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Cliffside Park Public Schools

Department: **Mathematics**	Course Title **Geometry**
Textbook(s): *Prentice Hall Mathematics Geometry*	

Date:	**Unit 1, September 8 to September 25**	**Unit 2, September 29 to October 16**
Essential Question(s):	• What appears to be true about three angle bisectors of any triangle? • How can you use inductive reasoning to make conjectures?	• What is a good definition? • How can you justify steps in a logical argument? • How do you use logical reasoning to draw a conclusion? • How do you write a conditional statement, and a bi-conditional statement?
Content	• Using inductive reasoning • Points, Lines, and Plans • Segments, Rays, Parallel Lines and Planes • Measuring Segments and Angles • The Coordinate Plane • Perimeter, Circumference, and Area	• Conditional Statements • Bi-conditionals and Definitions • Deductive Reasoning • Reasoning in Algebra • Proving Angles Congruent
Skills:	• Find pattern of sequence. • Find counterexample. to show each conjecture is false • Are three points collinear • Naming planes • Find intersection of planes • Graph coordinate points and state whether they are collinear • Sketch line segments, rays, and lines • Name parallel segments • Find the length of each segment and determine if segment are congruent • Find the midpoint of a segment • Measure and classify an angle • Find the coordinate of a midpoint of a segment • Find the distance between two points • Find the coordinates of the midpoint of two points • Find the distance between two points	• How to recognize conditional statements • How to write converses of conditional statements • How to write bi conditional statements • How to recognize a good definition • How to connect reasoning in Algebra and Geometry • How to identify angle pairs • Identify hypothesis and conclusion of conditional statements • Write conditional statement • Find counter examples • Write the converse of the conditional statement • Write the Bi conditional of a conditional if possible • Determine whether a statement has a good definition • Solve for a variable • Learning properties of congruence • Learning properties of equality • Naming angles

	• Find the perimeter & area of polygons • Find the circumference of circle	• Using angles to find variable
Standards/Benchmarks	**G.CO.1, G.CO.9, G.CO.10, G.CO.11, N.Q.1**	**G.CO.9, G.CO.10, G.CO. 11, G.GPE.4, G.GPE.5, G.GPE.7**
Assessments/Resources	• Tests/Notebooks • Handouts • Textbook and Workbook Assignment	• Tests/Notebooks • Handouts • Textbook and Workbook Assignments

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Cliffside Park Public Schools

Department:	Course Title
Mathematics	**Geometry A**

Textbook(s): *Prentice Hall Mathematics Geometry*

	Unit 3, October 19 to November 13	Unit 4, November 16 to 24
Essential Question(s):	• What do you know about two lines cut by a transversal? • What are the angle classifications? • How do you classify triangles according to their sides and angles? • How do you find interior and exterior angle measures of polygons? • What do you know in regards to the slopes of lines?	• How can you prove that triangles are congruent? • How do you prove that two triangles in the framework of a bridge are congruent? • Is there an AAA congruence theorem? Explain your answer • How can you identify overlapping triangles line scaffolding?
Content	• Properties of Parallel Lines • Proving Lines Parallel • Parallel Lines and the Triangle Angle –Sum Theorem • The Polygon Angles –Sum Theorems • Lines in the Coordinate Plane • Slopes of Parallel and Perpendicular Lines	• Congruent Figures • Triangle Congruence by SSS and SAS • Triangle Congruence by ASA and AAS • Using Congruent Triangles: (CPCTC) to identify other congruent sides or angles • Isosceles and Equilateral Triangles • Congruence in Right Triangles and HL • Proofs using coordinate geometry
Skills:	• Classify angles formed by parallel lines and transversal • Relate parallel and perpendicular lines • Classify triangles and find the measures of their angles • Use exterior angles of triangles to find other angles • Classify polygons • Determine polygon interior and exterior angle sums • Graph lines • Write equations of lines in slope-intercept, standard and point-slope form • Relate slope to parallel lines and perpendicular lines • Use algebra to find missing angles of polygons • Determine if a figure is a polygon • Find interior and exterior angles of regular polygons	• Use Algebra to find missing values in congruent figures • Use SSS postulate or SAS postulate to prove triangle congruent • Use ASA postulate and AAS theorem to prove triangle • Use CPCTC along with SSS, SAS, ASA, and AAS to prove statements true • Solve systems of equations • Using isosceles triangles properties to solve for variables • Use equilateral triangle properties to solve for variables • Using the HL theorem to Right triangles congruent • Use coordinate geometry to classify triangles and prove triangle congruence

	• Write equations for line parallel or perpendicular to a given line	
Standards/Benchmarks	**G.CO.1, G.CO.9, G.CO.10, G.CO.12, G.MG.3, G.GPE.5, G.SRT.5**	**G.CO.10, G.CO.12, G.SRT.5, G.PE.4**
Assessments/Resources	• Tests/Notebooks • Handouts • Textbook and Workbook Assignments	• Tests/Notebooks • Handouts • Textbook and Workbook Assignments

Department: **Mathematics**		**Course Title** **Geometry A**
Textbook(s): *Prentice Hall Mathematics Geometry*		
	Unit 5, November 30 to December 11	**Unit 6, December 14 to 22**
Essential Question(s):	• What is the ratio of the lengths of two segments? • How can you use indirect reasoning to give a convincing argument that an obtuse triangle has, at most, one obtuse angle? • Why is the distance between two points greater than the difference of the distance from a third point?	• How do you classify the special quadrilaterals? • How do you find the missing angles in a parallelogram? • How do you find the missing sides of a parallelogram? • How can you find the areas of special quadrilaterals and regular polygons?
Content	• Mid-segments of Triangles • Bisectors in Triangles • Concurrent Lines, Medians, Altitudes, angle bisectors, and perpendicular bisectors • Inverses, Contra positives, and indirect Reasoning (optional) • Inequalities in Triangles	• Classifying Quadrilaterals • Properties of parallelograms • Proving a quadrilateral is a parallelogram. • Special parallelograms • Trapezoids and kites • Polygons in the coordinate plane

Skills:	• Use the triangle midsegment theorem to solve problems • Identifying parallel segments • Find the parameter of a triangle given the midsegment • Solve for the variable using perpendicular bisector theorem • Solve for the variable using angle bisector theorem • Identify medians and altitudes of triangles • Use perpendicular bisector theorem to solve problems • Find the negation of a statement (optional) • Finding possible side lengths using the triangle inequality theorem • Explain why certain lengths of side are not possible by using triangle inequality theorem	• Determine the most precise name of quadrilateral • Find values of variable in special quadrilaterals • How to use relationships among sides and angles of parallelograms • How to use relationships involving diagonals of parallelograms as transversals • How to use property of diagonals of rhombuses and rectangles • How to determine whether a parallelogram is a rhombus or a rectangle • How to verify and use property of trapezoids and kites • Set up and solve a system of linear equations using properties of parallelograms • Find the measure of angles using properties of parallelograms • Find the diagonal length using properties of parallelograms • Find angle measures in trapezoids • Find the value of the variable using properties of trapezoids
Standards/Benchmarks	**G.CO.3, G.CO.9, G.CO.10, G.CO.11, G.SRT.5**	**G.CO.10, G.CO.11, G.SRT.5. G.GPE.4, G.GPE.7**
Assessments/Resources	• Tests/Notebooks • Handouts • Textbook and Workbook Assignments	• Tests/Notebooks • Handouts • Textbook and Workbook Assignments

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Department: **Mathematics**	Course Title **Geometry A**	
Textbook(s): *Prentice Hall Mathematics Geometry*		
	Unit 7, January 4 to January 27	**Unit 8, January 28 to February 12**
Essential Question(s):	• How can you multiply and divide numbers that are under radical signs? • How can you use the properties of 30-60-90, and 45-45-90 to find the dimensions you need to calculate the area?	• How do you find dimensions from a scale drawing? • How can you use similar triangles and measurements to find distances that are difficult to measure directly? • Can you conclude that a ny two triangles with equal perimeters and equal areas are similar? • How does the length of the altitude of a right triangle compare with the lengths of the segments of the hypotenuse?
Content	• Areas of parallelograms and triangles • Simplifying radicals • Pythagorean Theorem and it's converse • Special right triangles • Areas of trapezoids, rhombuses and kites • Areas of regular polygons • Areas of circles and arcs and sectors	• Ratios and proportions • Quadratic equations • Similar polygons • Proving triangles similar • Similarity in right triangles • Proportions in triangles • Perimeters and areas of similar figures
Skills:	• Find the areas of parallelograms, rhombuses, triangles and circles • Simplify square roots • Use the Pythagorean theorem and it's converse • Find measures of central angles and arcs • Find circumference and arc lengths • Find areas of circles, sectors and segment of circles • Find the area in the coordinate plane of a parallelogram • Find the length of hypotenuse using the Pythagorean triples • Find the length of the side of a right triangle in simplest radical form • Classify triangles as acute, obtuse, or right • Use 45-45-90 triangle and 30-60-90 triangle relationships to find the length of the sides and angles of a triangle	• Write ratios and solve proportions • Identify and apply similar polygons • Find and use relationships and similar right triangles • Use side splitter theorem • Use triangle bisector theorem • Use the relationship between a radius and tangent • Use relationships between two tangents from one point • Use congruent chords, arcs, and central angles to solve problems • Recognize chords, secants and tangents • Find the measure of angle formed by chords, secants, and tangents to a circle • Find a measure of an inscribed angle • Find the measure of an angle form by a tangent and secant

		• Use scale drawings to compare dimension of real life situation • Using similar figures to solve for variables • Find the geometric mean • Using the triangle angle bisector theorem to solve for a variable • Using diameters and chords to find missing measurements • Find a tangent to a circle • Use inscribe circles to find perimeters of triangles • Solve problems using inscribe angle
Standards/Benchmarks	**F.IF.7,G.CO.5, G.CO.11, G.CO.13, G.MG.1, G,SRT.4, G,SRT.5, G.SRT.8**	**A.CED.1, G.C.2, G.C.4, G.C.5, G.SRT.4, G.SRT.5, G.GPE.5, G.GPE.6**
Assessments/Resources	• Tests/Notebooks • Handouts • Textbook and Workbook Assignments –	• Tests/Notebooks • Handouts • Textbook and Workbook Assignments –

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Cliffside Park Public Schools

Department: **Mathematics**	Course Title **Geometry A**

Textbook(s): *Prentice Hall Mathematics Geometry*		
	Unit 9, February 22 to March 12	**Unit 10, March 15 to April 16**
Essential Question(s):	• How do you use the trigonometric ratio to estimate the distance of an object? • How do you use the trigonometric ratio to estimate the angle of an object?	• How can you draw a net for a graham cracker box? • How can you recognize nets of space figures? • How can you make a foundation drawing using an isometric drawing?
Content	• The tangent ratio • Sine and Cosine ratios • Angles of elevation an depression • Vectors • Law of Sines and the Law of Cosines	• Space figure and nets • Surface area of prisms, cylinders, pyramids and cones • Volumes of prisms, cylinders, pyramids and cones • Surface areas and volumes of spheres
Skills:	• Use trigonometry and the Law of Sines and the Law of Cosines to solve problems • Find the missing values using trigonometric ratios • Use Vectors to solve problems	• Draw a cube structure • Match a three dimensional figure with the net • Sketch a polyhedron whose faces are all rectangles
Standards/Benchmarks	**G.SRT.6, G.SRT.8, G.SRT.10, G.SRT.11, G.MG.1, N.VM.1, N.VM.4,**	**G.GMD.1, G.GMD.2, G.GMD.3, G.GMD.4, N.Q.1**
Assessments/Resources	• Weekly Quizzes • Unit Tests • Textbook and Workbook Assignments	• Weekly Quizzes • Unit Tests • Textbook and Workbook Assignments

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Department: **Mathematics**	Course Title **Geometry A**

Textbook(s): *Prentice Hall Mathematics Geometry*		
	Unit 11, April 19 to May 7	**Unit12, May 10 to June 4**
Essential Question(s):	• How can you use congruent cords, arcs, and central angles to find the missing values? • How can you find the measure of an inscribed angle? • How can you find the measure of an angle formed by a tangent and a cord? • How do you find the measure of angles formed by cords, secants, and tangents?	• Does the transformation appear to be an isometric? • How do you describe translations using vectors? • How do you draw and identify rotation images of figures? • How do you identify glide reflections? • How do you identify the type of symmetry in a figure?
Content	• Tangent Lines • Chords and arcs • Inscribed angles • Circles in the coordinate plane	• Reflections • Translations • Rotations • Symmetry • Tessellations • Dilations
Skills:	• Find the perimeter of a polygon. • Find the missing length. • Determine tangent lines. • Identify the inscribed angle and its intercepted arc.	• Find an angle or point from the pre-image and name its image. • Given four points find the reflection image. • Describe in words the translation represented by a vector. • Draw the image of a figure for the given rotation from a point. • Find the angle of rotation.
Standards/Benchmarks	**G.C.1, G.C.2, G.CO.4, G.C.5, G.GPE.1, G.GPE.2**	**G.CO.3, G.CO.3, G.CO.4, G.CO.5, G.CO.6, G.SRT.1**
Assessments/Resources	• Weekly Quizzes • Unit Tests • Textbook and Workbook Assignments	• Weekly Quizzes • Unit Tests • Textbook and Workbook Assignments

Differentiation/Accommodations/Modifications

Gifted and Talented	English Language Learners	Students with Disabilities	Students at Risk of Failure
(content, process, product and learning environment) **Extension Activities** Conduct research and provide presentation of cultural topics. Design surveys to generate and analyze data to be used in discussion. Debate topics of interest / cultural importance. Authentic listening and reading sources that provide data and support for speaking and writing prompts. Exploration of art and/or artists to understand society and history. **Anchor Activities**	**Modifications for Classroom** Assign a peer helper in the class setting Use Smartphone as dictionary Use Dictionary Use materials in native language, if available **Modifications for Homework/Assignments** Modified Assignments Native Language Translation (peer, online assistive technology, translation device, bilingual dictionary) Extended time for assignment completion as needed Highlight key vocabulary	***(appropriate accommodations, instructional adaptations, and/or modifications as determined by the IEP or 504 team)*** **Modifications for Classroom** Pair visual prompts with verbal presentations Ask students to restate information, directions, and assignments. Repetition and and practice Model skills / techniques to be mastered. Extended time to complete class work Provide copy of class notes	**Modifications for Classroom** Pair visual prompts with verbal presentations Ask students to restate information, directions, and assignments. Repetition and and practice Model skills / techniques to be mastered. Extended time to complete class work Provide copy of classnotes Preferential seating to be mutually determined by the student and teacher

Use of Higher Level Questioning Techniques Provide assessments at a higher level of thinking	Use graphic organizers **Modifications for Assessments** Extended time on classroom tests and quizzes. Student may take/complete tests in an alternate setting as needed. Restate, reread, and clarify directions/questions Use dictionary or approved electronic device	Preferential seating to be mutually determined by the student and teacher Student may request to use a computer to complete assignments. Establish expectations for correct spelling on assignments. Extra textbooks for home. Student may request books on tape / CD / digital media, as available and appropriate. Assign a peer helper in the class setting Provide oral reminders and check student work during independent work time Assist student with long and short term planning of assignments Encourage student to proofread assignments and tests	Student may request to use a computer to complete assignments. Establish expectations for correct spelling on assignments. Extra textbooks for home. Student may request books on tape / CD / digital media, as available and appropriate. Assign a peer helper in the class setting Provide oral reminders and check student work during independent work time Assist student with long and short term planning of assignments Encourage student to proofread assignments and tests

		Provide regular parent/ school communication Teachers will check/sign student agenda daily Student requires use of other assistive technology device **Modifications for Homework and Assignments** Extended time to complete assignments. Student requires more complex assignments to be broken up and explained in smaller units, with work to be submitted in phases. Provide the student with clearly stated (written) expectations and grading criteria for assignments.	Provide regular parent/ school communication Teachers will check/sign student agenda daily Student requires use of other assistive technology device **Modifications for Homework and Assignments** Extended time to complete assignments. Student requires more complex assignments to be broken up and explained in smaller units, with work to be submitted in phases. Provide the student with clearly stated (written) expectations and grading criteria for assignments.

		Modifications for Assessments Extended time on classroom tests and quizzes. Student may take/complete tests in an alternate setting as needed. Restate, reread, and clarify directions/questions Distribute study guide for classroom tests. Establish procedures for accommodations / modifications for assessments	Implement RAFT activities as they pertain to the types / modes of communication (role, audience, format, and topic). **Modifications for Assessments** Extended time on classroom tests and quizzes. Student may take/complete tests in an alternate setting as needed. Restate, reread, and clarify directions/questions Distribute study guide for classroom tests. Establish procedures for accommodations / modifications for assessments.