# Grade 7
# Unit 5 Vocabulary

## 3-Dimensional Geometry

(7.8A, 7.8B, 7.9A, 7.9D)

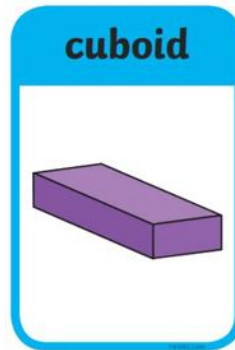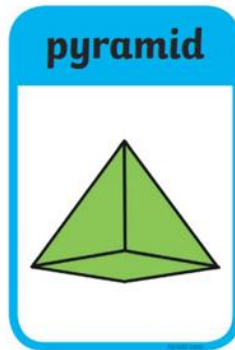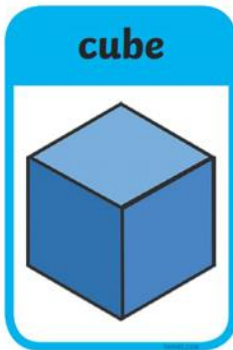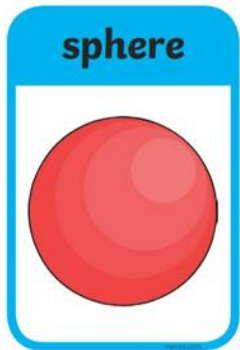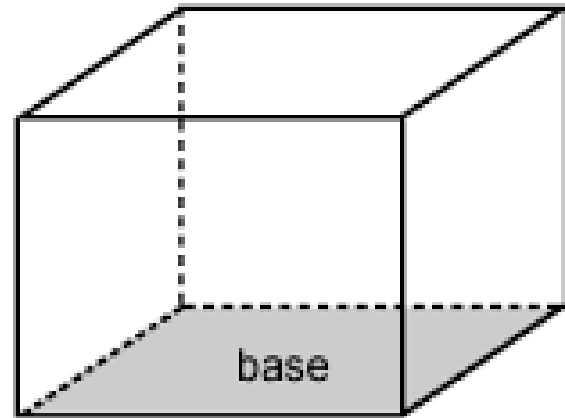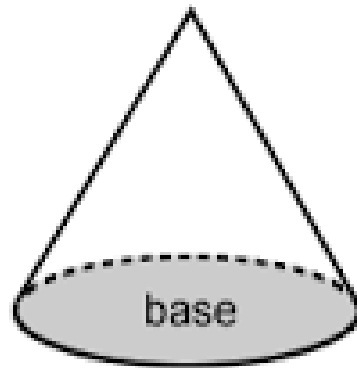*3-Dimensional* – Having three dimensions (such as height, width and depth), like any object in the real world.

Figures that have volume

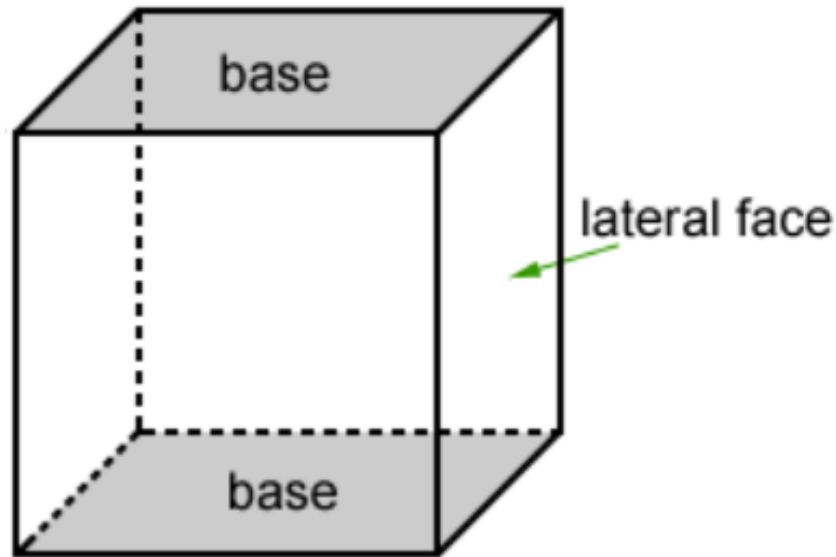| sphere | cube | pyramid | cuboid | cylinder | triangular prism | cone |
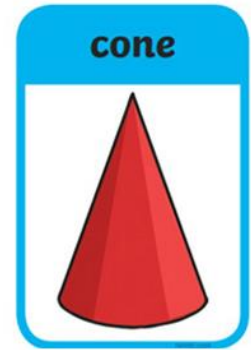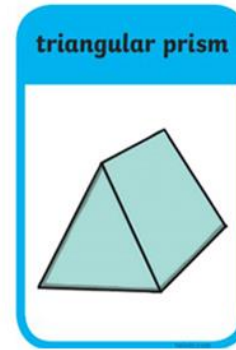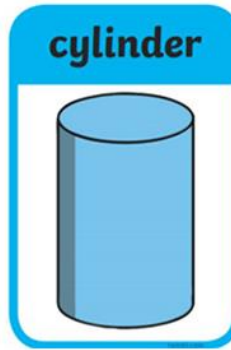
*Base* – the face of a 3-dimensional figure by which it is classified.

The side that names a 3-D figure
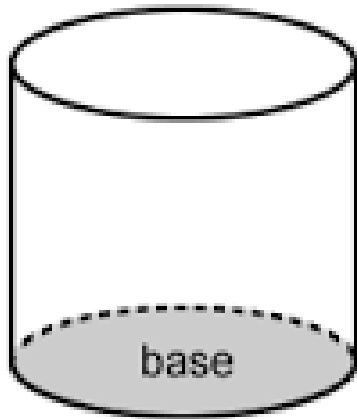
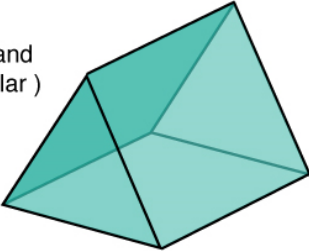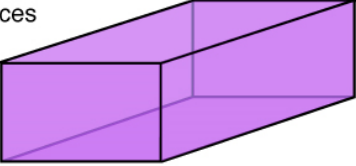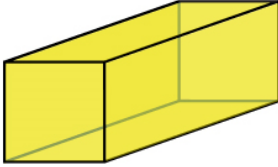*Lateral Face* – the face or faces of a 3-dimensional figure that is not a base.
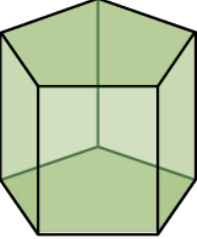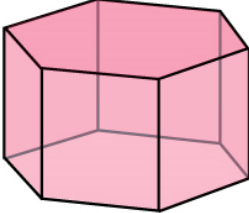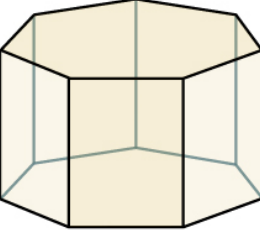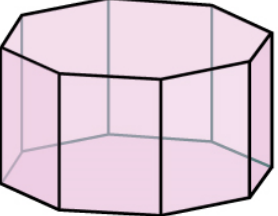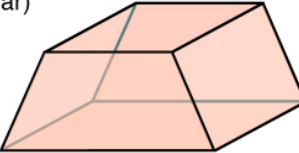
The sides that are not the base(s)

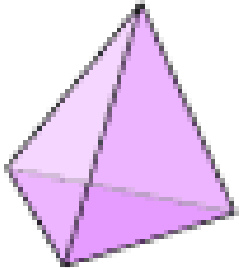*Prism* – a 3-dimensional figure with two parallel congruent faces called bases and rectangular lateral faces.
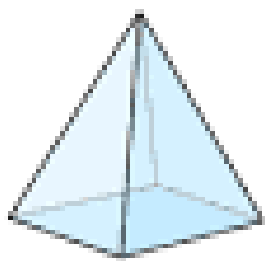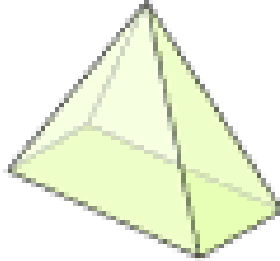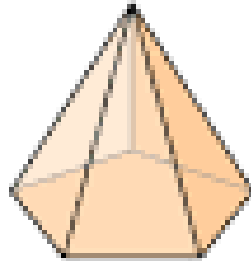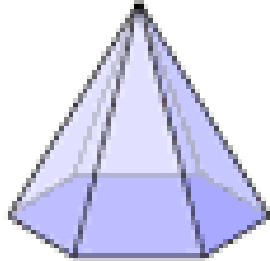
A solid object with two identical bases and rectangular sides.

# 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

# *Pyramid* – a 3-dimensional figure with one base and triangular lateral faces.

A solid object with one base and triangular sides.

## Types of Pyramids

| Triangular | Square | Rectangular | Pentagonal | Hexagonal |
|---|---|---|---|---|
| 4 Faces<br>4 Vertices<br>6 Edges | 5 Faces<br>5 Vertices<br>8 Edges | 5 Faces<br>5 Vertices<br>8 Edges | 6 Faces<br>6 Vertices<br>10 Edges | 7 Faces<br>7 Vertices<br>12 Edges |

*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.
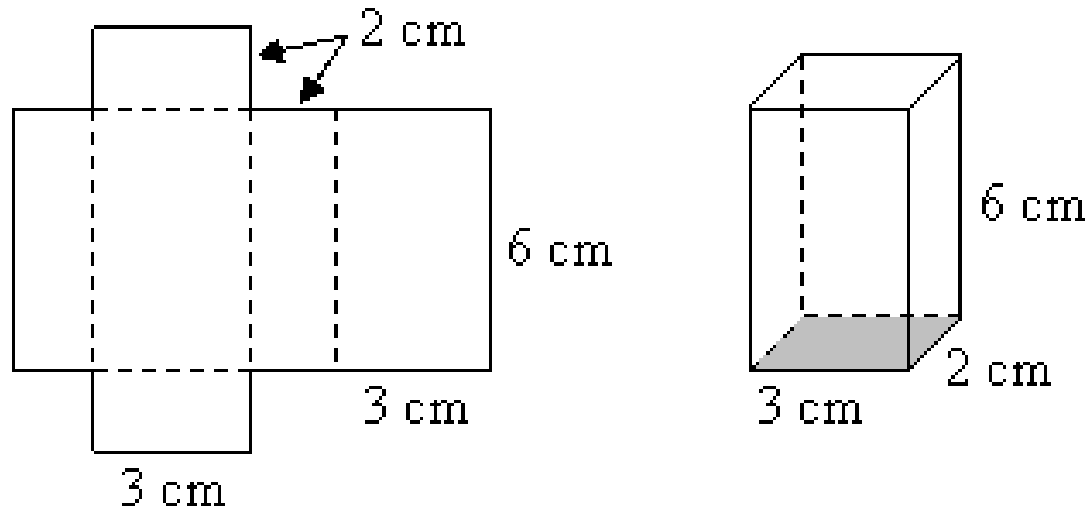
*__Volume__*— the amount of space a 3-dimensional object occupies measured in cubic units.
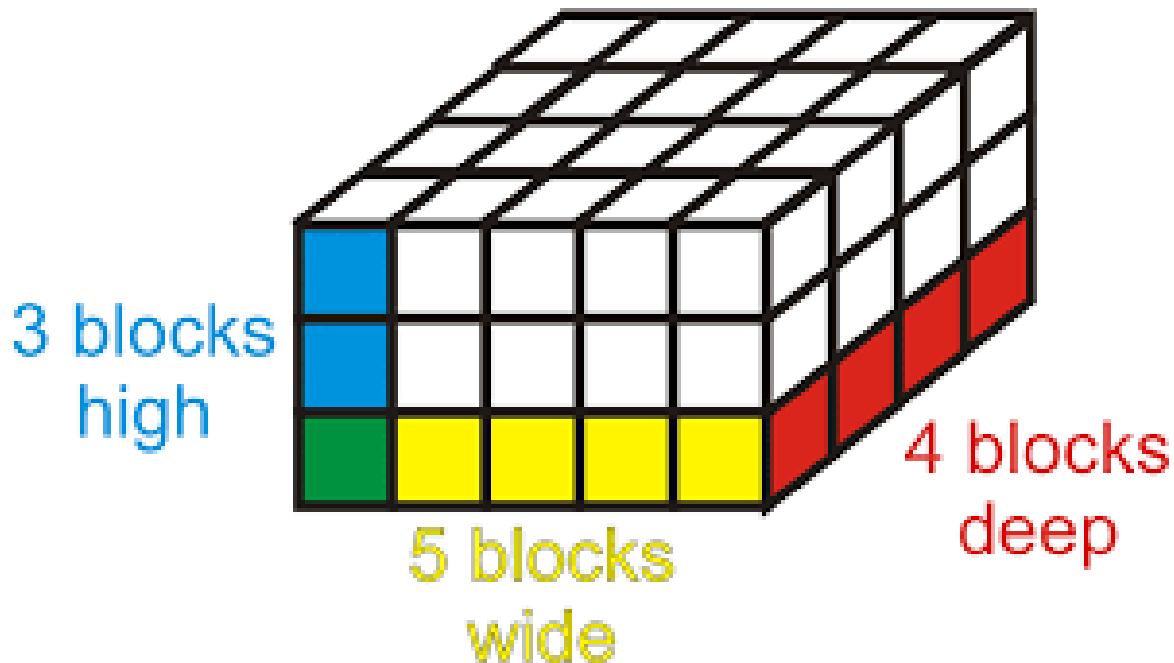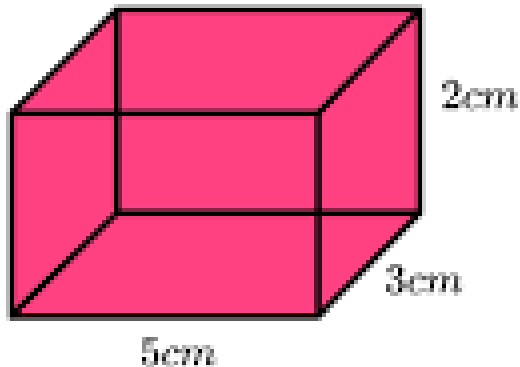
The amount of 3-dimensional space something takes up.



3 blocks high

5 blocks wide

4 blocks deep

= 60 blocks total

*__Surface Area__* – the sum of the areas of all the faces, including the bases, of a 3-dimensional figure.

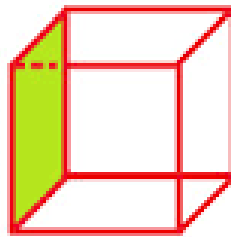_The total area of ALL of the sides of a three-dimensional object._



| 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.
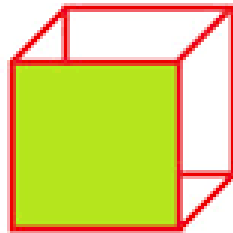
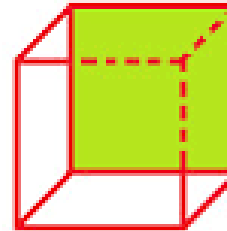The total area of the sides of a three-dimensional object without the bases.
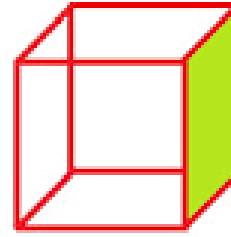


Left Side Face          Right Side Face

Front Face          Back Face

*Slant Height* – the height of a triangular face of a pyramid.

The distance up the side of a pyramid.