

Geometry Unit 1, part b: Area

Bronx Early College Academy

Christopher J. Huson PhD

19-23 September 2022

1.8 Area	19 September
1.9 Rounding and circle area	20 September
1.10 Precision	21 September
1.11 Review	22 September
1.12 Unit test: Segments, length, area	23 September

Learning Target: I can calculate areas

CCSS: HSG.CO.A.1 Know precise geometric definitions

1.8 Monday 19 Sept

Do Now: Practice unit conversion

1. How many days are in a week?
2. Find the number of weeks in 365 days.
(show calculation with units)

Quiz results

Lesson: Rectangle, triangle, parallelogram area formulas

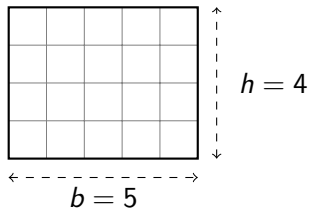
Extension: Scientific notation

The *area* of a rectangle is its base \times height.

We also say “length times width”

Formula for the area of a rectangle:

$$A = b \times h$$



$$A = 5 \times 4 = 20$$

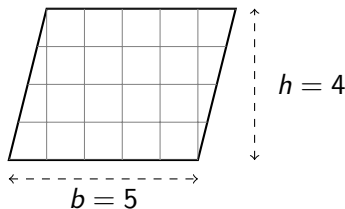
Area the quantity of unit squares that fill a shape

A parallelogram's area has the same formula as a rectangle.

Use the height, not the length of the slanted side.

Formula for the area of a parallelogram:

$$A = b \times h$$



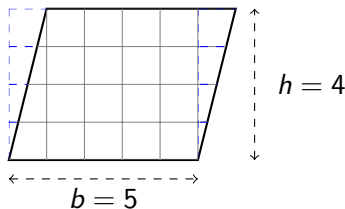
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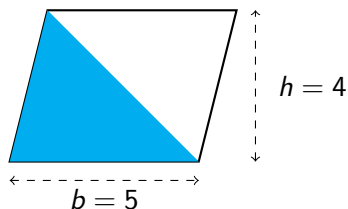
The two blue triangles match

A triangle has half the area of its base times height.

Use the height, not the side length.

Formula for the area of a triangle:

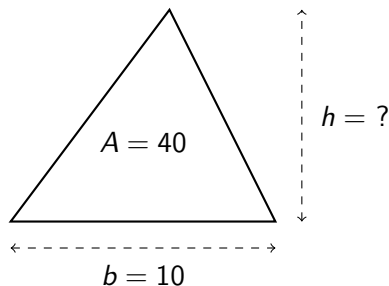
$$A = \frac{1}{2}b \times h$$



$$A = \frac{1}{2}(5 \times 4) = 10$$

Find a missing dimension using the area formula

Given the area of a triangle is 40 and its base is 10, find its height.



$$A = \frac{1}{2}(10 \times h) = 40$$

Write formulas in notebook

Rectangle $A = b \times h$ (base times height or length times width)

Parallelogram $A = b \times h$

Triangle $A = \frac{1}{2}(b \times h)$

Area the quantity of unit squares that fill a shape

Units We say “square units”, i.e. square inches (abbreviated in^2), square miles, etc.

Extension (optional): *Scientific notation*

Use for very large or small numbers instead of decimals

Exponents mean repeated multiplication:

$$10^5 = 10 \times 10 \times 10 \times 10 \times 10 = 100,000$$

1. The distance to the sun is 150,000,000,000 meters $= 1.5 \times 10^{11}$
2. The population of NYC is 8,000,000 =
3. The area of the earth is 2×10^8 square miles =

Scientific notation Compact notation for big numbers, $a \times 10^k$

Exponent Repeated multiplication. The number of decimal places in base 10

Base 10 The system of place value we use for numbers

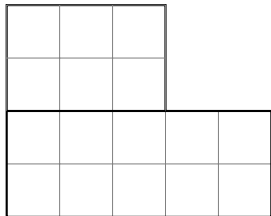
Mantissa The coefficient in scientific notation

Learning Target: I can calculate the area of a circle

CCSS: HSG.CO.A.1 Know precise geometric definitions

1.9 Tuesday 20 Sept

Do Now: Two rectangles are shown. Calculate the area of each and the combined total area.



Lesson: Area of a circle, π , decimals, powers of ten, rounding

Extension: Significant figures

Learning Target: I can quantify error in calculations

CCSS: HSG.CO.A.1 Know precise geometric definitions

1.10 Wednesday 21 Sept

Do Now: Find the area of a circle with radius $b = 10$ centimeters, rounding to the nearest whole number.

circle image

Lesson: Percent error formula

Extension: Confidence intervals

Learning Target: I can study together with my classmates

CCSS: HSG.CO.A.1 Know precise geometric definitions

1.11 Thursday 22 Sept

Do Now: Find the area of a circle with radius $b = 10$ centimeters, rounding to the nearest whole number.

circle image

Lesson: Peer review, notebook check, homework inventory due

Unit test tomorrow

Groupwork review for test tomorrow

“Roundtable” of four students, with four topics assigned

Geometry skills to study / teach

1. Conventions: terminology, notation, diagramming
2. Modeling situations with algebra
3. Perimeter and special shapes:
 - ▶ Scalene, isosceles, and equilateral \triangle s
 - ▶ Squares, rectangles, parallelograms, trapezoids, rhombuses, kites (quadrilateral side \cong s will be marked)
4. Solving algebraic equations for one variable

Learning Target: I can quantify length and area

CCSS: HSG.CO.A.1 Know precise geometric definitions

1.12 Friday 23 Sept

Unit test