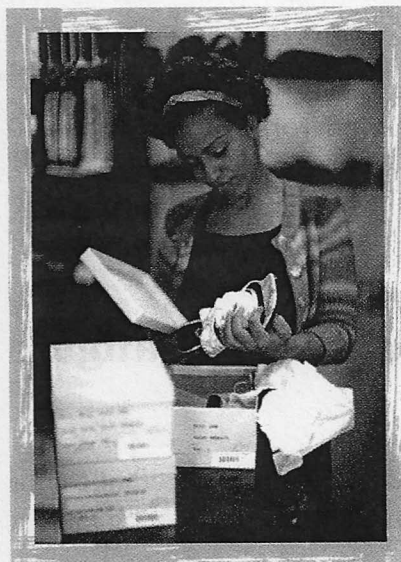


Investigation

1

Building Boxes

The most common type of package is the rectangular box. Rectangular boxes contain everything from cereal to shoes and from pizza to paper clips. Most rectangular boxes begin as flat sheets of cardboard, which are cut and then folded into a box shape.



1.1 Making Cubic Boxes

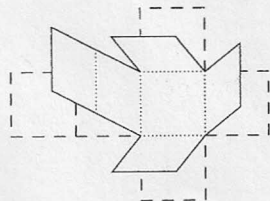
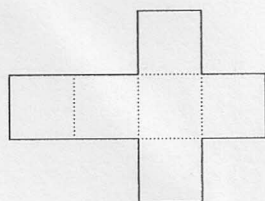
Some boxes are shaped like cubes. A **cube** is a three-dimensional shape with six identical square faces.

What kinds of things might be packaged in cubic boxes?

The boxes you will work with in this problem are shaped like unit cubes.

A **unit cube** is a cube with edges that are 1 unit long. For example, cubes that are 1 inch on each edge are called inch cubes. Cubes that are 1 centimeter on each edge are called centimeter cubes.

In this problem, you will make nets that can be folded to form boxes. A **net** is a two-dimensional pattern that can be folded to form a three-dimensional figure. The diagram below shows one possible net for a cubic box.



Problem 1.1 Making Cubic Boxes

On grid paper, draw nets that can be folded to make a unit cube.

- A. How many different nets can you make that will fold into a box shaped like a unit cube?
- B. What is the total area of each net, in square units?

ACE Homework starts on page 10.

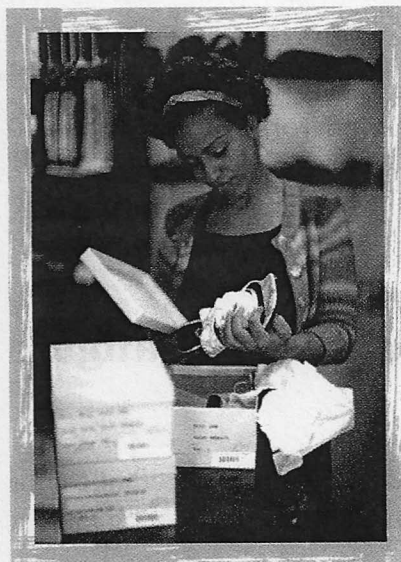
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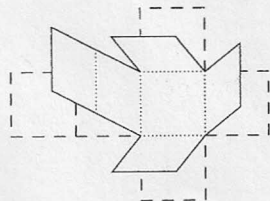
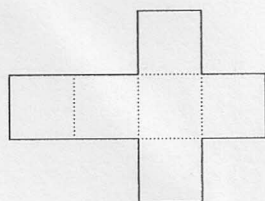
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