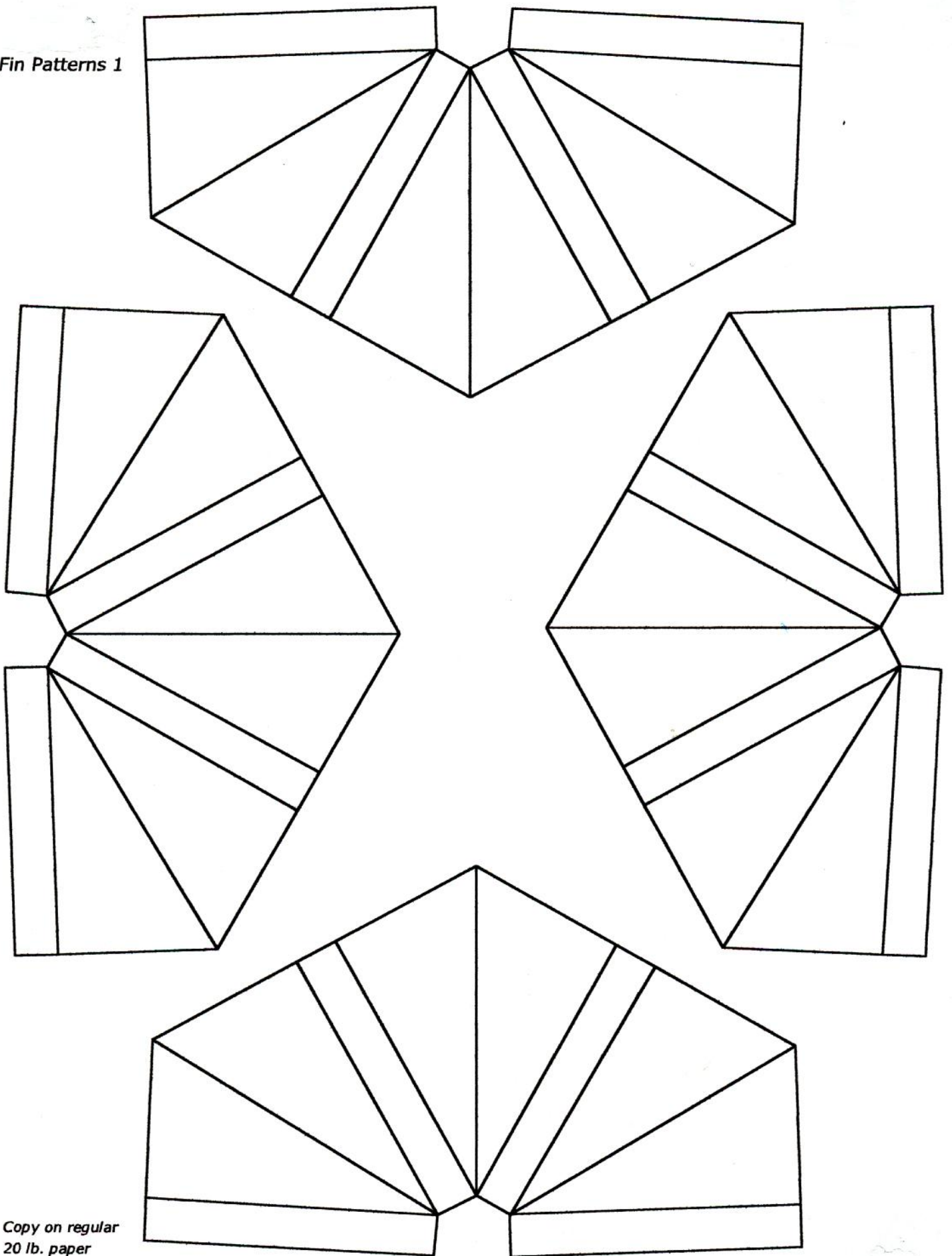
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Fin Patterns 1



*Copy on regular
20 lb. paper*