

## Grade 6 Mathematics Unit Preview Quarter 3: Geometry

Objectives: (Your student will be able to)

- Identify, classify, measure (using a protractor), draw, and label acute, right, obtuse, straight and reflex angles.
- Identify, label, and draw points, lines, line segments, vertices, rays, and planes.
- Identify, describe, and classify lines as intersecting, parallel, or perpendicular.
- Compare and classify triangles by sides and angle measure.
- Calculate the complement or supplement of a given angle.
- Determine a third angle measure of a triangle given two angle measures.
- Construct geometric figures (squares, triangles, rectangles) given their dimensions using tools and technology.
- Identify, describe, and draw a polygon.
- Identify and classify pyramids or prisms as triangular pyramids, rectangular pyramids, triangular prisms or rectangular prisms by the number of edges, faces or vertices.
- Identify and classify triangular or rectangular pyramids by the base.
- Identify and model transformation: translations, reflections, and rotations.
- Identify, describe, and represent, similarity and congruency with geometric figures and real-world objects.
- Identify and describe the relationship between the radius, diameter, center, chord, and arc of a circle.
- Find the circumference of a circle given the radius or diameter.
- Analyze the relationship between plane geometric figures and surfaces of solid figures: compare triangles to rectangular prisms and circles/rectangles to cylinders.

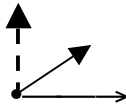
Vocabulary (attached)

Activities to do with your student (in addition to homework, optional):

- Draw angles. Estimate their measurement. Measure and compare to your estimate.
- Write clues to describe polygons. Try to guess your partners polygon.
- Use a compass or a computer to draw geometric figures.
- Generate numbers (roll dice, spinner, etc) to make a measurement of an angle. Find the measurement of its complementary angle and supplementary angle.

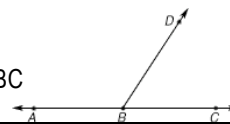
Vocabulary: (Words your student will need to understand)

• **Acute angle:** an angle that has a measure greater than  $0^\circ$  and less than  $90^\circ$ .



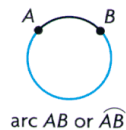
• **Adjacent angle:** Angles that are side by side and have a common vertex and ray.

$\angle ABD$  is adjacent to  $\angle DBC$

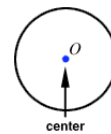


• **Arc:** a part of a circle named by its endpoints.

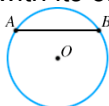
arc AB



• **Center:** The point inside a circle that is the same distance from each point on the circle.



• **Chord:** a line segment with its endpoints on a circle.



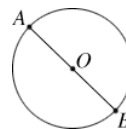
• **Circumference:** The distance around a circle.

• **Congruent:** Having the same size and shape.

• **Degree:** A unit for measuring angles and temperature.

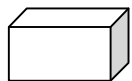
• **Diagonal:** A line segment that joins two vertices of a polygon but is not a side of the polygon.

• **Diameter:** A line segment that passes through the center of a circle and has its endpoints on the circle.

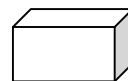


• **Edge:** The line segment where two faces of a 3-D figure meet.

edge

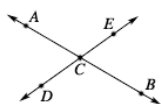


• **Face:** A flat surface of a 3-D figure.



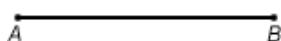
face

• **Intersecting lines:** Lines that cross at exactly one point.

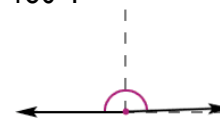


• **Label:** • **Complementary angles:** Two angles whose measures have a sum of  $90^\circ$ .

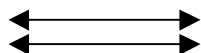
• **Line segment:** A part of a line that includes two points called endpoints, and all the points between them.



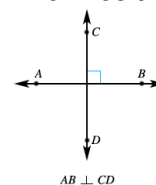
• **Obtuse angle:** An angle whose measure is greater than  $90^\circ$  and less than  $180^\circ$ .



• **Parallel lines:** Lines in a plane that never intersect.



• **Perpendicular lines:** Two lines that intersect to form four angles.



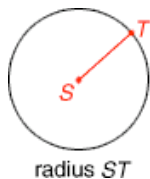
• **Pi ( $\pi$ ):** The ratio of the circumference of a circle to its diameter.

• **Point:** An exact location in space, usually represented by a dot.

## Vocabulary: (Words your student will need to understand)

• **Polygon:** A closed figure formed with 3 or more line segments.

• **Radius:** A line segment with one endpoint at the center of the circle and the other endpoint on the circle.

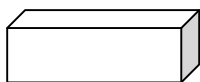


• **Protractor:** An instrument used to measure angles.

• **Ray:** A part of a line, with one endpoint, that continues without end in one direction.



• **Rectangular prism:** A solid figure in which all six faces are rectangles.



• **Rectangular pyramid:** A solid figure with a rectangular base and all other faces are triangles that meet at a common vertex.



• **Reflection (flip):** A movement of a figure to a new position by flipping it over a line.

• **Reflex angle:** An angle that has a value greater than 180 degrees but less than 360 degrees.

• **Right angle:** An angle formed by perpendicular lines, line segments, or rays with a measure of  $90^\circ$ .

• **Rotation (turn):** A movement of a figure by turning it around a fixed point.



• **Similar figures:** Figures with the same shape but not the necessarily the same size.

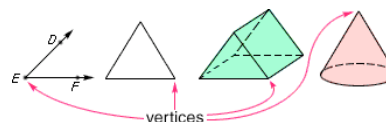
• **Solid figure:** A 3-dimensional figure (e.g., cube, sphere, cylinder, rectangular prism).

• **Straight angle:** An angle whose measure is  $180^\circ$ .

• **Vertex (vertices):** The point where two or more rays meet; the point of intersection of two sides of a polygon.



$\angle XYZ$  is a straight angle.



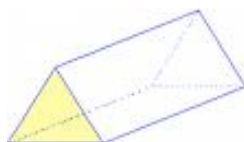
• **Supplementary angle:** Two angles whose measures have a sum of  $180^\circ$ .

• **Symmetrical:** When one half of a figure looks like the mirror image of the other half.

• **Transformation:** The moving of a figure by a translation, rotation, or reflection.

• **Translation (slide):** A movement of a figure along a straight line.

• **Triangular prism:** A prism with two identical, triangular bases.



• **Triangular pyramid:** A solid figure with a triangular base and all other faces are triangles that meet at a common vertex.

