

Area of Triangles

Flagship

Lesson 5-3-flagship

Name: _____

Date: _____

Class: _____

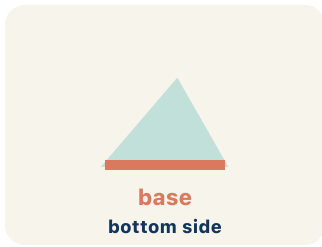
SKY HARBOR MISSION

| The Triangular Skylight

You are the lead architect at Sky Harbor Studio. The city has hired your firm to design a glass skylight made of triangular panels for the new transit hub. Before the glass can be cut, you must master the area of triangles — every wrong measurement wastes expensive glass.

Key Vocabulary Level 2 Standard

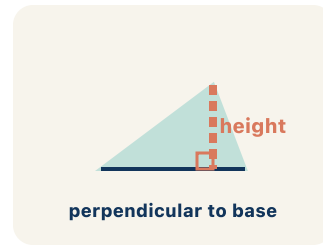
Picture first, then the word, then a plain-language meaning. Say each word out loud.



*If the bottom of a triangle is 10 cm, then $b = 10$ cm
in the formula $A = \frac{1}{2} \times b \times h$*

Base

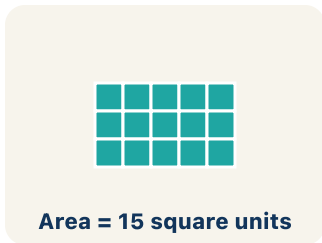
Write the definition:



*A dashed vertical line from the top point straight
down to the base at a 90° angle*

Height

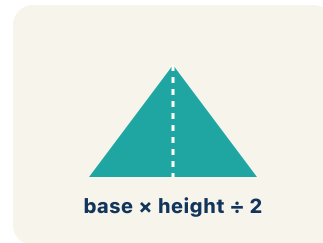
Write the definition:



*A triangle with $b = 8$ and $h = 6$ has area = $\frac{1}{2} \times 8 \times$
 $6 = 24$ sq units*

Area

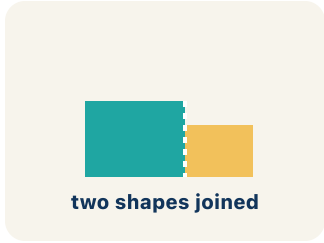
Write the definition:



*The corner of a book or a door frame meets at
exactly 90°*

Perpendicular

Write the definition:



A house shape = a rectangle (walls) + a triangle (roof)

Composite figure

Write the definition:

$$3x + 5$$

no equal sign

$A = \frac{1}{2} \times b \times h$ means Area equals one-half times base times height

Formula

Write the definition:

Guided Notes Level 2 Standard



WHAT WE'RE LEARNING TODAY

I can find the area of a triangle using the formula $A = \frac{1}{2} \times \text{base} \times \text{height}$.



Fill in each blank as we go. Use the Word Bank to help you.



WORD BANK – FILL EACH BLANK WITH THE BEST WORD

Base

Height

Area

Perpendicular

Composite figure

Formula



Tap any word to see what it means and a picture.

1 The side of a triangle used as the bottom for measuring area is the

2 The perpendicular distance from the base to the opposite vertex is the

3 The amount of flat space inside a triangle is its .

4 Two lines that meet at a 90° angle are .

5 A shape made of two or more basic shapes combined is a

6 A math rule written with symbols, like $A = \frac{1}{2} \times b \times h$, is a



Watch & Try – Worked Examples

See the notes in action: watch one worked all the way through, then try the next with the same steps.

 **I do – watch**


Follow each step as your teacher solves it.

Problem: What is the area of a triangle with base 10 cm and height 6 cm?

- A. 30 sq cm
- B. 60 sq cm
- C. 16 sq cm
- D. 30 cm

Step 1 $A = \frac{1}{2} \times b \times h = \frac{1}{2} \times 10 \times 6 = 30$ square centimeters.

 **Answer:** A. 30 sq cm

 **We do – together**

Solve this one with your class using the same steps.

Problem: A triangle has an area of 24 sq ft and a base of 8 ft. What is the height?

- A. 6 ft
- B. 3 ft
- C. 16 ft
- D. 12 ft

Step 1 _____

Step 2 _____

Answer: _____

 **You do — your turn**

Now try one on your own. Show every step.

Problem: What is the area of a triangle with base 14 ft and height 6 ft?

- A. 42 sq ft
- B. 84 sq ft
- C. 20 sq ft
- D. 42 ft

Show your work:

Try It

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

1. A triangular flag has a base of 12 in along the pole. Its two slanted sides measure 10 in, but a dashed line shows the perpendicular height is 7 in. What is the area of the flag?

- A. 42 sq in
- B. 60 sq in
- C. 70 sq in
- D. 120 sq in

Show your work:

2. Your studio designs a triangular road sign with a base of 6 ft and a height of 9 ft. What is its area?

- A. 27 sq ft
- B. 54 sq ft
- C. 15 sq ft
- D. 27 ft

Show your work:

Stretch Your Thinking

Level 2 enrichment

Challenge task — explain your reasoning in full sentences.

An architect designs a triangular roof gable with a base of 18 ft and a height of 9 ft. A second gable has the same area but a base of 27 ft. Find the area of the first gable, then determine the height of the second gable. Show all your work.

Sentence starter: The first gable's area is ___ sq ft because $A = \frac{1}{2} \times \text{base} \times \text{height}$. The second gable has the same area, so $A = \frac{1}{2} \times 27 \times h$, which means its height is ___ ft.

Show your work:

Reflect — Exit Ticket

A triangle has a base of 11 inches and a height of 8 inches. What is its area?

- A. 44 sq in
- B. 88 sq in
- C. 19 sq in
- D. 44 in

Your answer:
