Some Common Geometry Terminology

Attribute: Any characteristic of an object that can be described such as shape, color, size, number of sides, etc. **Properties** are characteristics that hold for all objects in a *class of objects*, e.g., all squares have 4 right angles and 4 congruent sides. However, you may see the words *attribute* and *property* used interchangeably in other resources.

Circle: A circle is the set of all points a fixed distance from a point called the center. The set of all point (called the "*locus* of points") in a plane equidistant from a fixed point called the center.

Cone: A "pointed" three-dimensional solid with a flat circular base, a curved side (called its "lateral surface"), and a "peak", called the vertex.

Congruent: Congruent figures are figures that have exactly the same size and shape. Line segments that are congruent have the same length. Angles that are congruent have the same angle measure.

Cube: A cube is a rectangular prism whose faces are all congruent squares. A cube is a regular polyhedron.

Cylinder: A three-dimensional solid figure with a curved lateral (side) surface having and two parallel circular bases.

Edge: The edge of a polyhedron is a line segment where two faces of a polyhedron meet.

Face: A face is a plane figure that serves as one side of a polyhedron or other solid figure and forms its boundary. A face of a polyhedron is one of the polygons that forms the polyhedron.

Heptagon: A polygon with seven sides.

Hexagon: A polygon with six sides. NOTE: The yellow pattern block is an example of a regular hexagon.

Isosceles Triangle: A triangle with two congruent sides and two congruent angles.

Line: An infinite set of points that forms a straight path and extends infinitely in opposite directions.

Line Segment: A part of a line that has two endpoints and contains all of the points of the line between the two endpoints.

Octagon: A polygon with eight sides.

Parallel Lines: Lines that lie in the same plane and do not intersect; parallel lines are always the same distance apart (equidistant).

Parallelogram: A quadrilateral with two pairs of congruent, parallel sides. NOTE: The blue, orange and tan pattern blocks are all parallelograms.
Some PROPERTIES of a parallelogram include:

- The diagonals of a parallelogram bisect each other
- The opposite angles of a parallelogram are congruent
- The adjacent angles of a parallelogram are supplementary

Pentagon: A polygon with five sides.

Perpendicular Lines: Lines that form right (90 degrees) angles.

Plane figures: One-dimensional and two-dimensional figures contained completely in a plane. Plane figures have length and/or width but no depth. Examples include angles, lines, circles, and polygons (triangles, squares, pentagons, hexagons, etc.).

Polygons: Closed plane figures (two-dimensional) that are bounded by line segments that meet only at their endpoints. Polygons are classified by the number of sides. Triangles, quadrilaterals, pentagons, hexagons, etc. are all polygons.

Polyhedron (Plural is *polyhedra*): Three-dimensional figures that are bounded by polygons.

Prism: A (three-dimensional) polyhedron that is bounded by two congruent, parallel polygons (called the *bases*) and whose other faces are parallelograms. A prism is often named by its base polygon, e.g, triangular prism, rectangular prism, etc.

Pyramid: A polyhedron with a polygonal base and three or more other triangular faces meeting in a common vertex. A *square pyramid*

has a square base and four triangles meeting at a vertex. A *triangular pyramid* has a triangular base with three triangles meeting at a vertex.

Quadrilateral: A polygon with four sides. Some special types of quadrilaterals:

- If there is exactly one pair of parallel sides, then the quadrilateral is a **trapezoid**.
- If there are two pairs of parallel sides, then the quadrilateral is a **parallelogram**.
- If the parallelogram has four congruent sides (with the same length), then the quadrilateral is a **rhombus**.
- If the parallelogram has a right angle, then the quadrilateral is a **rectangle**.
- If the parallelogram has a right angle and all four sides the same length, then the quadrilateral is a **square**.

Rectangle: A parallelogram with one right angle.

Regular: A figure is regular is all of its sides are equal (congruent) and all of the interior angles are equal (congruent). An equilateral triangle is a regular triangle.

Rhombus: An equilateral parallelogram. NOTE: The blue and tan pattern blocks are rhombuses (*rhombi*), as is the orange square. Some PROPERTIES of a rhombus:

- All of the properties of a parallelogram listed above.
- In addition, the diagonals of a rhombus are perpendicular.

Rectangular prism: A polyhedron with six rectangular faces**,** including the two congruent parallel bases.

Right Angle: An angle whose measure is exactly 90 degrees.

Segment: SEE *line segment*.

Side: (1) A side of a polygon is one of the line segments that form its boundary. (2) A side of an angle is one of the rays that form the angle.

Solid Figure: A three-dimensional figure; a solid figure encloses a region of space. Solid figures have three dimensions: length, width and height (depth). Examples include polyhedra, cubes, prisms, pyramids, cones, cylinders, spheres, etc.

Sphere: Informally, a "ball-like" figure with no flat bases. The set of all points in *space* that are equidistant from a center point. NOTE: The sphere is the three-dimensional analog of a circle.

Square: A polygon with four right angles and four congruent sides. A square is a rectangle; a square is a rhombus; a square is a parallelogram. NOTE: The orange pattern block is a square.

Trapezoid: A quadrilateral with *one and only one pair* of parallel sides. NOTE: The red pattern block is an isosceles trapezoid (*isosceles* means that two sides are congruent).

Triangle: A polygon with three sides. Triangles can be classified either by side lengths or by angle measures:

Scalene Triangle: A triangle with NO congruent sides (all sides have different lengths)

Isosceles Triangle: A triangle with TWO congruent sides (two side are equal in length)

Equilateral Triangle: A triangle with THREE congruent sides (all sides are equal in length)

Acute Triangle: A triangle whose interior angles all measure less than 90 degrees

Right Triangle: A triangle that has exactly one right angle

Obtuse Triangle: A triangle with exactly one interior angle that measures greater than 90 degrees

Equiangular triangle: A triangle whose interior angles are all equal in measure

NOTES: The name of a particular triangle can combine more than one descriptor. For example, an isosceles right triangle has two sides of equal length and one right angle; a scalene obtuse triangle has one obtuse angle and no sides equal. An equilateral triangle is a regular triangle. The green pattern block is an equilateral (equiangular) triangle.

Vertex: A vertex is a point that can be thought of informally as a *"corner"*.

- The *vertex of an angle* is the common endpoint of two rays that form the angle.
- A *vertex of a polygon* is a point where two sides meet.
- A *vertex of a polyhedron* is a point where three or more *faces* meet. Also, a *vertex of a polyhedron* is a point where three or more *edges* meet.
- The *vertex of a cone or pyramid* is the point opposite the base of the cone or pyramid; this vertex is often called an *apex*.