

3 Develop the Concept: Visual

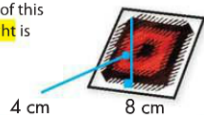
ELL
STRATEGY
Visual
Learning

Visual Learning

Area of Parallelograms

How can finding the area of a rectangle help you find the area of a parallelogram?

Southwestern rugs often have parallelograms as part of the design. The **base** of this parallelogram is 8 cm. The **height** is 4 cm. What is its area?

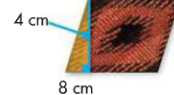


What is a parallelogram?

[A quadrilateral that has two pairs of parallel sides] **Is the height of a parallelogram the same as one of its sides?**
Explain. [No, the height must be perpendicular to the base.]

Step 1

The shaded triangle of the parallelogram can be cut off.



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 area of a parallelogram.*



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

base, height

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2 Guided Practice



**Formative
Assessment**

Remind students that area is measured in square units, so they should be sure to label their answers with the correct units.

Exercise 3

Error Intervention

If students don't know how to compare the dimensions of the rectangle to the parallelogram,

then remind them to look at the Visual Learning Bridge. *When the parallelogram was changed to a rectangle by moving the triangle, which part of the parallelogram stayed the same?* [The length of the parallelogram's base is the same as the length of the rectangle's base.] *Which part of the rectangle is not one of the sides of the parallelogram?* [The width of the rectangle is not one of the sides of the parallelogram; it is the height of the parallelogram.]

Reteaching For another example and more practice, assign **Reteaching** Set D on p. 319.

3 Independent Practice

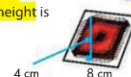
Students may think they need to know the lengths of two adjacent sides of a parallelogram to find its area. *In Exercise 5, remember that to find the area of a parallelogram, you should multiply the measure of the base by the measure of the height, NOT the measure of the adjacent side.*

Lesson 12-5

Area of Parallelograms

How can finding the area of a rectangle help you find the area of a parallelogram?

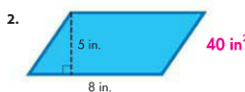
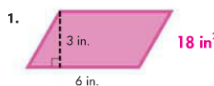
Southwestern rugs often have parallelograms as part of the design. The **base** of this parallelogram is 8 cm. The **height** is 4 cm. What is its area?



Guided Practice*

Do you know HOW?

In 1 and 2, find the area of each parallelogram.

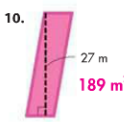
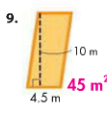
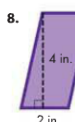
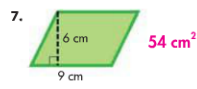
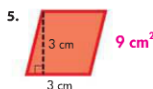


Do you UNDERSTAND?

- In the example above, which dimensions of the parallelogram correspond to the dimensions of the rectangle?
See margin.
- Writing to Explain** How can you adapt the formula for area of a rectangle to find the area of a parallelogram?
See margin.

Independent Practice

For 5 through 11, find the area of each parallelogram.



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*For another example, see Set D on page 319.

Answers

- The base to the length of the rectangle; the height to the width of the rectangle.
- Sample answer: You can substitute the base and height for the length and width.