CHAPTER 1

Tools of Geometry

DOMAINS

1-1 Nets and Drawings for Visualizing Geometry

Content Standard
Prepares for G.CO.1 Know precise definitions of angle, circle, perpendicular line, parallel line, and line segment, based on the undefined notions of point, line, distance along a line, and distance around a circular arc.

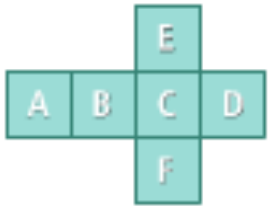
Objective To make nets and drawings of three-dimensional figures

Essential Understanding You can represent a three-dimensional object with a two-dimensional figure using special drawing techniques.

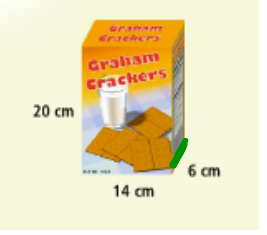
A **net** is a two-dimensional diagram that you can fold to form a three-dimensional figure. A net shows all of the surfaces of a figure in one view.

Problem 1 Identifying a Solid From a Net

The net at the right folds into the cube shown beside it. Which letters will be on the top and front of the cube?

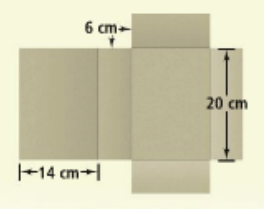


Packaging designers use nets to design boxes and other containers like the box in Problem 2.



Problem 2 Drawing a Net From a Solid STEM

Package Design What is a net for the graham cracker box to the right? Label the net with its dimensions.



An **isometric drawing** shows a corner view of a three-dimensional figure. It allows you to see the top, front, and side of the figure. You can draw an isometric drawing on isometric dot paper. The simple drawing of a file cabinet at the right is an isometric drawing.

A net shows a three-dimensional figure as a folded-out flat surface. An isometric drawing shows a three-dimensional figure using slanted lines to represent depth.

An **orthographic drawing** is another way to represent a three-dimensional figure. An orthographic drawing shows three separate views: a top view, a front view, and a right-side view.

Although an orthographic drawing may take more time to analyze, it provides unique information about the shape of a structure.