Grade 6 Mini-Module: Using Nets to Find Surface Area

Aligns with CCSS.MATH.CONTENT.6.G.A.4: Represent three-dimensional figures using nets made up of rectangles and triangles, and use the nets to find the surface area of these figures. Apply these techniques in the context of solving real-world and mathematical problems.

Related Standards

- CCSS.MATH.CONTENT.6.G.A.1: Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes; apply these techniques in the context of solving real-world and mathematical problems.
- CCSS.MATH.CONTENT.7.G.B.6: Solve real-world and mathematical problems involving area, volume and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms.

Objectives

In this module, you will learn and practice the following skills:

- Draw two-dimensional nets of three-dimensional figures whose faces are triangles and rectangles.
- Find the surface area of three-dimensional figures whose faces are triangles and rectangles.

Let's get started!

Key Terms

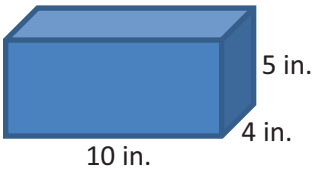
- A **net** of a three-dimensional figure shows the flattened-out faces of the figure and can be folded up to make the figure.
- A **three-dimensional figure,** also called a solid, has length, width, and depth.
- A **face** is a flat surface of a three-dimensional figure.
- The **surface area** of a three-dimensional figure is the total area of its faces.

Using Nets to Find Surface Area

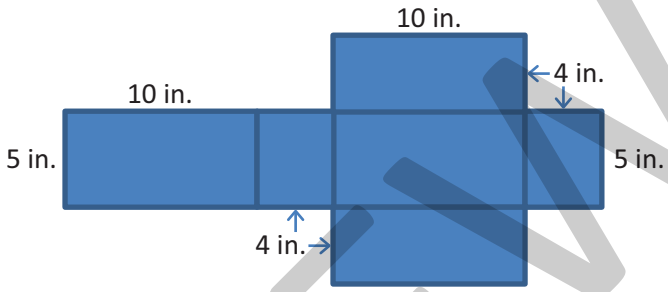
(CCSS.Math.Content.6.G.A.4)

The **net** of a **three-dimensional figure**, or solid, shows the flattened-out faces of the figure. The dimensions of the figure may be labeled. The net can be folded up to make the figure.

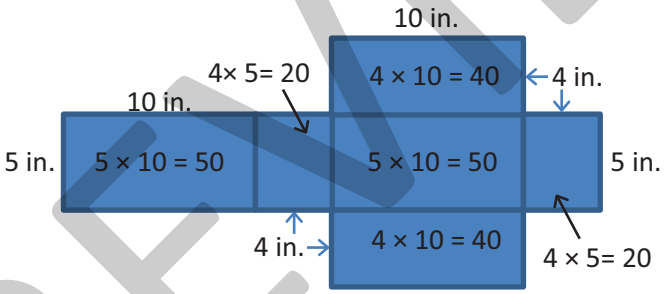
Rectangular prism.



Net



The **surface area** of a three-dimensional figure is the total area of its two-dimensional faces. Use the net of the figure to find its surface area. The total area of the net is the surface area of the three-dimensional figure. Since area is measured in square units, surface area is also measured in square units.



$$\begin{aligned}\text{Surface Area} &= 2(5\times10)+2(4\times10)+2(4\times5)\\ &= 2(50)+2(40)+2(20)\\ &= 100+80+40\\ &= 220 \text{ square inches}\end{aligned}$$