Wallenpaupack Area School District
Planned Course Curriculum Guide

Department:
Mathematics

Name of Course:
Geometry CCR

Course Description:

Geometry CCR is a course recommended for the college-bound student. It places emphasis on proof, the need for clarity and precision, and geometric visualization. A unit on formulas for plane and solid figures is included.

Initial Creation Date (if applicable) and Revision Dates:
Initial Creation Date:
Revision Date: 2006
Revision Date: October, 2025

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Wallenpaupack Area School District Curriculum	
COURSE: Geometry CCR	**GRADE/S: 9, 10, 11**
UNIT 1: Tools of Geometry	**TIMEFRAME: 19 days**

PA COMMON CORE/NATIONAL STANDARDS:

G.2.1.1.1 Use the Pythagorean Theorem or trigonometric ratios to write and/or solve problems involving right triangles.
G.2.1.2.1 Calculate the distance and/or midpoint between 2 points on a number line or on a coordinate plane.
G.2.1.2.3 Use slope, distance and/or midpoint between 2 points on a coordinate plane to establish properties of a 2-dimensional shape.
G.2.2.1.1 Use properties of angles formed by intersecting lines to find the measures of missing angles.
G.2.2.2.1 Estimate area, perimeter or circumference of an irregular figure.
G.2.2.2.2 Find the measurement of a missing length given the perimeter, circumference, or area.
G.2.2.2.3 Find the side lengths of a polygon with a given perimeter to maximize the area of the polygon.
G.2.2.2.4 Develop and/or use strategies to estimate the area of a compound/composite figure.

UNIT OBJECTIVES (SWBATS):

Student will be able to:

- Develop and implement critical thinking skills using inductive reasoning.
- Analyze patterns to form a conjecture.
- Comprehend and implement new geometric terms.
- Understand basic postulates of geometry.
- Identify segments and rays.
- Recognize parallel lines.
- Calculate the lengths of segments on a number line and coordinate plane.
- Find the measures of angles.
- Use a compass and straightedge to construct congruent segments and angles.
- Calculate the midpoint of a segment in the coordinate plane.
- Find the perimeter of rectangles and squares, and circumferences of circles.
- Calculate the area of rectangles, squares and circles.

INSTRUCTIONAL STRATEGIES/ACTIVITIES:

- Direct instruction with guided examples
- Discovery learning
- Textbook problem solving
- Partner and group work
- Interactive board work with class discussions

ASSESSMENTS (Diagnostic/Benchmark/Formative/Summative):

- Class participation
- Classwork and homework
- Group work
- Partner activities
- Quizzes and tests
- Projects
- Teacher Observation

DIFFERENTIATED INSTRUCTION (Acceleration/Enrichment):

- Math lab opportunities
- Peer tutoring
- Small group reteaching/instruction
- Utilize the gifted resource room

*will vary based on IEP/GIEP goals

RESOURCES (Technology Based Resources, Text Resources, etc.):

- Geometry Common Core Textbook
- Online assessment programs
- Interactive whiteboard or projector
- Graphing Calculator

KEY VOCABULARY:

- Patterns and Inductive Reasoning
- Points, Lines, and Planes
- Segments, Rays, Parallel Lines, and Planes
- Angle Bisector
- Construction
- Perpendicular Bisector
- Supplementary Angles
- Vertical Angles
- The Coordinate Plane
- Perimeter, Circumference, and Area

Wallenpaupack Area School District Curriculum	
COURSE: Geometry CCR	**GRADE/S: 9, 10, 11**
UNIT 2: Parallel and Perpendicular Lines	**TIMEFRAME: 18 days**

PA COMMON CORE/NATIONAL STANDARDS:

G.2.1.2.2 Relate slope to perpendicularity and/or parallelism.
G.2.2.1.1 Use properties of angles formed by intersecting lines to find the measures of missing angles.
G.2.2.1.2 Use properties of angles formed when two parallel lines are cut by a transversal to find the measures of missing angles.

UNIT OBJECTIVES (SWBATS):
Students will be able to:

- Develop and implement critical thinking skills.
- Comprehend and implement new geometric terms.
- Identify angles formed by two lines and a transversal.
- Solve algebraic problems that use properties of parallel lines.
- Use a transversal in proving lines parallel.
- Relate parallel and perpendicular lines.
- Compare slopes of parallel and perpendicular lines.
- Write an equation of a line parallel/ perpendicular to another line through a given point.
- Determine the solution(s) of systems of linear equations.

INSTRUCTIONAL STRATEGIES/ACTIVITIES:

- Direct instruction with guided examples
- Discovery learning
- Textbook problem solving
- Partner and group work
- Interactive board work with class discussions
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ASSESSMENTS (Diagnostic/Benchmark/Formative/Summative):

- Class participation
- Classwork and homework
- Group work
- Partner activities
- Quizzes and tests
- Projects
- Teacher Observation

DIFFERENTIATED INSTRUCTION (Acceleration/Enrichment):

- Math lab opportunities
- Peer tutoring
- Small group reteaching/instruction
- Utilize the gifted resource room

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RESOURCES (Technology Based Resources, Text Resources, etc.):

- Geometry Common Core Textbook
- Online assessment programs
- Interactive whiteboard or projector
- Graphing Calculator

KEY VOCABULARY:

- Adjacent angles
- Alternate exterior angles
- Alternate interior angles
- Corresponding angles
- Exterior angle of a polygon
- Parallel lines
- Perpendicular lines
- Same side exterior angles
- Same side interior angles
- Skew lines
- Transversal

Wallenpaupack Area School District Curriculum	
COURSE: Geometry CCR	**GRADE/S: 9, 10, 11**
UNIT 3: Congruent Triangles	**TIMEFRAME: 8 days**

PA COMMON CORE/NATIONAL STANDARDS:

G.1.3.1.1 Identify and/or use properties of congruent and similar polygons or solids.
G.1.2.1.3 Identify and/or use properties of isosceles and equilateral triangles.

UNIT OBJECTIVES (SWBATS):

Students will be able to:

- Classify triangles by sides and angles.
- Find the measure of the angles of a triangle.
- Use the Exterior Angle Theorem to solve for angles in a triangle.
- Recognize congruent figures and their corresponding parts.
- Show/prove triangles are congruent by SSS, SAS, AAS, ASA, or HL.
- Use triangle congruence and CPCTC to prove that parts of two triangles are congruent.
- Apply properties of isosceles and equilateral triangles to solve angles or sides of a triangle.

INSTRUCTIONAL STRATEGIES/ACTIVITIES:

- Direct instruction with guided examples
- Discovery learning
- Textbook problem solving
- Partner and group work
- Interactive board work with class discussions

ASSESSMENTS (Diagnostic/Benchmark/Formative/Summative):

- Class participation
- Classwork and homework
- Group work
- Partner activities
- Quizzes and tests
- Projects
- Teacher Observation

DIFFERENTIATED INSTRUCTION (Acceleration/Enrichment):

- Math lab opportunities
- Peer tutoring
- Small group reteaching/instruction
- Utilize the gifted resource room

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RESOURCES (Technology Based Resources, Text Resources, etc.):

- Geometry Common Core Textbook
- Online assessment programs
- Interactive whiteboard or projector
- Graphing Calculator

KEY VOCABULARY:

- Base angles of an isosceles triangle
- Base of an isosceles triangle
- Congruent Figures
- Corollary
- Equilateral triangle
- Hypotenuse
- Isosceles triangle
- Legs of an isosceles triangle
- Parallel lines and the Triangle Sum Theorem
- Triangle Congruence by SSS and SAS
- Triangle Congruence by ASA and AAS
- Using congruent triangles: CPCTC
- Vertex angle of an isosceles triangle

Wallenpaupack Area School District Curriculum	
COURSE: Geometry CCR	**GRADE/S: 9, 10, 11**
UNIT 4: Relationships within Triangles	**TIMEFRAME: 8 days**

PA COMMON CORE/NATIONAL STANDARDS:

G.1.3.2.1 Write, analyze, complete, or identify formal proofs (e.g., direct and/or indirect proofs/proofs by contradiction).
G.2.1.2.2 Relate slope to perpendicularity and/or parallelism.
G.2.1.2.3 Use slope, distance and/or midpoint between 2 points on a coordinate plane to establish properties of a 2-dimensional shape.

UNIT OBJECTIVES (SWBATS):
Students will be able to:

- Use properties of midsegments to solve problems.
- Use and identify properties of perpendicular bisectors to solve geometric problems.
- Use indirect reasoning to solve geometric problems.
- Use inequalities involving angles of triangles.
- Use inequalities involving sides of triangles.

INSTRUCTIONAL STRATEGIES/ACTIVITIES:

- Direct instruction with guided examples
- Discovery learning
- Textbook problem solving
- Partner and group work
- Interactive board work with class discussions

ASSESSMENTS (Diagnostic/Benchmark/Formative/Summative):

- Class participation
- Classwork and homework
- Group work
- Partner activities
- Quizzes and tests
- Projects
- Teacher Observation

DIFFERENTIATED INSTRUCTION (Acceleration/Enrichment):

- Math lab opportunities
- Peer tutoring
- Small group reteaching/instruction
- Utilize the gifted resource room

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RESOURCES (Technology Based Resources, Text Resources, etc.):

- Geometry Common Core Textbook
- Online assessment programs
- Interactive whiteboard or projector
- Graphing Calculator

KEY VOCABULARY:

- Bisectors of triangles
- Equidistant
- Inequalities in triangles
- Midsegment of a triangle

Wallenpaupack Area School District Curriculum	
COURSE: Geometry CCR	**GRADE/S: 9, 10, 11**
UNIT 5: Similarity	**TIMEFRAME: 13 days**

PA COMMON CORE/NATIONAL STANDARDS:

G.1.2.1.1 Identify and/or use properties of triangles.
G.1.2.1.3 Identify and/or use properties of isosceles and equilateral triangles.
G.1.3.1.1 Identify and/or use properties of congruent and similar polygons or solids.
G.1.3.1.2 Identify and/or use proportional relationships in similar figures.

UNIT OBJECTIVES (SWBATS):

Students will be able to:

- Develop and implement critical thinking skills.
- Comprehend and implement new geometric terms.
- Write ratios and solve proportions.
- Identify and apply similar polygons.
- Use AA, SAS, and SSS similarity statements.
- Apply AA, SAS, and SSS similarity statements to show triangles are similar.
- Use the Side-Splitter Theorem.
- Use the Triangle-Angle-Bisector Theorem.
- Find the perimeters and areas of similar figures.

INSTRUCTIONAL STRATEGIES/ACTIVITIES:

- Direct instruction with guided examples
- Discovery learning
- Textbook problem solving
- Partner and group work
- Interactive board work with class discussions

ASSESSMENTS (Diagnostic/Benchmark/Formative/Summative):

- Class participation
- Classwork and homework
- Group work
- Partner activities
- Quizzes and tests
- Projects
- Teacher Observation

DIFFERENTIATED INSTRUCTION (Acceleration/Enrichment):

- Math lab opportunities
- Peer tutoring
- Small group reteaching/instruction
- Utilize the gifted resource room

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RESOURCES (Technology Based Resources, Text Resources, etc.):

- Geometry Common Core Textbook
- Online assessment programs
- Interactive whiteboard or projector
- Graphing Calculator

KEY VOCABULARY:

- Perimeter and area of similar figures
- Proportion
- Proportions in triangles
- Proving similar triangles
- Ratio
- Scale drawing
- Scale factor
- Similar
- Similar polygons

Wallenpaupack Area School District Curriculum	
COURSE: Geometry CCR	**GRADE/S: 9, 10, 11**
UNIT 6: Polygons and Quadrilaterals	**TIMEFRAME: 18 days**

PA COMMON CORE/NATIONAL STANDARDS:

G.1.2.1.1 Identify and/or use properties of triangles.
G.1.2.1.2 Identify and/or use properties of quadrilaterals.
G.1.2.1.3 Identify and/or use properties of isosceles and equilateral triangles.
G.1.2.1.4 Identify and/or use properties of regular polygons.
G.2.2.1.1 Use properties of angles formed by intersecting lines to find the measures of missing angles.
G.2.2.1.2 Use properties of angles formed when two parallel lines are cut by a transversal to find the measures of missing angles.

UNIT OBJECTIVES (SWBATS):

- Students will be able to:
- Develop and implement critical thinking skills.
- Classify polygons.
- Define and classify special types of polygons.
- Apply relationships among sides and angles of parallelograms.
- Use relationships involving diagonals of parallelograms or transversals.
- Determine given coordinates and what type of quadrilateral the figure is.
- Prove that a quadrilateral is a parallelogram.
- Identify and apply properties of rhombuses, rectangles, squares, kites and trapezoids.

INSTRUCTIONAL STRATEGIES/ACTIVITIES:

- Direct instruction with guided examples
- Discovery learning
- Textbook problem solving
- Partner and group work
- Interactive board work with class discussions

ASSESSMENTS (Diagnostic/Benchmark/Formative/Summative):

- Class participation
- Classwork and homework
- Group work
- Partner activities
- Quizzes and tests
- Projects
- Teacher Observation

DIFFERENTIATED INSTRUCTION (Acceleration/Enrichment):

- Math lab opportunities
- Peer tutoring
- Small group reteaching/instruction
- Utilize the gifted resource room

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RESOURCES (Technology Based Resources, Text Resources, etc.):

- Geometry Common Core Textbook
- Online assessment programs
- Interactive whiteboard or projector
- Graphing Calculator

KEY VOCABULARY:

- Classification of quadrilaterals
- Isosceles trapezoid
- Kite
- Midsegment of a trapezoid
- Parallelogram
- Rectangle
- Rhombus
- Square
- Trapezoid

Wallenpaupack Area School District Curriculum	
COURSE: Geometry CCR	**GRADE/S: 9, 10, 11**
UNIT 7: Right Triangles and Trigonometry	**TIMEFRAME: 6 days**

PA COMMON CORE/NATIONAL STANDARDS:

G.1.2.1.1 Identify and/or use properties of triangles.
G.2.1.1.1 Use the Pythagorean Theorem or trigonometric ratios to write and/or solve problems involving right triangles.
G.2.1.1.2 Use trigonometric ratios to write and/or solve problems involving right triangles.

UNIT OBJECTIVES (SWBATS):

- The students will be able to:
- Develop and implement critical thinking skills.
- Comprehend and implement new geometric terms.
- Use Pythagorean Theorem to solve sides of a right triangle.
- Use the Converse of the Pythagorean Theorem to determine if a triangle is acute, obtuse or right.
- Use the properties of 45°-45°-90° triangles to solve the lengths of the sides of a right triangle.
- Use the properties of 30°-60°-90° triangles to solve the lengths of the sides of a right triangle.
- Use tangent ratios to determine side lengths in triangles.
- Use sine and cosine ratios to determine side lengths in triangles.
- Apply sine, cosine and tangent ratios to calculate the measure of the acute angles of a triangle.

INSTRUCTIONAL STRATEGIES/ACTIVITIES:

- Direct instruction with guided examples
- Discovery learning
- Textbook problem solving
- Partner and group work
- Interactive board work with class discussions

ASSESSMENTS (Diagnostic/Benchmark/Formative/Summative):

- Class participation
- Classwork and homework
- Group work
- Partner activities
- Quizzes and tests
- Projects
- Teacher Observation

DIFFERENTIATED INSTRUCTION (Acceleration/Enrichment):

- Math lab opportunities
- Peer tutoring
- Small group reteaching/instruction
- Utilize the gifted resource room

*will vary based on IEP/GIEP goals

RESOURCES (Technology Based Resources, Text Resources, etc.):

- Geometry Common Core Textbook
- Online assessment programs
- Interactive whiteboard or projector
- Graphing Calculator

KEY VOCABULARY:

- Cosine
- Pythagorean triple
- Sine
- Tangent