

Geometry Curriculum Map



2021-2022

Geometry Scope and Sequence 2021-2022

Unit 1: Geometric Structure

- 1) Tools of Geometry
- 2) Reasoning and Proof
- 3) Parallel and Perpendicular Lines

Unit 2: Congruence

- 4) Congruent Triangles
- 5) Relationships in Triangles
- 6) Quadrilaterals

Unit 3: Similarity

- 7) Proportions and Similarity
- 8) Right Triangles and Trigonometry

Unit 4: Measurement

- 10) Circles
- 11) Areas of Polygons and Circles
- 13) Probability and Measurement
- 12) Extending Surface Area and Volume

Content Area:	Mathematics	Course:	Geometry	Pacing:	10-11 Days
Unit 1: Geometric Structure					
Chapter 1: Tools of Geometry					
Assessment: Chapter 1					
Content	Pacing (days)	Standard	Instructional Resources		
1.1 Points, Lines and Planes 1.2 Linear Measure 1.3 Distance and Midpoints 1.4 Angle Measure 1.5 Angle Relationships 1.6 Two Dimensional Figures 1.7 Three Dimensional Figures	8-9	11.3.1 11.3.2 11.3.3	<i>Geometry</i> by Glencoe Kahoot Aleks Online Math Program Daily Quizzes		
Chapter 1 Assessment	2				
Essential Vocabulary					
Collinear, coplanar, congruent, midpoint, segment bisector, angle, vertex, angle bisector, perpendicular, polygon, perimeter, volume					
Students will... 1) Identify and odel points, lines, and planes 2) Identify intersecting lines and planes 3) Measure segments 4) Calculate with measures 5) Find the distance between two points 6) Find the midpoint of a segment 7) Measure and classify angles 8) Identify and use congruent angles and the bisector of an angle 9) Identify and use special pairs of angles 10) Identify perpendicular lines 11) Identify and name polygons 12) Find perimeter, circumference and area of two dimensional figures 13) Identify and name three dimensional figures 14) Find surface area and volume					

Content Area:	Mathematics	Course:	Geometry	Pacing:	12-14 Days
Unit 1: Geometric Structure					
Chapter 2: Reasoning and Proof					
Assessment: Mid Chapter 2 , Chapter 2					
Content	Pacing (days)	Standard	Instructional Resources		
2.1 Inductive Reasoning & Conjecture 2.2 Logic 2.3 Conditional Statements 2.4 Deductive Reasoning 2.5 Postulates and Paragraph Proofs Mid Chapter 2 Test	7-8	11.3.1 11.4.2	<i>Geometry</i> by Glencoe Kahoot Aleks Online Math Program Daily Quizzes		
2.6 Algebraic Proof 2.7 Proving Segment Relationships 2.8 Proving Angle Relationships Chapter 2 Assessment	5-6				
Essential Vocabulary					
Inductive reasoning, conjecture, counterexample, negation, if-then statement, hypothesis, conclusion, converse, inverse, postulate, proof, theorem					
Students will... 1) Make conjectures based on inductive reasoning 2) Find counterexamples 3) Determine truth values of negations, conjunctions, and disjunctions 4) Represent conjunctions and disjunctions using Venn diagrams 5) Analyze statements in if-then form 6) Write the converse, inverse, and contrapositive of if-then statements 7) Use the Law of Detachment 8) Use the Law of Syllogism 9) Identify and use basic postulates about points, lines and planes 10) Write paragraph proofs 11) Use algebra to write two-column proofs 12) Use properties of equality to write geometric proofs 13) Write proofs involving segment addition 14) Write proofs involving segment congruence 15) Write proofs involving angle relationships					

Content Area:	Mathematics	Course:	Geometry	Pacing:	10-11 Days
Unit 1: Geometric Structure					
Chapter 3: Parallel and Perpendicular Lines					
Assessment: Chapter 3					
Content		Pacing (days)	Standard	Instructional Resources	
3.1 Parallel Lines and Transversals 3.2 Angles and Parallel Lines 3.3 Slopes of Lines 3.4 Equations of Lines 3.5 Proving Lines Parallel 3.6 Perpendiculars and Distance		8-9	11.3.1 11.4.2 11.2.1 11.2.2 11.3.2	Geometry by Glencoe Kahoot Aleks Online Math Program Daily Quizzes	
Chapter 3 Assessment		2		Marbleslides by Desmos	
Essential Vocabulary					
Parallel lines, skew lines, parallel planes, transversal, interior angles, exterior angles, corresponding angles, slope, rate of change, slope-intercept form, point-slope form, equidistant					
Students will... 1) Identify the relationships between two lines or two planes 2) Name angle pairs formed by parallel lines and transversals 3) Use theorems to determine the relationships between specific pairs of angles 4) Use algebra to find angle measurements 5) Find slopes of lines 6) Use slope to identify parallel and perpendicular lines 7) Write an equation of a line given information about the graph 8) Solve problems by writing equations 9) Recognize angle pairs that occur with parallel lines 10) Prove that two lines are parallel 11) Find the distance between a point and a line 12) Find the distance between parallel lines					

Content Area:	Mathematics	Course:	Geometry	Pacing:	10-11 Days
Unit 2: Congruence					
Chapter 4: Classifying Triangles					
Assessment: Chapter 4					
Content	Pacing (days)	Standard	Instructional Resources		
4.1 Classifying Triangles 4.2 Angles of Triangles 4.3 Congruent Triangles 4.4 Proving Triangles Congruent-SSS, SAS 4.5 Proving Triangles Congruent-ASA, AAS 4.6 Isosceles and Equilateral Triangles 4.7 Congruence Transformations	8-9	11.3.1 11.3.2	Geometry by Glencoe Kahoot Aleks Online Math Program Daily Quizzes		
Chapter 4 Assessment	2		Desmos		
Essential Vocabulary					
Equiangular triangle, equilateral triangle, isosceles triangle, scalene triangle auxiliary line, congruent, congruent polygons, corresponding parts, included angle, included side, base angle, transformation, preimage, image, reflection, translation, rotation					
Students will... 1) Identify and classify triangles by angle measures 2) Identify and classify triangles by side measures 3) Apply the Triangle Angle-Sum Theorem 4) Apply the Exterior Angle Theorem 5) Name and use corresponding parts of congruent polygons 6) Prove triangles congruent using the definition of congruence 7) Use the SSS Postulate to test for triangle congruence 8) Use the SAS Postulate to test for triangle congruence 9) Use the ASA Postulate to test for triangle congruence 10) Use the AAS Postulate to test for triangle congruence 11) Use properties of isosceles triangles 12) Use properties of equilateral triangles 13) Identify reflections, translations, and rotations 14) Verify congruence after a congruence transformation					

Content Area:	Mathematics	Course:	Geometry	Pacing:	9-10 Days
Unit 2: Congruence					
Chapter 5: Relationships in Triangles					
Assessment: Chapter 5					
Content	Pacing (days)	Standard	Instructional Resources		
5.1 Bisectors of Triangles 5.2 Medians and Altitudes of Triangles 5.3 Inequalities in One Triangle 5.4 Indirect Proof 5.5 The Triangle Inequality 5.6 Inequalities in Two Triangles	7-8	11.3.1 8.3.3	<i>Geometry</i> by Glencoe Aleks Online Math Program Daily Quizzes		
Chapter 5 Assessment	2				
Essential Vocabulary					
Perpendicular bisector, concurrent lines, point of concurrency, circumcenter, incenter, median, centroid, altitude, orthocenter, indirect reasoning, indirect proof, proof by contradiction					
Students will... 1) Identify and use perpendicular bisectors in triangles 2) Identify and use angle bisectors in triangles 3) Identify and use medians in triangles 4) Identify and use altitudes in triangles 5) Recognize and apply properties of inequalities to the measures of the angles of a triangle 6) Recognize and apply properties of inequalities to the relationships between the angles and sides of a triangle 7) Write indirect algebraic proofs 8) Write indirect geometric proofs 9) Use the Triangle Inequality Theorem to identify possible triangles 10) Prove triangle relationships using the Triangle Inequality Theorem 11) Apply the Hinge Theorem or its converse to make comparisons in two triangles 12) Prove triangle relationships using the Hinge Theorem or its converse					

Content Area:	Mathematics	Course:	Geometry	Pacing:	10-11 Days
Unit 2: Congruence					
Chapter 6: Quadrilaterals					
Assessment: Chapter 6					
Content	Pacing (days)		Standard	Instructional Resources	
6.1 Angles of Polygons 6.2 Parallelograms 6.3 Tests for Parallelograms 6.4 Rectangles 6.5 Rhombi and Squares 6.6 Trapezoids and Kites	8-9		11.3.1 11.3.2	<i>Geometry</i> by Glencoe Aleks Online Math Program Daily Quizzes	
Chapter 6 Assessment	2				
Essential Vocabulary					
Diagonal, parallelogram, rectangle, rhombus, square, trapezoid, base, legs, isosceles trapezoid, midsegment of a trapezoid					
Students will... 1) Find and use the sum of the measures of the interior angles of a polygon 2) Find and use the sum of the measures of the exterior angles of a polygon 3) Recognize and apply properties of the sides and angles of a parallelogram 4) Recognize and apply properties of the diagonals of a parallelogram 5) Recognize the conditions that ensure a quadrilateral is a parallelogram 6) Recognize that a set of points forms a parallelogram in the coordinate plane 7) Recognize and apply properties of rectangles 8) Determine whether parallelograms are rectangles 9) Recognize and apply properties of rhombi or squares 10) Determine whether quadrilaterals are rectangles, rhombi, or squares 11) Apply properties of trapezoids 12) Apply properties of kites					

Content Area:	Mathematics	Course:	Geometry	Pacing:	10-11 Days
Unit 3: Similarity					
Chapter 7: Ratios and Proportions					
Assessment: Chapter 7					
Content	Pacing (days)	Standard	Instructional Resources		
7.1 Ratios and Proportions 7.2 Similar Polygons 7.3 Similar Triangles 7.4 Parallel Lines and Proportional Parts 7.5 Parts of Similar Triangles 7.6 Similarity Transformations 7.7 Scale Drawings and Models	8-9	11.3.1 11.3.3	<i>Geometry</i> by Glencoe Aleks Online Math Program Daily Quizzes		
Chapter 7 Assessment	2				
Essential Vocabulary					
Ratio, proportion, extremes, means, cross products, similar polygons, scale factor, dilation, similarity transformation, enlargement, reduction, scale model, scale drawing, midsegment of a triangle					
Students will... 1) Write ratios 2) Write and solve proportions 3) Use proportions to identify similar polygons 4) Solve problems using the properties of polygons 5) Identify similar triangles using the AA Similarity Postulate and the SSS and SAS Similarity Theorems 6) Use similar triangles to solve problems 7) Use proportional parts within triangles 8) Use proportional parts with parallel lines 9) Recognize and use proportional relationships of corresponding angle bisectors, altitudes and medians of similar triangles 10) Use the Triangle Bisector Theorem 11) Identify similarity transformations 12) Verify similarity after a similarity transformation 13) Interpret scale models 14) Use scale factors to solve problems					

Content Area:	Mathematics	Course:	Geometry	Pacing:	12-13 Days
Unit 3: Similarity					
Chapter 8: Right Triangles and Trigonometry					
Assessment: Chapter 8					
Content	Pacing (days)	Standard	Instructional Resources		
8.1 Geometric Mean 8.2 The Pythagorean Theorem & Converse 8.3 Special Right Triangles 8.4 Trigonometry 8.5 Angles of Elevation and Depression 8.6 The Law of Sines & Law of Cosines 8.7 Vectors	10-11	11.3.1 12.2.1 12.2.3 12.3.1 12.3.2	<i>Geometry</i> by Glencoe Aleks Online Math Program Daily Quizzes Desmos		
Chapter 8 Assessment	2				
Essential Vocabulary					
Geometric mean, Pythagorean triple, trigonometry, trigonometric ratio, sine, cosine, tangent, angle of elevation, angle of depression, Law of Sines, Law of Cosines, vector, magnitude, resultant, component form					
Students will... 1) Find the geometric mean between two numbers 2) Solve problems involving relationships between parts of a right triangle and the altitude to its hypotenuse 3) Use the Pythagorean Theorem 4) Use the Converse of the Pythagorean Theorem 5) Use the properties of 45-45-90 triangles 6) Use the properties of 30-60-90 triangles 7) Find trigonometric ratios using right triangles 8) Use trigonometric ratios to find angle measures in right triangles 9) Solve problems involving angles of elevation and depression 10) Use angles of elevation and depression to find the distance between two objects 11) Use the Law of Sines to solve triangles 12) Use the Law of Cosines to solve triangles 13) Perform vector operations geometrically 14) Perform vector operations on the coordinate plane					

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Content Area:	Mathematics	Course:	Geometry	Pacing:	9-10 Days
Unit 4: Measurement					
Chapter 11: Areas of Polygons and Circles					
Assessment: Chapter 11					
Content	Pacing (days)		Standard	Instructional Resources	
11.1 Areas of Parallelograms and Triangles 11.2 Areas of Trapezoids, Rhombi, & Kites 11.3 Areas of Circles and Sectors 11.4 Areas of Regular Polygons & Composite Figures 11.5 Areas of Similar Figures	7-8		11.3.2 11.3.3	<i>Geometry</i> by Glencoe Aleks Online Math Program Daily Quizzes Desmos	
Chapter 11 Assessment	2				
Essential Vocabulary					
Base of a parallelogram, height of a parallelogram, base of a triangle, height of a triangle, height of a trapezoid, sector of a circle, center of a regular polygon, radius of a regular polygon, apothem, central angle of a regular polygon					
Students will... 1) Find perimeters and areas of parallelograms 2) Find perimeters and areas of triangles 3) Find areas of trapezoids 4) Find areas of rhombi and kites 5) Find areas of circles 6) Find areas of sectors of circles 7) Find areas of regular polygons 8) Find areas of composite figures 9) Find areas of similar figures by using scale factors 10) Find scale factors or missing measures given the areas of similar figures					

Content Area:	Mathematics	Course:	Geometry	Pacing:	10-11 Days
Unit 4: Measurement					
Chapter 13: Probability and Measurement					
Assessment: Chapter 13					
Content	Pacing (days)		Standard	Instructional Resources	
13.1 Representing Sample Spaces 13.2 Probability with Permutations and Combinations 13.3 Geometric Probability 13.4 Simulations 13.5 Probabilities of Independent and Dependent Events 13.6 Probabilities of Mutually Exclusive Events	8-9		11.4.3	<i>Geometry</i> by Glencoe Aleks Online Math Program Daily Quizzes Desmos	
Chapter 13 Assessment	2				
Essential Vocabulary					
Sample space, tree diagram, permutation, factorial, combination, geometric probability, random variable, expected value, compound events, independent events, dependent events, conditional probability, mutually exclusive, complement					
Students will... 1) Use lists, tables, and tree diagrams to represent sample spaces 2) Use the Fundamental Counting Principle to count outcomes 3) Use permutations with probability 4) Use combinations with probability 5) Find probabilities by using length 6) Find probabilities by using area 7) Design simulations to estimate probabilities 8) Summarize data from simulations 9) Find probabilities of independent and dependent events 10) Find probabilities of events given the occurrence of other events 11) Find probabilities of events that are mutually exclusive and events that are not 12) Find probabilities of complements					

Content Area:	Mathematics	Course:	Geometry	Pacing:	10-11 Days
Unit 4: Measurement					
Chapter 12: Extending Surface Area and Volume					
Assessment: Chapter 12					
Content		Pacing (days)	Standard	Instructional Resources	
12.1 Representations of 3D Figures 12.2 Surface Areas of Prisms & Cylinders 12.3 Surface Areas of Pyramids & Cones 12.4 Volumes of Prisms & Cylinders 12.5 Volumes of Pyramids & Cones 12.6 Surface Areas and Volumes of Spheres		8-9	11.3.3	<i>Geometry</i> by Glencoe Aleks Online Math Program Daily Quizzes Desmos	
Chapter 12 Assessment		2			
Essential Vocabulary					
Right solid, oblique solid, isometric view, cross section, lateral face, lateral edge, altitude, lateral area, axis, regular pyramid, slant height, right cone, oblique cone, great circle					
Students will... 1) Draw isometric views of three-dimensional figures 2) Investigate cross sections of three-dimensional figures 3) Find lateral areas and surface areas of prisms 4) Find lateral areas and surface areas of cylinders 5) Find lateral areas and surface areas of pyramids 6) Find lateral areas and surface areas of cones 7) Find volumes of prisms 8) Find volumes of cylinders 9) Find volumes of pyramids 10) Find volumes of cones					