Grade 8
Unit 8 Vocabulary
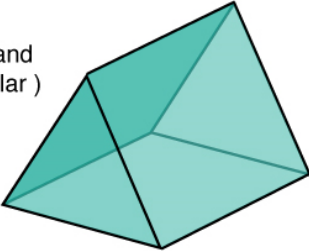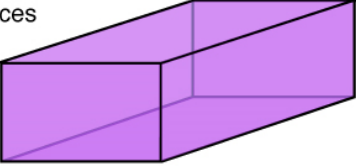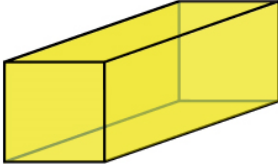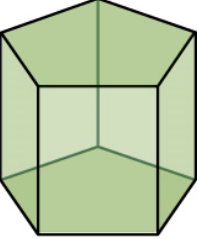
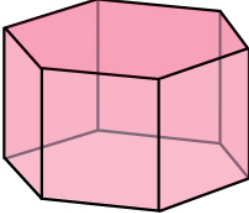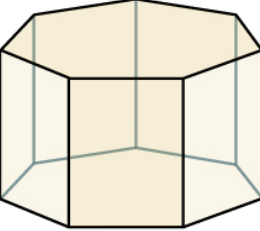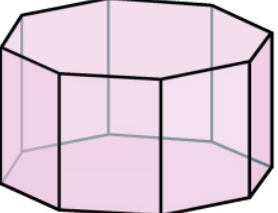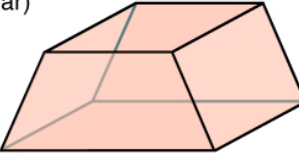## 3-Dimensional Geometry

(8.6A, 8.6B, 8.7A, 8.7B)

Prism – a 3-dimensional figure with two parallel congruent faces called bases and rectangular lateral faces.

A solid object with two identical ends and rectangular sides.

Prism Shapes

Triangular
- 5 faces (2 triangular and 3 rectangular)
- 9 edges
- 6 vertices

Rectangular
- 6 faces (all rectangular)
- 12 edges
- 8 vertices

Square
- 6 faces (2 squares and 4 rectangular)
- 12 edges
- 8 vertices

Pentagonal
- 7 faces (2 pentagonal and 5 rectangular)
- 15 edges
- 10 vertices

Hexagonal
- 8 faces (2 hexagonal and 6 rectangular)
- 18 edges
- 12 vertices

Heptagonal
- 9 faces (2 Heptagonal and 7 rectangular)
- 19 edges
- 14 vertices

Octagonal
- 10 faces (2 octagonal and 8 rectangular)
- 24 edges
- 16 vertices

Trapezoidal
- 6 faces (2 trapezoidal and 4 rectangular)
- 12 edges
- 8 vertices

Net – a 2-dimensional representation that can be folded to form a 3-dimensional figure.

A pattern that you can cut and fold to make a model of a solid shape.
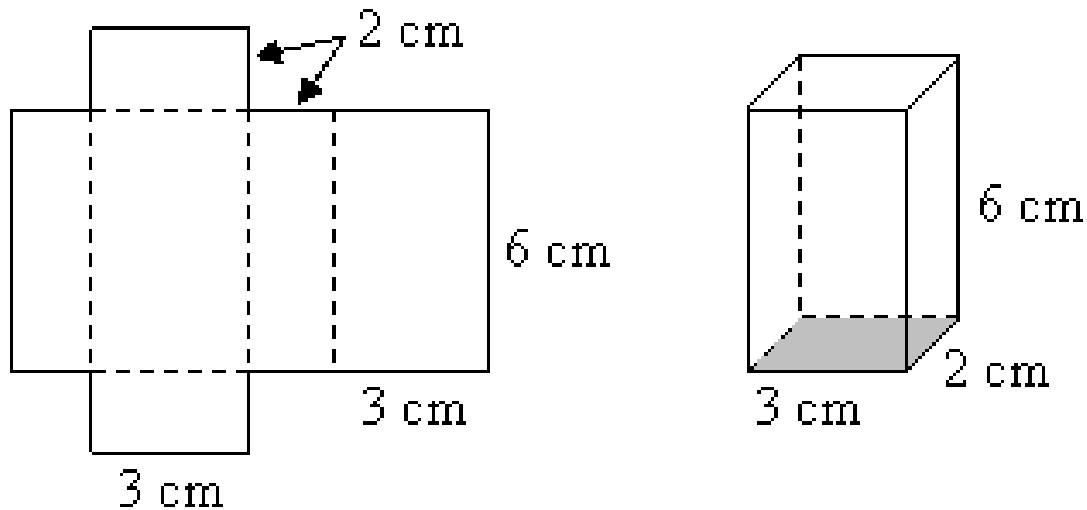
Surface Area – the sum of the areas of all the faces, including the bases, of a 3-dimensional figure.

The total area of ALL of the sides of a three-dimensional object.
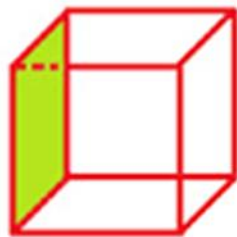

2cm

3cm

5cm
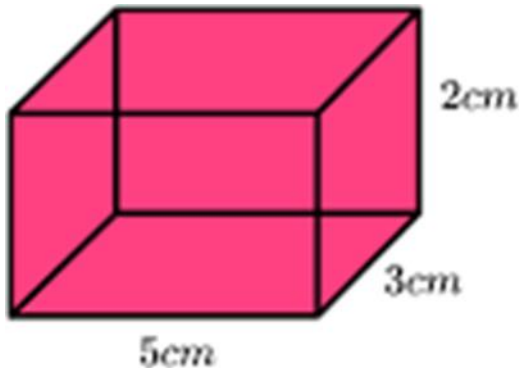
Face	Area
Bottom	5 x 3 = 15
Top	15
Front	5 x 2 = 10
Back	10
Right side	2 x 3 = 6
Left side	6

Total surface area = 15 + 15 + 10 +10 + 6 + 6

= 62cm²

Lateral Surface Area – the sum of the areas of all the lateral faces, not the bases, of a 3-dimensional figure.
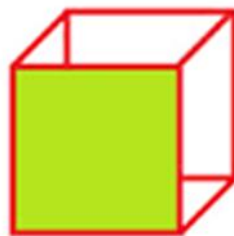
The total area of the sides of a three-dimensional object without the bases.
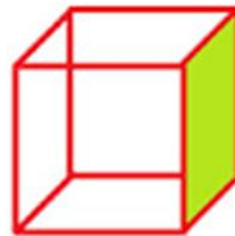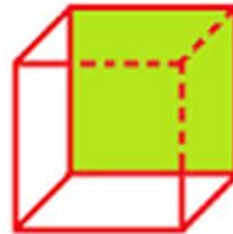

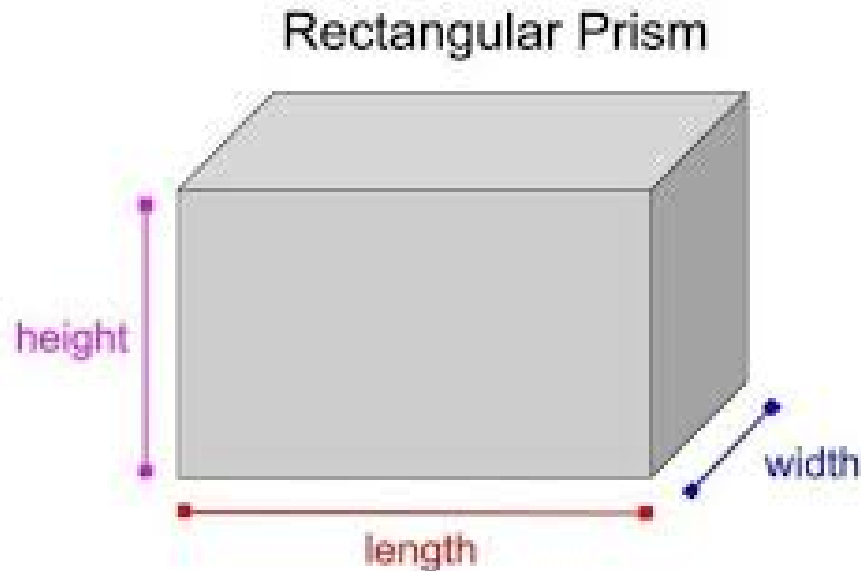Left Side Face   Right Side Face

Front Face   Back Face

Rectanular Prism – a prism with 2 congruent, parallel rectangular bases and 4 rectangular lateral faces.

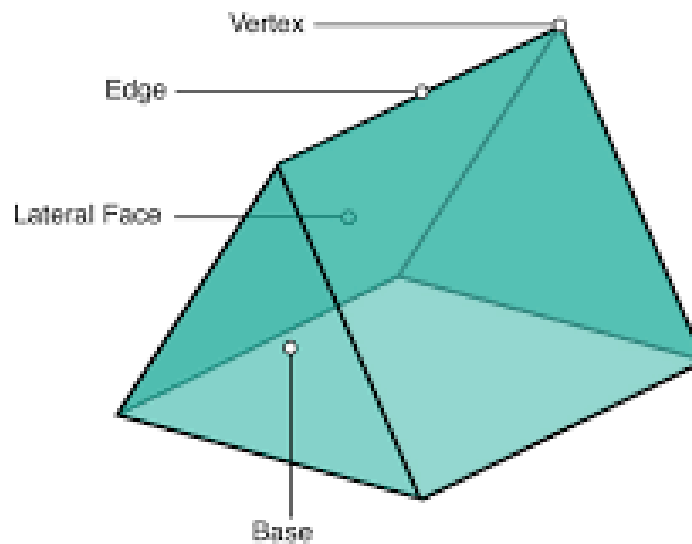## A prism with rectangle bases

Rectangular Prism

Triangular Prism – a prism with 2 congruent, parallel triangular bases and 3 rectangular lateral faces.

A prism with triangle bases

Triangular Prism

Vertex
Edge
Lateral Face
Base

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Volume – the measure of the amount of space inside of a solid; measured in cubic units.

The amount of 3-dimensional space something takes up.
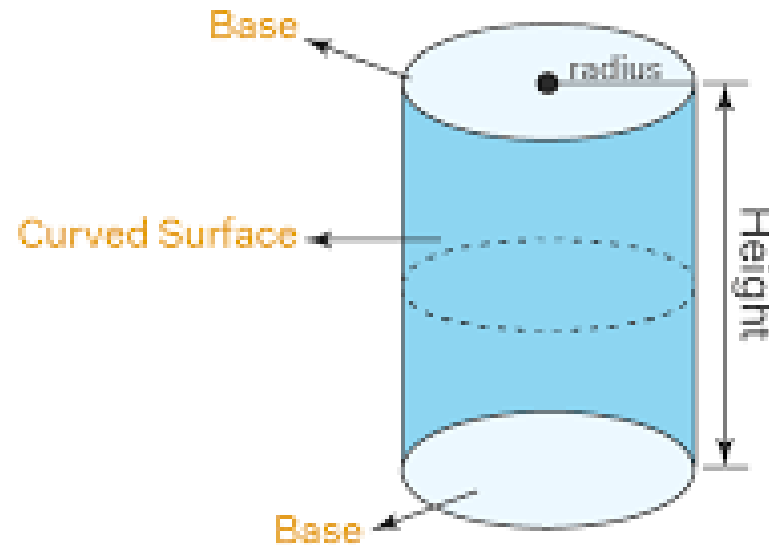

3 blocks high

5 blocks wide

4 blocks deep
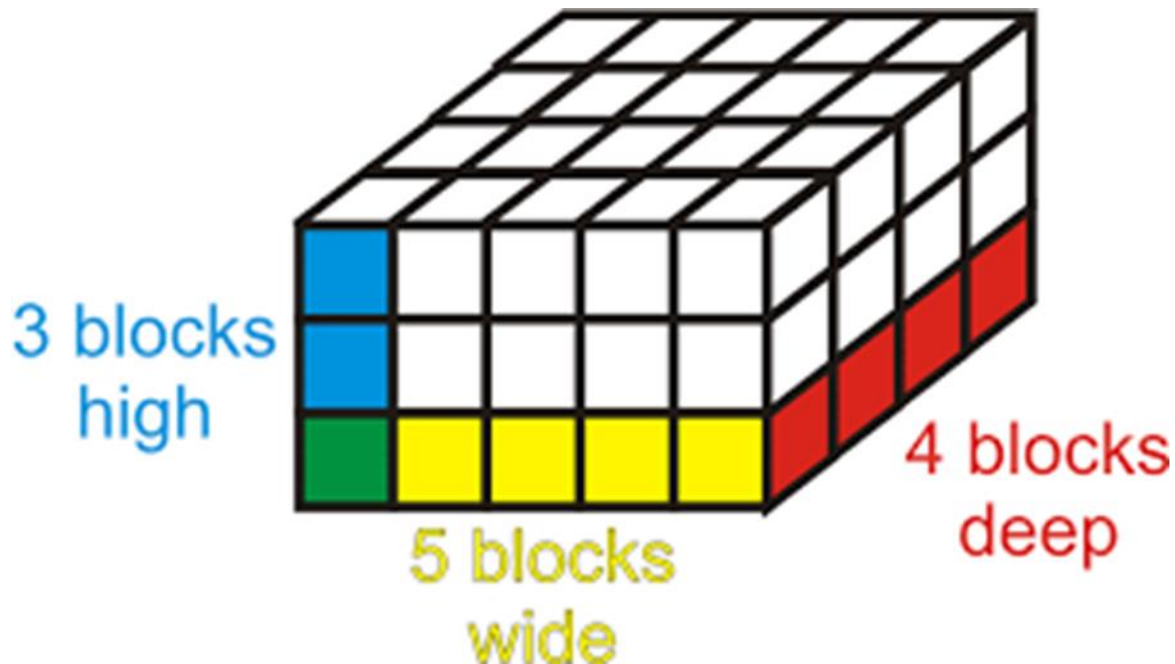
= 60 blocks total

Cylinder - a 3-dimensional figure with 2 congruent, parallel, circular bases connected by a curved surface.
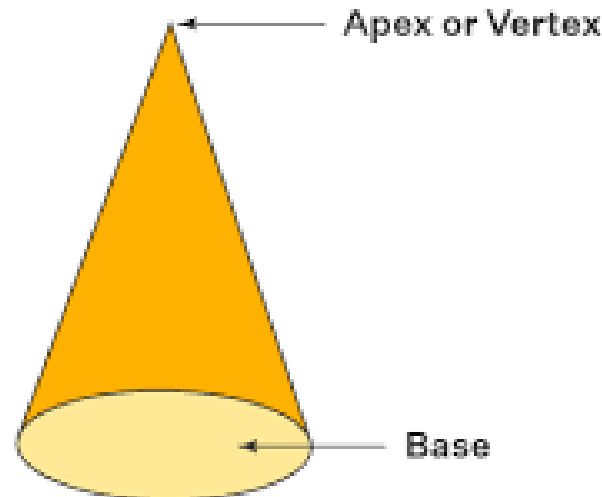
A prism with circle bases

Parts of a Cylinder

Base

radius

Curved Surface

Height

Base

Cone – a 3-dimensional figure with one circular base connected to its one vertex by a curved surface.

A solid object that has a circular base joined to a point by a curved side.

A Cone

Sphere – a 3-dimensional figure that is the set of all points that are a given distance, the radius, from the center.

A 3-dimensional object shaped like a ball.

Parts of a Sphere

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