

Geometry

Topic	Priority Standard	Learning Targets (LT)	Unit	Term Taught	Term(s) Reinforced
Constructions 18-24 days	<u>G.CO.D</u> Construct geometric figures using various tools and methods. Vocab or Pre-requisite skills needed: Chapter 1: Collinear points, non-collinear points, coplanar and non-coplanar points, line segment, ray, opposite rays, postulate, coordinate, distance, congruent segments, midpoint, segment bisector, angle, acute angle, obtuse angle, right angle, straight angle, congruent angles, angle bisector, complementary angles, supplementary	LT 1.1: Students will be able to communicate precise definitions of segments using undefined terms: point, line, and plane. LT 1.2A: Students will be able to use absolute value and segment addition postulate (SAP). LT 1.2B: Students will be able to use Angle Addition Postulate (AAP). LT 1.3A: Students will be able to apply the midpoint formula. . LT 1.3B: Students will be able to apply the distance formula. LT 1.4A: Students will be able to classify angles & use a protractor to measure angles LT 1.4B: Students will be able to use angle bisectors. LT 1.5: Students will be able to identify angle relationships such as linear pair & vertical.	1	Term 1	Terms 2, 3, 4, 5 & 6

	angles, adjacent angles, polygons, convex & concave polygon, equilateral, equiangular, regular, segment addition postulate, angle addition postulate, distance formula, midpoint formula, pythagorean theorem	LT 1.6: Students will be able to classify polygons. LT 1.7: Students will be able to construct copies of segments and angles.			
Congruence 48-52 days	<u>G.CO.C</u> Prove geometric theorems Vocab or Pre-requisite skills needed: Chapter 2: Conjecture, inductive reasoning, counterexample, Conditional statement, converse, inverse, contrapositive, logically equivalent, deductive reasoning, law of detachment, law of syllogism, theorem, perpendicular lines, vertical angles theorem, linear pair	LT 2.1: Students will use inductive reasoning. LT 2.2A: Students will be able to identify converse, inverse, & contrapositive from a conditional statement. LT 2.2B: Students will be able to write a biconditional statement. LT 2.3A: Students will be able to use deductive reasoning. LT 2.3B: Students will be able to make conclusions based on the laws of logic. LT 2.3C: Students will be able to distinguish between fallacies and laws of logic. LT 2.4: Students will be able to examine a diagram and apply postulates.	2-4	Terms 2 & 3	Terms 4, 5 & 6

	postulate, transitive property, symmetric property, reflexive property, right angle congruence theorem, distributive property, substitution property, subtraction property, addition property, division property, multiplication property, Chapter 3: parallel lines, skew lines, parallel planes, parallel postulate, perpendicular postulate, transversal, corresponding angles, alternate interior angles, alternate exterior angles, consecutive interior angles, corresponding angle postulate/converse, alternate interior /exterior angle theorem/converse, consecutive interior angle theorem/converse, transitive property	LT 2.5A: Students will be able to identify properties of equality and congruence. LT 2.5B: Students will be able to complete algebraic proofs. LT 2.6A: Students will be able to complete proofs involving segments. LT 2.6B: Students will be able to complete proofs involving angles. LT 2.7A: Students will be able to classify special angle pairs LT 2.7B: Students will be able to complete proofs involving special angle pairs. LT 3.1: Students will be able to identify alternate interior, alternate exterior, consecutive interior, consecutive exterior and corresponding angles. LT 3.2: Students will determine if special angle pairs formed by parallel lines & transversals are supplementary or congruent. LT 3.3A: Students will be able to use angle relationships to prove lines are parallel. LT 3.3B: Students will use special angle pairs theorems, postulates, and converses to write geometric proofs.			
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	of parallel lines, x-intercept, y-intercept, slope, slope intercept form, standard form, Chapter 4: scalene triangle, isosceles triangle, equilateral triangle, acute triangle, right triangle, obtuse triangle, regular triangle, triangle sum theorem, exterior angle theorem, third angles theorem, CPCTC, SSS, SAS, ASA Postulates, HL, AAS theorems, AAA, SSA, isosceles triangle theorem/converse	LT 3.4: Students will be able to find and compare the slopes of lines. Students will show that two lines in the coordinate plane are parallel or perpendicular by comparing their slopes and use this information to solve real world problems. LT 3.5A: Students will be able to graph lines in slope intercept and standard form. LT 3.5B: Students will be able to write equations of lines in slope intercept form, standard form and given two points. LT 3.6: Students will be able to find the distance between a point and a line. LT4.1: Students will be able to classify triangles by sides & angles. Students will be able to use Triangle Sum Theorems to find interior and exterior angles. LT4.2: Students will be able to identify congruent figures and understand the CPCTC (corresponding parts of congruent triangles are congruent) theorem LT4.3-4.5A: Students will be able to use the SAS (side angle side), SSS (side side side), ASA (angle side angle), AAS (angle angle side), HL (hypotenuse leg), and CPCTC properties.			
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		LT4.3-4.5B: Students will be able to use the SAS (side angle side), SSS (side side side), ASA (angle side angle), AAS (angle angle side), and HL (hypotenuse leg) properties to write geometric proofs. LT 4.6: Students will be able to use CPCTC property to write geometric proofs. LT 4.7: Students will use theorems about isosceles and equilateral triangles.			
Similarity 12-16 days	<u>G.SRT.B</u> Prove theorems involving similarity. Vocab or Pre-requisite skills needed: Chapter 5: Square root, radicand, index, rationalizing the denominator, midsegment of triangle, midsegment theorem, triangle inequality	LT 5.1: Students will be able to understand and use the properties of midsegments. LT 5.5A: Students will be able to rank sides & angles from smallest to largest. LT 5.5B: Students will be able to determine if three given side lengths will form a triangle and students will be able to find a range of possible side lengths for a third side when given two side lengths. LT 6.1: Students will be able to solve proportions, ratios and problems involving geometric mean. LT 6.2: Students will be able to identify valid	5-6	Term 3 Term 4	Terms 5 & 6

	theorem(sum of sides & sides vs angles), Chapter 6: ratio, proportion, cross product property, geometric mean, scale, similar figures, scale factor, perimeters of similar figures theorem, AA~ postulate, SSS~ Theorem, SAS~ Theorem, triangle proportionality theorem, converse of triangle proportionality theorem, transversal proportionality theorem, angle bisector proportionality theorem	properties of proportions and use those properties to solve problems. LT 6.3: Students will be able to apply properties of similar polygons. LT 6.4-6.5: Students will determine if triangles are similar using AA~, SSS~ & SAS~ LT 6.6: Students will be able to apply proportionality theorems.			
Trigonometry 14-18 days	<u>G.SRT.C</u> Define trigonometric ratios, and solve problems involving right triangles. Vocab or	LT 7.1A: Students will be able to apply the Pythagorean Theorem. LT 7.1B: Students will apply the Pythagorean Theorem to solve real world application problems. LT 7.2: Students will be able to apply the converse of the Pythagorean Theorem. LT 7.3: Students will be able to apply the altitude	7	Term 4	Terms 5 & 6

	Pre-requisite skills needed: Chapter 7: Pythagorean Theorem, Pythagorean triple, Converse of Pythagorean Theorem, Classifying Triangle Theorem (ACUTE), Classifying Triangle Theorem (OBTUSE), Triangle Inequality Theorem(sum of sides, Triangle Inequality Theorem(sides vs angles) ,Similar Right Triangles Theorem, Geometric Mean, Geometric Mean(Altitude) or GMA Theorem, Geometric Mean(Leg) or GML Theorem ,45°-45°-90° Right Triangle, 30°-60°-90° Right Triangle, Trigonometry, Sine, Cosine, Tangent, Angle of Elevation, Angle of	rule and the leg rule, and/or the 3 Bear method to solve proportions. LT 7.4: Students will use relationships using the sides in special right triangles to solve problems. (30-60-90 triangles and 45-45-90 triangles) LT 7.5-7.6: Students will be able to use SIN, COS, and TAN ratios to solve right triangles. LT 7.6: Students will use trigonometric ratios to solve word problems involving angles of elevation and depression. LT 7.7: Students will use the inverse SIN, COS, and TAN ratios to solve right triangles. LT 7.8: Students will apply the Law of Sines and Law of Cosines to solve triangles.			
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	Depression, Law of Sines, Law of Cosines				
Volume 33-35 days	<u>G.GMD.A</u> Explain volume formulas and use them to solve problems. Vocab or Pre-requisite skills needed: -Angles in polygons -Properties of parallelograms -Quadrilateral as a parallelogram -Properties of rectangles, rhombi, and squares -Properties of trapezoids and kites -Calculate area of geometric shapes Ch. 12 Vocab: Polyhedron, Face, Edge, Vertex,	LT 8.1: Students will be able to apply interior and exterior angle theorems for polygons. LT 8.2: Students will be able to apply properties of parallelograms. LT 8.3: Students will be able to show a quadrilateral is a parallelogram. LT 8.4: Students will be able to apply properties of rectangles, rhombi & squares. LT 8.5: Students will be able to apply properties of trapezoids & kites. LT 11.1: Students will be able to find the area of triangles & parallelograms LT 11.2: Students will be able to find the area of trapezoids, rhombi & kites. LT 11.12: Students will be able to find the area of composite shapes. LT 11.3: Students will be able to find the area & perimeter of similar figures.	8, 11, 12	Terms 5 & 6	

	Euler's Theorem, Platonic solids, Convex polyhedron, Concave polyhedron, Cross section, Net, Prism, Bases, Lateral faces, Lateral Area, Surface Area, Height of a prism, Oblique prism, Cylinder, Pyramid, Altitude, Regular pyramid, Slant height of regular pyramid, Cone, Slant height of right cone, Volume, Volume congruence postulate, Volume Addition Postulate, Cavalieri's Principle, Sphere, Center of a sphere, Radius of a sphere, Chord of a sphere, Diameter of a sphere, Great circle of a sphere, Hemispheres	LT 11.6: Students will be able to find the area of regular polygons. LT 12.1: Students will identify solids, cross sections and be able to identify shapes from nets LT 12.2: Students will be able to find lateral & surface area of prisms & cylinders LT 12.3 Students will be able to find lateral & surface area of pyramids & cones LT 12.4: Students will be able to find volume of prisms LT 12.5A: Students will be able to find volume of cylinders & cones LT 12.5B : Students will be able to find volume of pyramids LT 12.6: Students will be able to find surface area & volume of spheres LT 12.7: Students will be able to use lateral, surface area and volume to solve real world application problems			
Transformations	<u>G.CO.A</u> Experiment with	LT 9.1: Students will be able to translate a figure, write a rule for a translation.	9	Term 6	

7-10 days	transformations in the plane. Vocab or Pre-requisite skills needed: Preimage, image, rigid motion, reflection, translation, composition of rigid motions, rotation, glide reflection, reflectional symmetry, line of symmetry, rotational symmetry, point symmetry, dilation	LT9.3: Students will be able to find a reflected image, write a rule for a reflection & perform reflections on & off a coordinate grid LT 9.4: Students will be able to rotate a figure & write a rule for rotation LT 9.5: students will be able to find the image of a figure after a composition of rigid motions LT 9.6: Students will be able to describe the rotations and/or reflections that carry a polygon onto itself, & identify types of symmetry in a figure. LT 9.7: Students will be able to dilate figures on & off the coordinate plane LT 10.1: Students will be able to identify the parts of a circle. LT 10.2: Students will be able to classify arcs and find their measures LT 10.3: Students will be able to apply rules relating to chords. LT 10.4: Students will be able to use theorems relating to inscribed angles and polygons. LT 10.5: Students will be able to apply the theorems relating to angles formed by tangents,			
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		chords and secants. LT 10.6: Students will be able to apply theorems relating to segments formed by tangents, chords, and secants,			
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