UNIT 5 · STANDARD 6.G.1

Area of Parallelograms

Lesson 5-1

Name: _____ Date: _____ Class: _____

Key Vocabulary

Level 1 support

Picture first, then the word, then a plain-language meaning. Say each word out loud.

Think of a leaning door — the top and bottom are parallel, and the two sides are parallel, like a slanted rectangle

Parallelogram

A four-sided shape with two pairs of parallel sides.

If the bottom of a parallelogram is 10 cm, then b = 10 cm in the formula A = b × h

Base

A side of the shape you use to find the area.

A dashed vertical line from the top side straight down to the base, forming a 90° angle — NOT the slanted side

Height

The straight-up distance from the base to the top.

A 3 cm × 4 cm rectangle covers 12 square centimeters — imagine 12 tiny 1×1 squares inside it

Area

How much space is inside a flat shape.

An L-shaped room = a 10×8 rectangle joined to a 4×5 rectangle; total area = 80 + 20 = 100 sq ft

Composite figure

A shape made by putting two or more simple shapes together.

A = b × h means Area equals base times height; for a parallelogram with b = 6 and h = 4, A = 24

Formula

A math rule written with symbols.

Key Ideas & Notes

- Your architecture firm is designing a parallelogram-shaped patio for a client's backyard.
- The client needs to know how many square feet of pavers to order.
- The patio has a base of 14 feet and a height of 9 feet.
- Plot the vertices of a parallelogram with base 14 and height 9. Place points at (0, 0), (14, 0), (16, 9), and (2, 9) to visualize the patio.

Think About It

- What shape is the patio?
- What measurements are given?
- How is a parallelogram different from a rectangle?

My Notes

Guided Examples

Example 1

What is the area of a parallelogram with base 10 cm and height 7 cm?

Solution: $A = b \times h = 10 \times 7 = 70$ square centimeters.

Answer: A. 70 sq cm

Example 2

A parallelogram has an area of 54 sq ft and a base of 9 ft. What is the height?

Solution: $A = b \times h \rightarrow 54 = 9 \times h \rightarrow h = 54 \div 9 = 6$ ft.

Answer: A. 6 ft

Example 3

What is the area of a parallelogram with base 9 cm and height 5 cm?

Solution: $A = b \times h = 9 \times 5 = 45$ square centimeters.

Answer: A. 45 sq cm

Write About the Math

The Writing Revolution

I can explain how I found the area using the words base, height, area, and formula.

1. Kernel Sentence

subject + verb

Model: Parallelogram is a four-sided shape with two pairs of parallel sides.
Paralelogramo es una figura de cuatro lados con dos pares de lados paralelos.

Write a kernel sentence about parallelogram. Use a subject and a verb.
Escribe una oración base sobre paralelogramo. Usa un sujeto y un verbo.

_____

_____

2. Sentence Expansion

because · but · so

Kernel: Parallelogram matters in math
Paralelogramo importa en matemáticas

Expand the kernel three ways. Add a reason, a contrast, and a result.

because *porque*

Parallelogram matters in math because ____.
Paralelogramo importa en matemáticas porque ____.

_____

but *pero*

Parallelogram matters in math, but ____.
Paralelogramo importa en matemáticas, pero ____.

_____

so *entonces*

Parallelogram matters in math, so ____.
Paralelogramo importa en matemáticas, entonces ____.

_____

3. Sentence Types

4 ways to write a math idea

Statement
Afirmación

Tell one true fact about parallelogram.
Di un hecho verdadero sobre parallelogram.

Parallelogram ____.

Question
Pregunta

Ask a question about parallelogram.
Haz una pregunta sobre parallelogram.

How does ____ ?
¿Cómo ____ ?

Exclamation
Exclamación

Show excitement about parallelogram.
Muestra entusiasmo sobre parallelogram.

Wow, ____ !
¡Guau, ____ !

Command
Mandato

Tell a partner what to do with parallelogram.
Dile a un compañero qué hacer con parallelogram.

First, ____ .
Primero, ____ .

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4. Explain Your Reasoning

use a sentence starter

Area equals base times ____.
El área es la base por ____.

It is like a rectangle because ____.
Es como un rectángulo porque ____.

I see this shape in ____.
Veo esta forma en ____.

Try It

Solve on your own. Check the answer key when you are done.

1. What is the area of a parallelogram with base 9 cm and height 5 cm?

A. 45 sq cm

B. 14 sq cm

C. 22.5 sq cm

D. 90 sq cm

Show your work:

2. Which measurement is the height of a parallelogram?

A. The perpendicular distance between the base and the opposite side

B. The length of the slanted side

C. The perimeter divided by 4

D. The longest side

Show your work:

Stretch Your Thinking

Level 2 enrichment

Challenge task — explain your reasoning in full sentences.

A parallelogram has a base of 12 cm. If you double the height, the area doubles too. Explain why this happens using the formula, and give a specific example with numbers.

Sentence starter: When the height doubles from ____ to ____, the area changes from ____ to ____ because in the formula $A = b \times h$, the base stays at ____ and ____.

Show your work:

Reflect — Exit Ticket

A parallelogram has a base of 13 inches and a height of 5 inches. What is its area?

A. 65 sq in

B. 36 sq in

C. 18 sq in

D. 65 in

Your answer:

Answer Key & Teacher Guide

1. **Try It 1:** A. 45 sq cm — *$A = b \times h = 9 \times 5 = 45$ square centimeters.*
2. **Try It 2:** A. The perpendicular distance between the base and the opposite side — *The height is always the perpendicular (straight up-and-down) distance between the base and the opposite side, not the slanted side.*
3. **Exit Ticket:** A. 65 sq in — *$A = b \times h = 13 \times 5 = 65$ square inches.*

Writing (TWR) — what to look for

- **Kernel sentence:** A complete sentence needs a subject and a verb. Example: Parallelogram is a four-sided shape with two pairs of parallel sides.
- **Expansion:** *because* gives a reason, *but* shows a contrast or exception, *so* shows a result. Answers vary; each must keep the kernel idea and add the correct kind of detail.
- **Sentence types:** Statement ends with a period, question with "?", exclamation with "!", and a command starts with an action verb (a "bossy" verb).