

Geometry

Connecting Math Ideas: Geometry, like measurement, can be organized by # of dimensions. Begin with a point (0-D) then use line segments (1-D) to connect points. Use line segments to create polygons (2-D) and use polygons to build a solid (3-D). As more sides and vertices are added to a regular polygon, it may begin to resemble a circle but it can **never** become a circle.

Teaching Tip: Deconstructing a cube helps students understand and name dimensions. Corners or points are called vertices (0-D). Line segments which connect vertices are called edges (1-D). The polygon that is created is called a face (2-D). Faces create a solid called a polyhedron (3-D). Polygons are named using Latin or Greek prefixes to denote the number of sides. Use a loop of string to create different polygons with students. Have three students each create a vertex. Add a fourth student to create a quadrilateral etc. Polygons can be regular or irregular; convex or concave. Polyhedrons are named using Latin or Greek prefixes to denote the number of faces.

0-Dimension Points	2-Dimensions Angles, Polygons, Circles	3-Dimensions Solids
<p>This is what your students should be able to articulate</p> <ul style="list-style-type: none"> • points have 0 dimensions • points measure 360° • an ordered pair locates a point on the coordinate plane • rays meet at a point or vertex to create angles 	<p>This is what your students should be able to articulate</p> <ul style="list-style-type: none"> • a right angle measures 90° • an acute angle measures less than 90° • a straight angle measures 180° • an obtuse angle measures between 90° and 180° • the sum of interior angles of all triangles is 180° – sum of interior angles of all quadrilaterals is 360° -sum of the interior angles of all pentagons is 540° ; etc. • a circle measures 360° 	<p>This is what your students should be able to articulate</p> <ul style="list-style-type: none"> • a net is a 2-dimensional shape that can be folded to form a 3-dimensional shape • a pyramid is a polyhedron with one regular polygon base and triangular faces that meet at a point • a prism is a polyhedron with two regular polygon bases and rectangular faces
Graphing Inequalities		Edges, Faces & Vertices
Coordinate Grid	Angles	Platonic Solids Part 1
<p style="text-align: center;">1-Dimension Lines, Line segments, Rays</p> <p>This is what your students should be able to articulate</p> <ul style="list-style-type: none"> • the number of lines of symmetry in a regular polygon is equal to the number of sides • lines are infinite and line segments are finite • lines are either parallel or intersect • perpendicular lines intersect at a right angle 	<p>Classifying Angles</p> <p>Right Angles-US Map</p> <p>Geometry Exploration</p> <p>Complementary/Supplementary Angles: Definition</p> <p>Angles Formed by Parallel Lines and Transversals</p>	<p>Platonic Solids Part 2</p> <p>Deconstructing a Castle</p>
Is this a Line of symmetry?	Polygons	
How many lines of symmetry?	Regular and Irregular Polygons	
Line Symmetry in Regular & Irregular Polygons	Geometry: Classification of Triangles -Measurement & Perimeter	
Line symmetry Challenge	Constructing the Balance Point in Triangles	
	To be a Triangle or no to be a Triangle	
	Composition and Decomposition Using an Isosceles Right Triangle	
	Creating Polygons	
	Tangrams	

	Application: Creating the World's Fair Quilt Pattern	
	Circles	
	Illustrating Circle Vocabulary	
	Making a Six-Pointed Star	
	Topology	
	Four Color Map Theorem	
	Topology - The Mathematics of Distortion	