



SUBJECT: MATHEMATICS HIGH SCHOOL

Cliffside Park Public Schools

GRADE: 10

BOE APPROVAL: August 2018

Cliffside Park Public Schools

COURSE OF STUDY UNIT PLANNING GUIDE FOR: GEOMETRY UNIT 2

Grade Level:
10th

Cliffside Park School District
Cliffside Park, NJ 07010
www.cliffsidepark.edu



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Course Overview:

The study of High School geometry involves the study of Euclidean geometry. Students study congruence in terms of rigid motions. Experiment with transformations of shapes in the plane. Prove geometric theorems and make geometric conjectures. Students are required to understand similarity in terms of transformations. Prove theorems involving similarity. Define trigonometric ratios and solve problems using right triangles. They then use this understanding to apply trigonometry to general triangles.

Study continues with circles and the understanding and application of theorems about circles. Students explore arc lengths and areas of sectors. The course continues with translations between geometric descriptions and questions of conic sections. Coordinates are used to prove simple geometric theorems algebraically. Volume formulas are explored and explained. Two-dimensional and three-dimensional visualizations are explored. All geometric concepts are used to model situations and real-life events.

Overview of Units:

- 1. Congruence and Constructions**
- 2. Congruence, Similarity & Proof**
- 3. Trigonometric Ratios & Geometric Equations**
- 4. Spatial Reasoning: Polygons, Solids, Area and Volume**



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Mathematics: Geometry

Unit 1 Geometry

Unit Name: Congruence and Constructions

Primary Resource: Big Ideas Geometry Common Core Edition 2015 and Associated Online Resources;

Duration: Approximately 11 weeks

WEEK 1

Essential Question: How can you use dynamic geometry software to visualize geometric concepts? How can you measure and construct a line segment? How can you find the midpoint and length of a line segment in a coordinate plane?

NJSL Standards	Concepts <i>What student will know.</i>	Skills <i>What students will be able to do.</i>	Activities	Assessments and Checks for Understanding
<p>G.CO.A.1 Know precise definitions of angle, circle, perpendicular line, parallel lines, and line segment, based on the undefined notions of point, line, distance along a line, and distance around a circular arc.</p> <p>G.CO.D.12 Make formal geometric constructions with a variety of tools and methods (compass and straightedge, string,</p>	<p>Lesson Vocabulary:</p> <p>Points, lines, planes, line segments, rays, intersection, collinear points, coplanar points, endpoints, opposite rays, postulate, axiom, coordinate, distance, between, congruent segments,</p>	<ul style="list-style-type: none"> Use and apply vocabulary terms in context. Name points, lines, and planes Name segments and rays Sketch intersections of lines and planes Solve real-life problems involving lines and planes Construct segment and compare 	<ul style="list-style-type: none"> Exploration 1: Using Dynamic Geometry Software, p 3 Exploration 2: Intersections of Lines and Planes p 3 Exploration 2: Finding the Length of a Line Segment, p 19 Discuss vocabulary Core Concept: Undefined Terms: Point, Line and Plane p. 4, 5 Core Concept: Defined Terms: Segment and Ray p. 5 Core Concept: Copying A Segment p. 13 	<p>Formative:</p> <p>Analyzing Student classwork Strategic Questioning Thumbs up Think-pair -Share Monitoring Progress questions 3-7 p. 5 Monitoring Progress questions 5-7, 9 p. 13 Monitoring Progress questions 3-6, 9 p. 21 Exit Slips Do Nows Leveled Homework p. 8, 16, 24 Quizzes</p>



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<p>reflective devices, paper folding, dynamic geometric software, etc.). <i>Copying a segment; copying an angle; bisecting a segment; bisecting an angle; constructing perpendicular lines, including the perpendicular bisector of a line segment; and constructing a line parallel to a given line through a point not on the line.</i></p> <p>G.GPE.B.7 Use coordinates to compute perimeters of polygons and areas of triangles and rectangles, e.g., using the distance formula.</p> <p>G.SRT.8 Use trigonometric ratios and the Pythagorean Theorem to solve right triangles in applied problems.</p> <p>G.MG.A.3 Apply geometric methods to solve design problems (e.g., designing an object or structure to</p>	<p>midpoint, segment bisector</p> <p>Learning Goals:</p> <ol style="list-style-type: none"> 1. Write names for points, lines, planes, segments, and rays. 2. Find the distance of a line segment. 3. Use the midpoint and distance formula. 	<p>segments for congruence.</p> <ul style="list-style-type: none"> • Use the Segment Addition Postulate • Find segment lengths using midpoints and segment bisectors • Use the Midpoint Formula • Use the Distance Formula 	<ul style="list-style-type: none"> • Core Concept: Midpoints and Segment Bisectors p. 20 • Constructions: Bisecting a Segment p. 21 • Core Concept: The Midpoint Formula; The Distance Formula pp. 22, 25 • Postulates 1.1, 1.2 pp. 12, 14 • Use word problems to illustrate real life examples of finding the distance across state lines 	<p>I used to think but now I know Dynamic classroom with investigations</p> <p>Summative:</p> <p>Topic Tests Projects</p> <p>Benchmark Tests:</p> <p>Approximately every 5-6 weeks.</p> <p>Alternative:</p> <p>Verbally ask students to explain the characteristics needed to name lines, planes, rays, etc.</p> <p>Allow students to use a ruler to find the measure of a line segment.</p> <p>Verbally ask students to explain what the midpoint and distance formula represent.</p> <p>Use patty paper to demonstrate midpoint and segment bisector</p>
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<p>satisfy physical constraints or minimize cost; working with typographic grid systems based on ratios).</p> <p>MP.1 Make sense of problems and persevere in solving them.</p> <p>MP.2 Reason abstractly and quantitatively.</p> <p>MP.3 Construct viable arguments & critique the reasoning of others.</p> <p>MP.4 Model with mathematics.</p> <p>MP.5 Use appropriate tools strategically.</p> <p>MP.6 Attend to precision.</p> <p>MP.7 Look for and make use of structure.</p> <p>MP.8 Look for and express regularity in repeated reasoning.</p>				
<p>Possible Resources:</p>				



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[Desmos](#)
[GeoGebra](#)
[IXL](#)
[Khan Academy](#)

Illustrative Mathematics: [G.GPE.B.7 Triangle Perimeters](#), [G.SRT.C.8 Constructing Special Angles](#), [G.MG.A.3 Ice Cream Cone](#)

WEEK 2

Essential Question: How can you measure and classify an angle? How can you describe angle pair relationships and use these descriptions to find angle measures? How can you find the perimeter and area of a polygon in a coordinate plane?

NJSL Standards	Concepts <i>What student will know.</i>	Skills <i>What students will be able to do.</i>	Activities	Assessments and Checks for Understanding
<p>G.GPE.B.7 Use coordinates to compute perimeters of polygons and areas of triangles and rectangles, e.g., using the distance formula.</p> <p>G.GMD.A.3 Use volume formula for cylinders, pyramids, cones, and spheres to solve problems.</p> <p>G.CO.A.1 Know precise definitions of angle, circle, perpendicular</p>	<p>Lesson Vocabulary:</p> <p>Angle, vertex, sides of an angle, interior of an angle, exterior of an angle, measure of an angle, acute angle, obtuse angle, right angle, straight angle, congruent angles, angle bisector, polygon, side, vertex, n-gon, convex, concave</p>	<ul style="list-style-type: none"> ● Use and apply vocabulary terms in context. ● Name, measure, and classify angles ● Identify congruent angles ● Use the Angle Addition Postulate to find angle measures ● Bisect angles ● Classify Polygons ● Find perimeter and areas of polygons in the coordinate plane 	<ul style="list-style-type: none"> ● Exploration 1: Measuring and Classifying Angles, p 37 ● Exploration 2: Finding Angle Measures p 47 ● Exploration 2: Finding the Area of a Polygon, p 29 ● Exploration 1: Measuring and Classifying Angles p. 37 ● Exploration 2: Drawing a regular polygon p. 37 ● Core Concept: <ul style="list-style-type: none"> ○ Polygons p. 30 ○ Types of Angles p. 39 ○ Postulate 1.4 Angle Addition Postulate ● Use word problems to illustrate real life examples 	<p>Formative:</p> <p>Analyzing Student classwork Strategic Questioning Monitoring Progress questions 3,5,8,9 p. 39 Monitoring Progress questions 2, 3, 5, 7, 9 p. 30 Think-Pair-Share Exit Slips Do Nows Graphic Organizers Homework Quizzes</p> <p>Summative:</p>



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<p>line, parallel lines, and line segment, based on the undefined notions of point, line, distance along a line, and distance around a circular arc.</p> <p>G.CO.D.12 Make formal geometric constructions with a variety of tools and methods (compass and straightedge, string, reflective devices, paper folding, dynamic geometric software, etc.). <i>Copying a segment; copying an angle; bisecting a segment; bisecting an angle; constructing perpendicular lines, including the perpendicular bisector of a line segment; and constructing a line parallel to a given line through a point not on the line.</i></p> <p>MP.1 Make sense of problems and persevere in solving them.</p>	<p>Learning Goals:</p> <ol style="list-style-type: none"> 1. Use the Angle Addition Postulate to find the measure of an angle 2. Find the area and perimeter of a polygon (using Pythagorean theorem for a right triangle) 		<p>finding perimeter to build a fence or measure of supplementary angles formed from a soccer goal post and the ground.</p>	<p>Topic Tests Projects</p> <p>Benchmark Assessments: Every 5-6 weeks.</p> <p>Alternative:</p> <ul style="list-style-type: none"> • Students can explain in their own words convex vs concave • Students can demonstrate understanding of Angle Addition postulate by explaining concept.
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<p>MP.2 Reason abstractly and quantitatively.</p> <p>MP.3 Construct viable arguments & critique the reasoning of others.</p> <p>MP.4 Model with mathematics.</p> <p>MP.5 Use appropriate tools strategically.</p> <p>MP.6 Attend to precision.</p> <p>MP.7 Look for and make use of structure.</p> <p>MP.8 Look for and express regularity in repeated reasoning.</p>				
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Possible Resources:
[Desmos](#)
[GeoGebra](#)
[IXL](#)
[Khan Academy](#)

Illustrative Mathematics: [G.GMD.A.3 The Great Egyptian Pyramids.](#) [G.CO.D.12 Bisecting an angle.](#) [G.CO.D.12 Angle bisectors and midpoints of line segments](#)

WEEK 3
Essential Question: How can you describe angle pair relationships and use these descriptions to find angle measures?



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NJSL Standards	Concepts <i>What student will know.</i>	Skills <i>What students will be able to do.</i>	Activities	Assessments and Checks for Understanding
<p>G.GPE.B.7 Use coordinates to compute perimeters of polygons and areas of triangles and rectangles, e.g., using the distance formula.</p> <p>G.GMD.A.3 Use volume formula for cylinders, pyramids, cones, and spheres to solve problems.</p> <p>G.CO.A.1 Know precise definitions of angle, circle, perpendicular line, parallel lines, and line segment, based on the undefined notions of point, line, distance along a line, and distance around a circular arc.</p> <p>G.CO.D.12 Make formal geometric constructions with a variety of tools and methods (compass and straightedge, string, reflective devices, paper folding, dynamic geometric software,</p>	<p>Lesson Vocabulary:</p> <p>complementary angles, supplementary angles, adjacent angles, linear pair, vertical angles</p> <p>Learning Goals:</p> <ol style="list-style-type: none"> 1. Use the Angle Addition Postulate to find the measure of an angle 2. Find the area and perimeter of a polygon (using Pythagorean theorem for a right triangle) 	<ul style="list-style-type: none"> • Use and apply vocabulary terms in context. • Identify complementary and supplementary angles • Identify linear pairs and vertical angles • Find the measures of angles • Identify angle pairs • 	<ul style="list-style-type: none"> • Exploration 1: Exploration 2: Finding Angle Measures p 47 • Exploration 2: Drawing a regular polygon p. 37 • Core Concept: <ul style="list-style-type: none"> ○ Complementary and Supplementary Angles p. 48 ○ Linear pairs and Vertical Angles p. 50 • Constructions: <ul style="list-style-type: none"> ○ Copying an Angle p. 40 ○ Bisecting an Angle p. 42 • Interpreting a Diagram p. 51 • Use word problems to illustrate real life examples finding perimeter to build a fence or measure of supplementary angles formed from a soccer goal post and the ground. 	<p>Formative:</p> <p>Analyzing Student classwork Strategic Questioning Monitoring Progress questions 2-5, p. 49 Think-Pair-Share Exit Slips Do Nows Graphic Organizers Homework Quizzes</p> <p>Summative:</p> <p>Topic Tests Projects</p> <p>Benchmark Assessments: Every 5-6 weeks.</p> <p>Alternative:</p> <ul style="list-style-type: none"> • Students can explain in their own words convex vs concave • Students can sketch the difference between supplementary angles, complementary angles, linear pairs, and vertical angles.



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<p>etc.). <i>Copying a segment; copying an angle; bisecting a segment; bisecting an angle; constructing perpendicular lines, including the perpendicular bisector of a line segment; and constructing a line parallel to a given line through a point not on the line.</i></p> <p>MP.1 Make sense of problems and persevere in solving them.</p> <p>MP.2 Reason abstractly and quantitatively.</p> <p>MP.3 Construct viable arguments & critique the reasoning of others.</p> <p>MP.4 Model with mathematics.</p> <p>MP.5 Use appropriate tools strategically.</p> <p>MP.6 Attend to precision.</p> <p>MP.7 Look for and make use of structure.</p> <p>MP.8 Look for and express regularity in repeated reasoning.</p>				
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<p>Possible Resources: Desmos GeoGebra IXL Khan Academy</p>				
<p>WEEK 4 Essential Question: 2.3, 2.4, 2.5</p>				
NJSLS Standards	Concepts <i>What student will know.</i>	Skills <i>What students will be able to do.</i>	Activities	Assessments and Checks for Understanding
<p>G.CO.C.9 Prove theorems about lines and angles. Theorems include: vertical angles are congruent; when a transversal crosses parallel lines, alternate interior angles are congruent and corresponding angles are congruent; points on a perpendicular bisector of a line segment are exactly</p>	<p>Lesson Vocabulary: line perpendicular to a plane, Equations, solve an equation, formula, proof, two column proof, theorem, parallel line, Learning Goals:</p>	<ul style="list-style-type: none"> Use and apply vocabulary terms in context. Use inductive and deductive reasoning Identify postulates using diagrams Make and Test conjecture Sketch and interpret diagrams Write two column proofs 	<ul style="list-style-type: none"> Exploration 2: Interpreting a Diagram p 83 Postulates: Point, Line and Plane p. 84 Use word problems to illustrate real life examples to find the percent of a raise received at a part time job, given an hourly wage increase. Exploration 1: Justifying Steps in a Solution, p 91 Explorations 2: Stating Algebraic Properties p. 91 Core Concept: 	<p>Formative: Analyzing Student classwork Strategic Questioning Monitoring Progress questions p. 76 Monitoring Progress questions p. 85-86 Think-Pair-Share Exit Slips Do Nows Graphic Organizers Homework Quizzes</p>



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<p>those equidistant from the segment's endpoints.</p> <p>G.CO.C.10 Prove theorems about triangles. Theorems include: measures of interior angles of a triangle sum to 180°; base angles of isosceles triangles are congruent; the segment joining midpoints of two sides of a triangle is parallel to the third side and half the length; the medians of a triangle meet at a point.</p> <p>G.CO.C.11 Prove theorems about parallelograms. Theorems include: opposite sides are congruent, opposite angles are congruent, the diagonals of a parallelogram bisect each other, and conversely, rectangles are parallelograms with congruent diagonals.</p>	<ol style="list-style-type: none"> 1. Identify postulates using diagrams 2. Sketch and interpret Diagrams 3. Write proofs on the learned theorems. 4. Identify the different types of angles formed on parallel lines cut by a transversal. 	<ul style="list-style-type: none"> Name and prove properties of congruence Identify lines and planes Identify parallel and perpendicular lines Identify pairs of angles formed by a transversal Use properties of parallel lines Prove theorems about parallel lines Solve real life problems 	<ul style="list-style-type: none"> Algebraic Properties of Equality p. 92 Distributive Property p. 93 Reflexive, Symmetric and Transitive Properties of Equality p. 94 Exploration 1: Writing Reasons in a Proof, p 99 Exploration 2: Writing Steps in a proof p. 99 Theorem 2.1 Properties of Segment congruence Theorem 2.2 Properties of Angle Congruence p. 101 Concept Summary: writing a 2 column proof p 102 Use word problems to illustrate real life examples to investigate the angles created by a beam of light on a flat reflective surface. 	<p>Summative:</p> <p>Topic Tests Projects</p> <p>Benchmark Assessments: Every 5-6 weeks.</p> <p>Alternative:</p> <ul style="list-style-type: none"> Students can explain in their own words inductive vs deductive reasoning Students can discuss the difference between postulates 2.1 and 2.2; 2.4 and 2.5; 2.6 Students can explain in their own words Theorems 3.1 -3.4 and how they are connected to the different types of angles. Students can use a paragraph proof instead of a 2-column proof.
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<p>G.SRT.B.4 Prove theorems about triangles. Theorems include: a line parallel to one side of a triangle divides the other two proportionally, and conversely; the Pythagorean Theorem proved using triangle similarity</p> <p>MP.1 Make sense of problems and persevere in solving them.</p> <p>MP.2 Reason abstractly and quantitatively.</p> <p>MP.3 Construct viable arguments & critique the reasoning of others.</p> <p>MP.4 Model with mathematics.</p> <p>MP.5 Use appropriate tools strategically.</p> <p>MP.6 Attend to precision.</p> <p>MP.7 Look for and make use of structure.</p> <p>MP.8 Look for and express regularity in repeated reasoning.</p>				
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Possible Resources:

[Desmos](#)
[GeoGebra](#)
[IXL](#)
[Khan Academy](#)

WEEK 5
Essential Question(s): What does it mean when two lines are parallel, intersecting, coincident, skew? When two parallel lines are cut by a transversal, which of the resulting pairs of angles are congruent? How can you write an equation of a line that is parallel or perpendicular to a given line and passes through a given point?
 3.1, 3.2 3.5

NJSLS Standards	Concepts <i>What student will know.</i>	Skills <i>What students will be able to do.</i>	Activities	Assessments and Checks for Understanding
<p>G.CO.A.1 Know precise definitions of angle, circle, perpendicular line, parallel line, and line segment, based on the undefined notions of point, line, distance along a line, and distance around a circular arc.</p> <p>G.CO.C.9 Prove theorems about lines and angles. Theorems</p>	<p>Lesson Vocabulary:</p> <p>Parallel lines, skew lines, parallel planes, transversal, corresponding angles, alternate interior angles, alternate exterior angles, consecutive interior angles, corresponding</p>	<ul style="list-style-type: none"> Use and apply vocabulary terms in context. Identify lines and planes. Identify lines that are parallel or perpendicular Name specific angle pairs. Use properties of parallel lines to 	<ul style="list-style-type: none"> Finding the slope of a line. p. 123 Characteristics of lines in a coordinate plane p. 124 Exploration 1: Points of Intersections p. 125 Exploration 2: Classifying Pairs of Lines p 125 Discuss vocabulary Core Concept: <ul style="list-style-type: none"> Parallel lines, skew lines and Parallel planes p. 126, Angles formed by a 	<p>Formative:</p> <p>Analyzing Student classwork Strategic Questioning Monitoring Progress questions 1-3 p. 101 Monitoring Progress questions 1, 3-5 p. 126 Monitoring Progress questions 1, 4 p. 133 Think-Pair-Share Exit Slips Do Nows Graphic Organizers</p>



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<p>include: vertical angles are congruent; when a transversal crosses parallel lines, alternate interior angles are congruent and corresponding angles are congruent; points on a perpendicular bisector of a line segment are exactly those equidistant from the segment's endpoints.</p> <p>G.GPE.B.5 Prove the slope criteria for parallel and perpendicular lines and use them to solve geometric problems (e.g., find the equation of a line parallel or perpendicular to a given line that passes through a given point).</p> <p>G.GPE.B.6 Find the point on a directed line segment between two given points that</p>	<p>angles, parallel lines, supplementary angles, vertical angles, Directed line segment</p> <p>Learning Goals:</p> <ol style="list-style-type: none"> 1. Identify lines and planes 2. Identify parallel and perpendicular lines 3. Identify pairs of angles formed by transversals. 4. Use properties of parallel lines 5. Prove theorems about parallel lines 6. Use slope to partition directed line segments. 7. Identify parallel and perpendicular lines. 	<p>identify and find angle measures.</p> <ul style="list-style-type: none"> • Solve real-life problems • Partition a directed line segment • Writing equations of parallel or perpendicular lines • Finding the distance from a point to a line. • Partition a directed line segment • Writing equations of parallel or perpendicular lines • Finding the distance from a point to a line. 	<p>Transversal p. 128</p> <ul style="list-style-type: none"> • Postulates: Parallel and Perpendicular p. 127 • Exploration 1: Exploring parallel lines p. 131 • Exploration 2: Writing Conjectures, p 131 • Theorems <ul style="list-style-type: none"> ○ (Using properties of parallel lines) p. 132 • Use word problems to illustrate real life • Exploration 1 and 2: Writing Equations of Parallel and Perpendicular lines p. 155 • Theorems <ul style="list-style-type: none"> • Slopes of parallel lines; Slopes of perpendicular lines p. 157 • Write equations of parallel and perpendicular lines. 	<p>Homework Quizzes</p> <p>Summative:</p> <p>Topic Tests Projects</p> <p>Benchmark Assessments: Every 5-6 weeks.</p> <p>Alternative:</p> <ul style="list-style-type: none"> • Students can explain in their own words Theorems 3.1 -3.4 and how they are connected to the different types of angles. • Students can sketch the difference between parallel lines and planes • Students can create a similarities and difference chart to compare parallel and perpendicular lines. • Students can use dynamic graphing software to demonstrate understanding of concepts.
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<p>partitions the segment in a given ratio.</p> <p>MP.1 Make sense of problems and persevere in solving them.</p> <p>MP.2 Reason abstractly and quantitatively.</p> <p>MP.3 Construct viable arguments & critique the reasoning of others.</p> <p>MP.4 Model with mathematics.</p> <p>MP.5 Use appropriate tools strategically.</p> <p>MP.6 Attend to precision.</p> <p>MP.7 Look for and make use of structure.</p> <p>MP.8 Look for and express regularity in repeated reasoning.</p>	<p>8. Write equations of parallel and perpendicular lines.</p> <p>9. Use slope to find the distance from a point to a line.</p>			
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Additional Resources:

[Desmos](#)

[GeoGebra](#)

[IXL](#)

[Khan Academy](#)



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WEEK 6				
Essential Question: For which of the theorems involving parallel lines and transversals is the converse true? What conjectures can you make about perpendicular lines? 3.3, 3.4,				
NJSLS Standards	Concepts <i>What student will know.</i>	Skills <i>What students will be able to do.</i>	Activities	Assessments and Checks for Understanding
<p>G.CO.C.9 Prove theorems about lines and angles. Theorems include: vertical angles are congruent; when a transversal crosses parallel lines, alternate interior angles are congruent and corresponding angles are congruent; points on a perpendicular bisector of a line segment are exactly those equidistant from the segment's endpoints.</p> <p>G.CO.D.12 Make formal geometric</p>	<p>Lesson Vocabulary:</p> <p>Converse, parallel lines, transversal, corresponding angles, alternate interior angles, alternate exterior angles, consecutive interior angles, Distance from a point to a line, perpendicular bisector</p> <p>Learning Goals:</p>	<ul style="list-style-type: none"> • Use and apply vocabulary terms in context. • Solve problems using the corresponding angle theorem. • Use a compass and straightedge to construct parallel lines. • Prove theorems about parallel lines • Use the theorems to solve problems and explain reasoning. • Find the distance from a point to a line. 	<ul style="list-style-type: none"> • Exploration 1: Exploring converses p. 137 • Core Concept p. 126, 128 • Theorems p. 101, 132 • Theorems: <ul style="list-style-type: none"> ○ 3.5 Corr. Angle Converse p. 138 ○ 3.6 Alt. Int. Angles Converse ○ 3.7 Alt Ext Angle Converse ○ 3.8 Consecutive Int Angle Converse p. 139 ○ 3.9 Transitive Prop of Parallel Lines • Constructing Parallel Lines • Proving theorems about parallel lines • Use word problems to illustrate real life examples like building stairs or examining street maps. 	<p>Formative:</p> <p>Analyzing Student classwork Strategic Questioning Monitoring Progress questions pp. 140-141, 148-150 Think-Pair-Share Exit Slips Do Nows Graphic Organizers Leveled Homework Quizzes</p> <p>Summative:</p> <p>Topic Tests Projects</p> <p>Benchmark Assessments: Every 5-6 weeks.</p>



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<p>constructions with a variety of tools and methods (compass and straightedge, string, reflective devices, paper folding, dynamic geometric software, etc.). Copying a segment; copying an angle; bisecting a segment; bisecting an angle; constructing perpendicular lines, including the perpendicular bisector of a line segment; and constructing a line parallel to a given line through a point not on the line.</p> <p>MP.1 Make sense of problems and persevere in solving them. MP.2 Reason abstractly and quantitatively. MP.3 Construct viable arguments & critique the reasoning of others. MP.4 Model with mathematics. MP.5 Use appropriate tools strategically.</p>	<ol style="list-style-type: none"> 1. To use the Corresponding Angle Converse Theorem 2. To construct parallel lines. 3. To Prove theorems about parallel lines. 4. To use the Transitive Property of Parallel Lines. 5. To find the distance from a point to a line. 6. To construct perpendicular lines. 7. To prove theorems about perpendicular lines. 	<ul style="list-style-type: none"> • Construct a perpendicular line p. 149 • Construct a perpendicular bisector p. 149 	<ul style="list-style-type: none"> • Exploration 1, 3: Writing Conjectures p. 147 • Exploration 2: Exploring a segment bisector p. 147 • Constructions p. 149 • Theorems p. 150: • 3.10 Linear Pair Perpendicular Thm. • 3.11 Perpendicular Transversal Thm. • 3.12 Lines Perpendicular to a transversal Thm • • • Use word problems to illustrate real life examples to find the parallel lines on neighborhood maps. 	<p>Alternative:</p> <ul style="list-style-type: none"> • Students can relate converse theorems to ones already learned. • Projects • Written assessments • Verbal tests
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<p>MP.6 Attend to precision. MP.7 Look for and make use of structure. MP.8 Look for and express regularity in repeated reasoning.</p>				
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<p>Additional Resources: Desmos GeoGebra IXL Khan Academy</p>				
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Benchmark

<p>WEEK 7 Essential Question: How are the angle measures of a triangle related? Given two triangles, how can you use rigid motion to map one triangle on the other triangle? 5.1, 5.2</p>				
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NJSLS Standards	Concepts <i>What student will know.</i>	Skills <i>What students will be able to do.</i>	Activities	Assessments and Checks for Understanding
<p>G.CO.C.10 Prove theorems about triangles. Theorems include: measures of</p>	<p>Lesson Vocabulary:</p>	<ul style="list-style-type: none"> Use and apply vocabulary terms in context. 	<ul style="list-style-type: none"> Exploration 1 and 2: Writing a Conjecture p. 231 Core Concept: classifying triangles by sides and angles 	<p>Formative: Analyzing Student classwork Strategic Questioning</p>



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<p>interior angles of a triangle sum to 180°; base angles of isosceles triangles are congruent; the segment joining midpoints of two sides of a triangle is parallel to the third side and half the length; the medians of a triangle meet at a point.</p> <p>G.MG.A.1 Use geometric shapes, their measures, and their properties to describe objects (e.g., modeling a tree trunk or a human torso as a cylinder).★</p> <p>G.CO.B.7 Use the definition of congruence in terms of rigid motions to show that two triangles are congruent if and only if corresponding pairs of sides and corresponding pairs of angles are congruent.</p> <p>MP.1 Make sense of problems and persevere in solving them.</p> <p>MP.2 Reason abstractly</p>	<p>Interior angle, exterior angle, corollary to a theorem, corresponding parts</p> <p>Learning Goals:</p> <ol style="list-style-type: none"> 1. Classify triangles by sides and angles 2. Find interior and exterior angle measures of triangles. 3. Identify and use corresponding parts 4. Use the Third Angles Theorem 	<ul style="list-style-type: none"> • Classify triangles by side lengths and types of angles they contain. • Use the coordinate plane to classify triangles • Find angle measures of a triangle • Identify corresponding parts • Use properties of congruent figures • Use thms to prove relationships in triangles 	<ul style="list-style-type: none"> • Theorem: <ul style="list-style-type: none"> ○ 5.1 Triangle sum Thm ○ 5.2 Exterior Angle Thm ○ Corollary 5.1 Corollary to Triangle sum Thm p. 235 ○ 5.3 Properties of triangle congruence p. 241 ○ 5.4 Third Angle Thm p. 242 • Exploration 1 Describing rigid motion p. 239 • Exploration 2 Finding a composition of rigid motion p. 239 • Identify corresponding parts • Use properties of congruence in proofs. • Use properties of congruence to solve problems. 	<p>Monitoring Progress questions Think-Pair-Share Exit Slips Do Nows Graphic Organizers Leveled Homework Quizzes</p> <p>Summative:</p> <p>Topic Tests Projects</p> <p>Benchmark Assessments: Every 5-6 weeks.</p> <p>Alternative:</p> <ul style="list-style-type: none"> • Students can explain how to use patty paper to prove given theorems. • Students can explain errors or correct errors in statements and diagrams.
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<p>and quantitatively. MP.3 Construct viable arguments & critique the reasoning of others. MP.4 Model with mathematics. MP.5 Use appropriate tools strategically. MP.6 Attend to precision. MP.7 Look for and make use of structure. MP.8 Look for and express regularity in repeated reasoning.</p>				
<p>Possible Resources:</p> <p>Desmos GeoGebra IXL Khan Academy</p>				
<p>WEEK 8 Essential Question: What can you conclude about two triangles when you know that a pair of corresponding sides and corresponding included angles are congruent. What conjectures can you make about the side lengths and angle measures of an isosceles triangle? 5.3 5.4</p>				
<p>NJSLS Standards</p>	<p>Concepts <i>What student will know.</i></p>	<p>Skills <i>What students will be able to do.</i></p>	<p>Activities</p>	<p>Assessments and Checks for Understanding</p>



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<p>G.CO.B.8 Explain how the criteria for triangle congruence (ASA, SAS, and SSS) follow from the definition of congruence in terms of rigid motions.</p> <p>G.MG.A.1 Use geometric shapes, their measures, and their properties to describe objects (e.g., modeling a tree trunk or a human torso as a cylinder).★</p> <p>G.CO.C.10 Prove theorems about triangles. Theorems include: measures of interior angles of a triangle sum to 180°; base angles of isosceles triangles are congruent; the segment joining midpoints of two sides of a triangle is parallel to the third side and half the length; the medians of a triangle meet at a point.</p> <p>G.CO.D.13 Construct an equilateral triangle, a square, and a regular hexagon inscribed in a circle.</p>	<p>Lesson Vocabulary:</p> <p>Congruent figures, rigid motion, legs, vertex angle, base, base angle</p> <p>Learning Goals:</p> <ol style="list-style-type: none"> To use the Side-Angle-Side (SAS) Thm To solve real-life problems To use Base angle Thm To Use isosceles and equilateral triangles 	<ul style="list-style-type: none"> Use and apply vocabulary terms in context. Use SAS Thm to prove triangles congruent Use Base Angles Thm, the converse to the Base Angles Thm, and corollaries in proofs Find the measures in a triangle using these thms. Construct an equilateral triangle 	<ul style="list-style-type: none"> Exploration 1 Drawing triangles p. 245 Theorem: <ul style="list-style-type: none"> 5.5 Side-Angle Side (SAS) Thm p. 246 5.6 Base Angles Thm p. 252 5.7 Converse of the Base Angles thm Corollary 5,2 Corollary to the Base Angles Thm Cor. 5.3 Cor to the Converse of the base angles thm p. 253 To construct a triangle using SAS Exploration 1 Writing a conjecture about Isosceles triangles p. 251 Construction: Constructing equilateral triangle, P. 254 Solve a multi-step problem 	<p>Formative:</p> <p>Analyzing Student classwork Strategic Questioning Monitoring Progress questions sections 5.3, 5.4 Think-Pair-Share Exit Slips Do Nows Graphic Organizers Homework Quizzes</p> <p>Summative:</p> <p>Topic Tests Projects</p> <p>Benchmark Assessments: Every 5-6 weeks.</p> <p>Alternative:</p> <ul style="list-style-type: none"> Students can explain errors or correct errors in statements and diagrams. Student can construct proofs using Desmos or GeoGebra Students can explain how to construct an equilateral triangle.
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<p>MP.1 Make sense of problems and persevere in solving them.</p> <p>MP.2 Reason abstractly and quantitatively.</p> <p>MP.3 Construct viable arguments & critique the reasoning of others.</p> <p>MP.4 Model with mathematics.</p> <p>MP.5 Use appropriate tools strategically.</p> <p>MP.6 Attend to precision.</p> <p>MP.7 Look for and make use of structure.</p> <p>MP.8 Look for and express regularity in repeated reasoning.</p>				
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Possible Resources:

[Desmos](#)

[GeoGebra](#)

[IXL](#)

[Khan Academy](#)



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WEEK 9 Essential Question: What can you conclude about two triangles when you know that corresponding sides are congruent? What information is sufficient to determine whether two triangles are congruent? How can you use congruent triangles to make an indirect measurement? 5.5 5.6 5.7				
NJSLS Standards	Concepts <i>What student will know.</i>	Skills <i>What students will be able to do.</i>	Activities	Assessments and Checks for Understanding
<p>G.CO.B.8 Explain how the criteria for triangle congruence (ASA, SAS, and SSS) follow from the definition of congruence in terms of rigid motions.</p> <p>G.MG.A.1 Use geometric shapes, their measures, and their properties to describe objects (e.g., modeling a tree trunk or a human torso as a cylinder).★</p> <p>G.MG.A.3 Apply geometric methods to solve design problems (e.g., designing an object or structure to satisfy physical constraints or minimize cost; working with typographic grid systems based on ratios).★</p>	<p>Lesson Vocabulary:</p> <p>Legs, hypotenuse, congruent figures, rigid motion, congruent figures, corresponding parts, construction</p> <p>Learning Goals:</p> <ol style="list-style-type: none"> To use the Side-Side-Side (SSS) Thm To Construct a triangle using SSS To use HL Thm To use Angle-Side-Angle (ASA) Thm To use the Angle-Angle-Side (AAS) Thm 	<ul style="list-style-type: none"> Use and apply vocabulary terms in context. Use SSS, HL, ASA, AAS Thms to prove triangles congruent To construct a triangle using SSS p. 264; using ASA p. 272 Find the measures in a triangle using these thms. Construct an equilateral triangle To identify congruent triangles 	<ul style="list-style-type: none"> Exploration 1 Drawing triangles p. 261 Theorem: <ul style="list-style-type: none"> 5.8 Side-Side-Side (SSS) Thm p. 262 5.9 Hypotenuse-Leg (HL) Thm p. 264 5.10 Angle-Side-Angle (ASA) Thm p. 270 5.11 Angle-Angle-Side (AAS) Thm p. 271 To construct a triangle using SSS Using HL Exploration 1 Determining if SSA is sufficient Exploration 2 Determining Valid congruence thms p. 269 	<p>Formative:</p> <p>Analyzing Student classwork Strategic Questioning Monitoring Progress questions sections 5.5, 5.6, 5.7 Think-Pair-Share Exit Slips Do Nows Graphic Organizers Homework Quizzes</p> <p>Summative:</p> <p>Topic Tests Projects</p> <p>Benchmark Assessments: Every 5-6 weeks.</p> <p>Alternative:</p> <ul style="list-style-type: none"> Students can explain errors or correct errors in statements and diagrams.



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<p>G.CO.B.8. Explain how the criteria for triangle congruence (ASA, SAS, and SSS) follow from the definition of congruence in terms of rigid motions.</p> <p>G.SRT.B.5 Use congruence and similarity criteria for triangles to solve problems and to prove relationships in geometric figures.</p> <p>MP.1 Make sense of problems and persevere in solving them.</p> <p>MP.2 Reason abstractly and quantitatively.</p> <p>MP.3 Construct viable arguments & critique the reasoning of others.</p> <p>MP.4 Model with mathematics.</p> <p>MP.5 Use appropriate tools strategically.</p> <p>MP.6 Attend to precision.</p>	<p>5. To use congruent triangles</p> <p>6. To prove constructions</p>	<ul style="list-style-type: none"> • To use triangle congruence theorems in proofs • To use congruent triangles to answer questions and justify answers • To prove a construction 	<ul style="list-style-type: none"> • Exploration 1,2: Measuring the width of a river p. 277 • Proving a Construction p. 280 	<ul style="list-style-type: none"> • Student can construct proofs using Desmos or GeoGebra • Students can explain how to construct an equilateral triangle.
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<p>MP.7 Look for and make use of structure. MP.8 Look for and express regularity in repeated reasoning.</p>				
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<p>Possible Resources:</p> <p>Desmos GeoGebra IXL Khan Academy</p>				
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<p>WEEK 10 Essential Question: How can you use a coordinate plane to write a proof? 5.8</p>				
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<p>NJSLS Standards</p>	<p>Concepts <i>What student will know.</i></p>	<p>Skills <i>What students will be able to do.</i></p>	<p>Activities</p>	<p>Assessments and Checks for Understanding</p>
<p>G.GPE.B.4 Use coordinates to prove simple geometric theorems algebraically. <i>For example, prove or disprove that a figure defined by four given points in the coordinate plane is a rectangle; prove or</i></p>	<p>Lesson Vocabulary: Coordinate Proof</p> <p>Learning Goals:</p> <ol style="list-style-type: none"> Place figures in a coordinate plane Write a coordinate proof 	<ul style="list-style-type: none"> Place a figure in a coordinate plane Write a plan for a coordinate proof Apply variable coordinates Write coordinate proofs 	<ul style="list-style-type: none"> Exploration 1,2 Write a coordinate proof p. 283 	<p>Formative:</p> <p>Analyzing Student classwork Strategic Questioning Monitoring Progress questions sections 5.8 Think-Pair-Share Exit Slips Do Nows Graphic Organizers Leveled Homework</p>



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<p><i>disprove that the point $(1, \sqrt{3})$ lies on the circle centered at the origin and containing the point $(0, 2)$.</i></p> <p>MP.1 Make sense of problems and persevere in solving them.</p> <p>MP.2 Reason abstractly and quantitatively.</p> <p>MP.3 Construct viable arguments & critique the reasoning of others.</p> <p>MP.4 Model with mathematics.</p> <p>MP.5 Use appropriate tools strategically.</p> <p>MP.6 Attend to precision.</p> <p>MP.7 Look for and make use of structure.</p> <p>MP.8 Look for and express regularity in repeated reasoning.</p>				<p>Quizzes</p> <p>Summative:</p> <p>Topic Tests Projects</p> <p>Benchmark Assessments: Every 5-6 weeks.</p> <p>Alternative:</p> <ul style="list-style-type: none"> • Students can explain errors or correct errors in statements and diagrams. • Student can use numbers instead of variables in their coordinate proof • Students can use manipulatives in constructing their proofs • Create a logo p. 289
<p>Modifications For ELL/IEPs/504s/At-Risk Learners:</p> <p>Resources by Chapter:</p> <ul style="list-style-type: none"> • Practice A and Practice B 		<p>Modifications for Gifted And Talented</p> <p>Advanced questioning Enrichment and Extension</p>		



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<ul style="list-style-type: none"> ● Puzzle Time <p>Student Journal: Practice Differentiating the Lesson:</p> <ul style="list-style-type: none"> ● Skills review Handbook <p>IXL</p>	<p>Cumulative Review Start the Next Section</p>
<p>Possible Resources:</p> <p>Desmos GeoGebra IXL Khan Academy</p>	
<p>Interdisciplinary Connections:</p>	
<p>NJSLS-ELA</p> <p>RST.11-12.3 Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text.</p> <p>RST.11-12.4 Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 11-12 texts and topics.</p> <p>RST.11-12.9 Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible.</p> <p>RST.11-12.10 By the end of grade 12, read and comprehend science/technical texts in the grades 11-CCR text complexity band independently and proficiently.</p> <p>W.11-12.1 Write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence.</p> <p>W.11-12.2.D Use precise language, domain-specific vocabulary, and techniques such as metaphor, simile, and analogy to manage the complexity of the topic.</p> <p>NJSLS-S: Physics</p>	



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HS-PS3-2 Energy Develop and use models to illustrate that energy at the macroscopic scale can be accounted for as a combination of energy associated with the motions of particles (objects) and energy associated with the relative positions of particles (objects)

HS-PS3-5.5 Develop and use a model of two objects interacting through electric or magnetic fields to illustrate the forces between objects and the changes in energy of the objects due to the interaction

HS-PS2-4 : Forces and Motions Use mathematical representations of Newton's Law of Gravitation and Coulomb's Law to describe and predict the gravitational and electrostatic forces between objects

NGSS Practices:

Analyzing and Interpreting Data: Analyze data using tools, technologies, and/or models (e.g., computational, mathematical) in order to make valid and reliable scientific claims or determine an optimal design solution.

Developing and Using Models: Develop or use a model based on evidence to illustrate the relationships between systems or between components of a system.

Engaging in Argument from Evidence: Make and defend a claim based on evidence about the natural world that reflects scientific knowledge, and student-generated evidence.

NJSLS- Biology

HS-LS3 Heredity: Inheritance and Variation of Traits

HS-LS3-2. Make and defend a claim based on evidence that inheritable genetic variations may result from (1) new genetic combinations through meiosis, (2) viable errors occurring during replication, and/or (3) mutations caused by environmental factors.

NJSLS-Technology:

Students will use Desmos, GeoGebra or the TI-84 calculator to assist in graphing and analyzing these equations. They will discuss their findings with the instructor and their classmates. Students will participate in activities on Google Classroom and other online resources, Desmos, GeoGebra, IXL

8.1.12.A.3 Collaborate in online courses, learning communities, social networks or virtual worlds to discuss a resolution to a problem or issue.

8.1.12.A.4 Construct a spreadsheet workbook with multiple worksheets, rename tabs to reflect the data on the worksheet, and use mathematical or logical functions, charts and data from all the worksheets to convey the results.

Career Ready Practices:



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- CRP2. Apply appropriate academic and technical skills.
- CRP4. Communicate clearly and effectively and with reason
- CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.
- CRP11. Use technology to enhance productivity

21st Century Life and Career:

- 9.1.12.B.6 Design and utilize a simulated budget to monitor progress of financial needs.
- 9.1.12.C.2 Compare and compute interest and compound interest and develop an amortization table using business tools.
- 9.1.12.C.3 Compute and assess the accumulating effect of interest paid over time when using a variety of sources of credit.

Possible Resources:

- [Desmos](#)
- [GeoGebra](#)
- [IXL](#)
- [Khan Academy](#)

WEEK 11: Chapter review/ Chapter assessment

Integrated Differentiation/Accommodations/Modifications for Geometry Unit 1
(Alternate Modes of Instruction and Support)

Modifications to Support Gifted and Talented Students	Modifications to Support English Language Learners	Modifications to Support Our Learners (Students with IEPs/504s and At-Risk Learners)
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<p>See specific modifications in each lesson.</p> <p>Integrate Higher Order Thinking Skills (HOTS) through questioning and extension projects specific to linear equations, inequalities and functions</p> <p>Provide menu of challenge activities for when the child finishes the lesson early (integrate technology when possible).</p> <p>College/Career Readiness skill enhancement - G & T students can research professions related to the Algebra.</p> <p>Have the student teach the lesson - peer tutoring (research-based strategy) Accelerate pace for students who are advanced in concepts.</p> <p>Use inquiry-based, discovery learning approaches that emphasize open-ended problems with multiple solutions or multiple paths to solutions.</p> <p>Allow students to design their own ways to find the answers to complex questions.</p> <p>Advanced questioning Enrichment and Extension Cumulative Review Start the Next Section</p>	<p>See specific modifications in each lesson.</p> <p>Concept/Idea Map - teacher models note-taking on maintaining vocabulary sections with diagrams, constructions, measuring and constructing angles, theorems and postulates</p> <p>Contextualize language See each lesson for specific vocabulary</p> <p>Visuals and illustrations to be used for constructions, proofs, solving problems related to angle pairs, angles created by parallel lines and a transversal, line segments, parallel lines and perpendicular lines and other concrete terms.</p> <p>Word/picture bank available for students' reference in classroom, online and in their textbooks.</p> <p>Wait Time Two - extend basic "Wait Time" - after the 1st student responds to a question, the teacher waits an additional 5 - 7 seconds before calling on another student to ask a question about unit 3.</p> <p>Native Language Supports (peer, online assistive technology, translation device, bilingual dictionary)</p>	<p>See specific modifications in each lesson.</p> <p>Review student individual educational plan and/or 504 plan for instructional, assessment, and environmental supports.</p> <p>Allow student to use calculator to solve <enter text here>.</p> <p>Utilize manipulatives and/or visuals within instructional presentation of constructions, proofs and vocabulary</p> <p>Teach students how to check the accuracy of the solution that was derived from use of the calculator or other method.</p> <p>Provide templates to aid in aligning of two-column proofs. Provide templates to help students create organized notes.</p> <p>Utilize graphic organizer or partially completed template for students to solve word problems and other complex problems in the unit.</p> <p>Provide study guides that are partially completed by teacher, allowing the student to fill in missing information during instruction in order to aid in obtaining information pertaining to modeling word problems and proofs.</p> <p>Utilize visual aids such as charts or graphs connected to solving visual problems, word problems and proofs; and provide explicit instruction in how to analyze or use the appropriate strategies.</p>
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	<p>Teach the text backward - frontload the concepts and vocabulary needed for learning the material and activating prior knowledge vocabulary, see specific lesson for vocabulary list.</p> <p>Use a word square to teach target academic vocabulary for this unit.</p> <p>Resources by Chapter: Practice A and Practice B Puzzle Time Student Journal: Practice Differentiating the Lesson: Skills review Handbook</p> <p>IXL</p>	<p>By utilizing individual student assessment results, the teacher will provide small group or remedial instruction to review essential questions/big ideas, key concepts and provide additional explanations, more examples, and to model procedures in finding the solutions to particular problems.</p> <p>Provide wait time to allow students to process orally presented information and questions relating to the unit.</p> <p>Access to word/picture banks to develop an understanding and use content-specific vocabulary.</p> <p>Allow for Student Choice: Students should be permitted to demonstrate understanding of content through illustrations, computer projects, oral response, creative presentations or demonstration, etc.</p> <p>Support comprehension of unknown vocabulary, by providing examples of Note-taking, highlighting, underlining, etc.</p> <p>Students should be allowed given copies of grade level material or text so they can highlight or underline pertinent information.</p> <p>Text to speech/Oral reading if necessary</p> <p>Provide students with flexible seating options while working independently, depending on need or preference.</p>
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		<p>Math-specific vocabulary and literary terms should be pre-taught before teaching relevant concepts.</p> <p>Allow extra time to complete in class written assignments.</p> <p>Provide students with a sample problem or list of steps or procedures for multi-step solutions to problems. Allow student to reference these procedures when solving independently.</p> <p>Reduce the number of assigned problems within a unit.</p> <p>Provide models or templates to teach the structure of how to solve problems systematically.</p> <p>If necessary, provide additional set of materials or online access so that students can utilize resources at school and home.</p> <p>Provide study guide for students to review before Unit quizzes or tests.</p> <p>Review essential questions/big ideas of constructions, proofs, solving problems related to angle pairs, angles created by parallel lines and a transversal, line segments, parallel lines and perpendicular lines to provide additional explanations, more examples, and to model procedures in finding the solutions to particular problems.</p>
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		<p>Access to word/picture banks to develop an understanding and use content-specific vocabulary, such as those listed in each lesson.</p> <p>Allow for Student Choice: Students should be permitted to demonstrate understanding of content through illustrations, computer projects, oral response, creative presentations or demonstration, etc.</p> <p>Support comprehension of unknown vocabulary, by providing examples of Note-taking, highlighting, underlining, etc.</p> <p>Students should be allowed given copies of grade level material or text so they can highlight or underline pertinent information.</p> <p>Provide students with flexible seating options while working independently, depending on need or preference.</p> <p>Math-specific vocabulary and literary terms should be pre-taught before teaching relevant concepts.</p> <p>Allow extra time to complete in class written assignments.</p> <p>Provide students with a sample problem or list of steps or procedures for multi-step solutions to problems. Allow student to reference these procedures when solving independently.</p>
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		<p>Reduce the number of assigned problems within the unit.</p> <p>Provide models or templates to teach the structure of how to solve problems systematically.</p> <p>Modify tests to address big ideas/essential questions of the unit.</p>
<p>Sources: New Jersey Student Learning Standards (2016)- Math https://www.state.nj.us/education/cccs/2016/math/standards.pdf New Jersey Student Learning Standards (2016) -ELA https://www.state.nj.us/education/cccs/2016/ela/g1112.pdf New Jersey Student Learning Standards (2016)- Science https://www.state.nj.us/education/cccs/2016/science/ New Jersey Student Learning Standards: Technology (2014) http://www.state.nj.us/education/cccs/2014/tech/8.pdf Career Ready Practices (2014) http://www.state.nj.us/education/cccs/2014/career/CareerReadyPractices.pdf</p>		