Visual Learning

grid paper

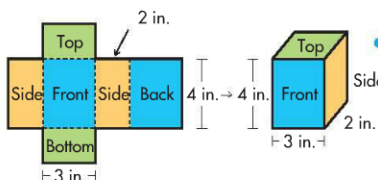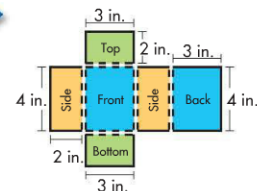### Surface Area

How can you find the surface area of a rectangular prism?

Remember that a net is a plane figure which when folded gives a solid figure. The surface area (SA) of a rectangular prism is the sum of the area of all its faces.

Which figure is the net?
[The figure on the left]
Does the net show all of the faces of the rectangular prism? How do you know?
[Yes. Possible explanation: The rectangular prism has six faces. All six faces are shown in the net.]

Notice that the solid figure has 6 faces that are rectangles.

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1 Visual Learning

Set the Purpose Call students' attention to the **Visual Learning Bridge** at the top of the page. *In this lesson, you will learn how to find the surface area of rectangular prisms. You will also learn how a net can be folded into a rectangular prism.*

Animated Glossary Students can see highlighted words defined in the Online Student Edition.
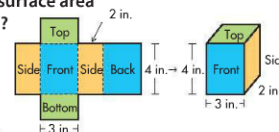
surface area

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2 Guided Practice

Formative Assessment

Remind students to keep the parts of the net that are the same size opposite each other as they fold their nets.

Exercise 3
Error Intervention

If students are finding the product of the length, width, and height,

then tell them that this equals the volume (the space inside the figure), not the surface area. Remind students that a rectangular prism has six faces. The surface area is the sum of the areas of all six faces. Have students begin by finding the area of one face of the prism.
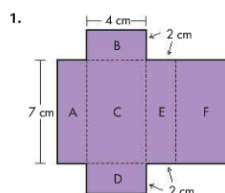
Reteaching Have students draw the net from the Visual Learning Bridge on grid paper and count the units. For another example and more practice, assign **Reteaching** Set B on p. 344.

3 Independent Practice

Encourage students to use grid paper when they want to draw a net for a solid figure. Use Exercise 7 as an example. Remind students that some faces are not visible. *How many faces of the rectangular prism in Exercise 7 can you see?* [3] *How many faces are not showing?* [3]

Guided Practice*

Do you know HOW?

Copy the following net on grid paper. Make each rectangle the size shown by the labels. Then cut out the net and fold it to make a rectangular prism.
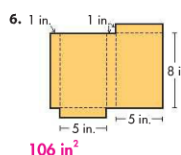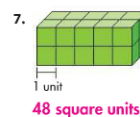
1.

Do you UNDERSTAND?

2. List the congruent faces in the net in Exercise 1.
   A and E, B and D, C and F
3. Find the surface area of the solid you built in Exercise 1.
   100 cm²
4. For which type of rectangular prism could you find the surface area by finding the area of 1 face and multiplying by 6?
   Cube
5. What is the surface area of a cube with an edge that measures 3 cm?
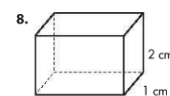   **54 cm²**

Independent Practice

In **6** through **8**, find the surface area of each solid.

6.

106 in²

7.

48 square units

8.

22 cm²

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328 *For another example, see Set B on page 344.