

Geometry Unit 4: Volume

Bronx Early College Academy

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31 October - 18 November 2022

4.1 Nets

31 October

4.2 Rectangular prisms

1 November

4.3 Surface area

3 November

Learning Target: I can fold nets into 3-dimensional solids

HSG.CO.C.9 Prove theorems about lines and angles

4.1 Monday 31 October

Do Now

1. Review your Deltamath assignments
2. Check your Jump rope scores
3. Set a study goal
4. Answer survey in Google Classroom, "Mark as Done"

Lesson: Nets, Deltamath classwork practice

Homework: Area formulas review problem set

Learning Target: I can calculate the volume of a *rectangular prism*

HSG.CO.C.9 Prove theorems about lines and angles

4.2 Tuesday 1 November

Do Now

1. Find the area of a rectangle 4 inches by 6 inches
2. Find the length of a rectangle 7 inches wide with an area of 63 square inches

Lesson: Prism definitions, volume formula

Homework: Deltamath practice

A prism is a polyhedron, a 3-dimensional shape

Solid A 3-dimensional object

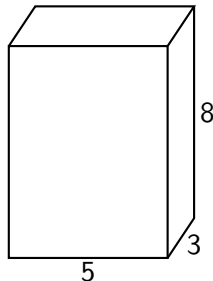
Face A flat surface of a geometric solid

Edge A line segment where two faces meet

Vertex A point where edges meet

Prism A solid with two identical, parallel, bases and uniform cross section

Base Flat shapes that form the top and bottom or ends of a prism



Lateral face The sides of a prism, which are parallelograms

Cross section The shape of a plane's intersection with a solid

Common types of prisms, named by their base

Rectangular Bases are rectangles (or squares)

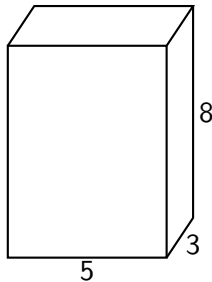
Triangular Triangular base

Hexagonal Six-sided base, a hexagon

Cylinder Solid with two parallel circles as bases

Right Lateral faces are a right angles to the base

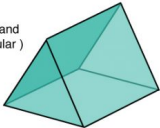
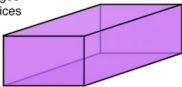
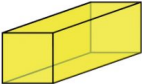
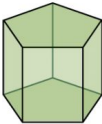
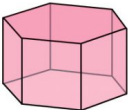
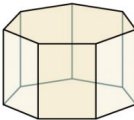
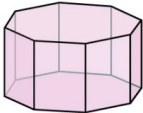

Oblique Slanted



Math Monks link, <https://mathmonks.com/prism>

Prism Shapes



<p>Triangular</p> <ul style="list-style-type: none"> • 5 faces (2 triangular and 3 rectangular) • 9 edges • 6 vertices 	<p>Rectangular</p> <ul style="list-style-type: none"> • 6 faces (all rectangular) • 12 edges • 8 vertices 
<p>Square</p> <ul style="list-style-type: none"> • 6 faces (2 squares and 4 rectangular) • 12 edges • 8 vertices 	<p>Pentagonal</p> <ul style="list-style-type: none"> • 7 faces (2 pentagonal and 5 rectangular) • 15 edges • 10 vertices 
<p>Hexagonal</p> <ul style="list-style-type: none"> • 8 faces (2 hexagonal and 6 rectangular) • 18 edges • 12 vertices 	<p>Heptagonal</p> <ul style="list-style-type: none"> • 9 faces (2 Heptagonal and 7 rectangular) • 19 edges • 14 vertices 
<p>Octagonal</p> <ul style="list-style-type: none"> • 10 faces (2 octagonal and 8 rectangular) • 24 edges • 16 vertices 	<p>Trapezoidal</p> <ul style="list-style-type: none"> • 6 faces (2 trapezoidal and 4 rectangular) • 12 edges • 8 vertices 

Volume is a measure of space, the number of unit cubes a solid contains

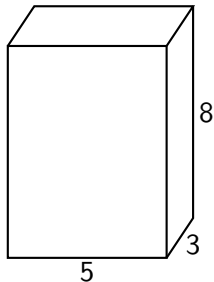
Given the area of the base B and height h ,
the volume of a prism is $V = B \times h$

Rectangular $V = l \times w \times h$

Square $V = s^2 \times h$

Triangular $V = \frac{1}{2}l \times w \times h$

Cylinder $V = \pi r^2 \times h$



Learning Target: I can calculate the surface area of a rectangular prism

HSG.CO.C.9 Prove theorems about lines and angles

4.3 Thursday 3 November

Do Now

1. Find the volume of a rectangular prism 4 inches by 6 inches by 3.5 inches
2. Find the volume of a triangular prism with base 6 inches wide by 5 inches tall by 10 inches high

Lesson: Surface area definition, formula

Homework: Deltamath practice