

**Academic Activity**
Chapter 4**Three-Dimensional
Modeling**

Modeling is used for a variety of purposes in engineering, including creating a visual aid to illustrate your ideas.

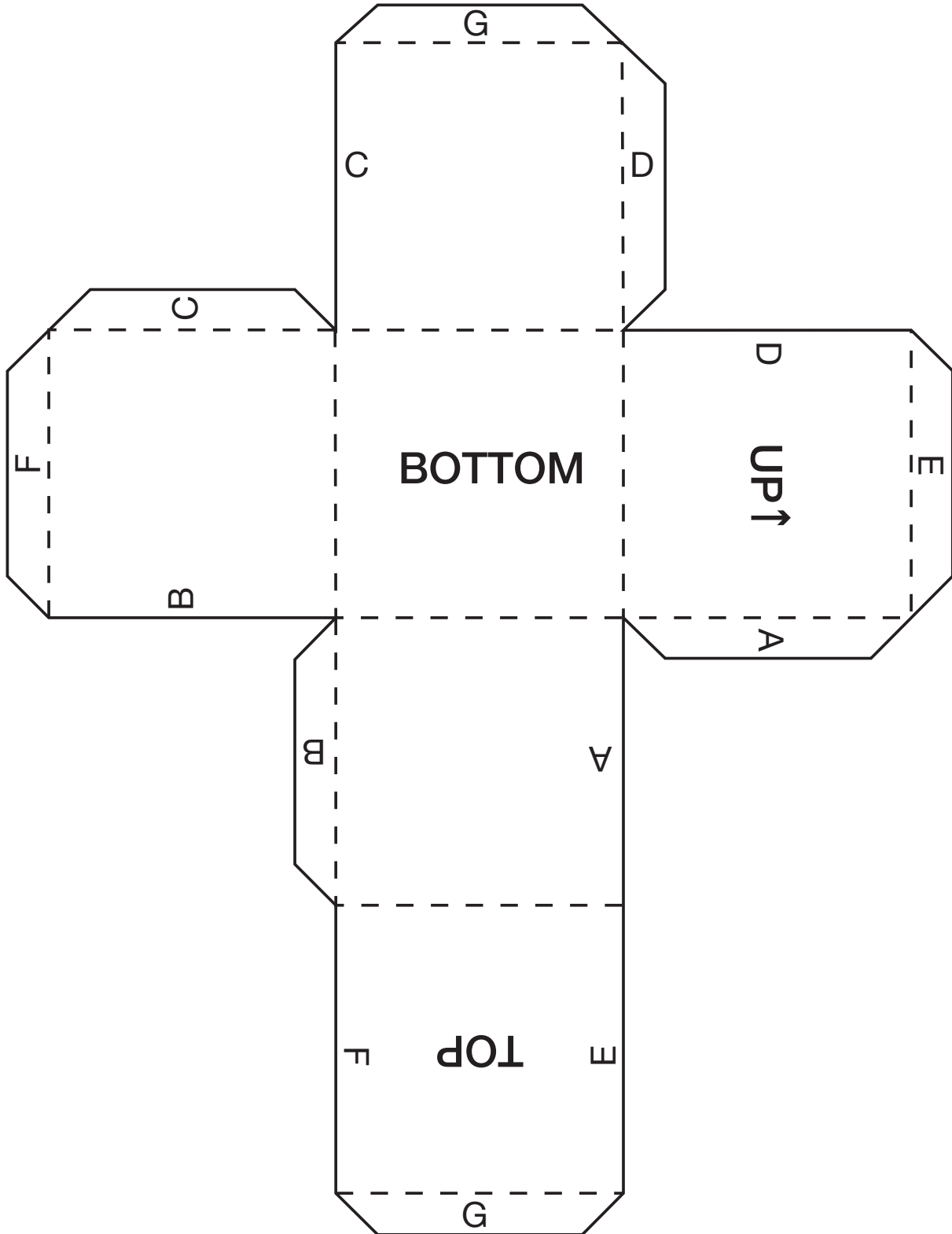
The figure on the following page is a flat plane model that can be cut out and folded into a three-dimensional model of a cube. The bottom is the shaded area, the top is labeled. Glue on the lettered tabs is used to hold the corners together.

- 1.** Find a stiff piece of paper or light cardboard around your home. An old cereal box or similar package would be perfect, and is a good way to recycle materials.
- 2.** Print or draw a full size copy of the figure and transfer it to the cardboard. The scale should be 1:1. (The new figure on the cardboard should be the same size as the printed figure.)
- 3.** Cut out the figure, taking care to only cut along solid lines.
- 4.** Fold the dotted lines such that the lettered tabs align with the same letter on the adjacent block and the words *Top*, *Up*, and *Bottom* are visible on the outside of the cube.
- 5.** Test each fold without glue to eliminate mistakes.
- 6.** Once you are sure everything lines up properly, glue all of the tabs in place.
- 7.** Using the same technique, create your own 3D model.
- 8.** Choose something relatively easy like a shape (other than a cube) or a letter of the alphabet.
- 9.** Draw your flat plane model out using a pencil and straight edge. Be sure to include tabs in your drawing.
- 10.** Cut your model out, and fold and glue it together.



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