

Math Planned Course: College Prep Geometry – Grade 10

Unit: **Basics of Geometry**

Content Standard: **Identify, label, and construct basic geometric figures.**

State Curriculum Standards:

2.1.11A Use Operations

2.3.11A Select and use appropriate units and tools to measure to the degree of accuracy required in particular measurement situations.

2.3.11C Demonstrate the ability to produce measures with specified levels of precision.

2.5.11A Select and use appropriate mathematical concepts and techniques from different areas of mathematics and apply them to solving non-routine and multi-step problems.

2.5.11B Use symbols, mathematical terminology, standard notation, mathematical rules, and other types of mathematical representations to communicate observations, predictions, concepts, procedures, generalizations, ideas, and results.

2.5.11C Present mathematical procedures and results clearly, systematically, succinctly, and correctly.

2.2.11B Use estimation to solve problems for which an exact answer is not needed

2.9.8B Draw, label, measure and list the properties of complementary and supplementary, and vertical angles.

ISTE Standard:

5 Digital Citizenship

PSSA Anchors:

M11.A.1.1 Represent and/or use numbers in equivalent form

M11.A.2.1.1 Solve problems using operations with rational numbers

M11.A.2.2.1 Simplify expressions involving absolute value

M11.A.3.2.1 Using estimation to solve problems

M11.B.2.1.1 Measure and/or compare angles in degrees

M11.C.3.1.1 Find the distance and/or midpoint between 2 points on a number line or on a coordinate plane

Pacing Guide: **20 – 25 days Full year, 10 – 13 days Block**

Math Planned Course: College Prep Geometry – Grade 10

Course Content	Student Performance	Resources	Assessments
<p>A. Basic Geometric Figures</p> <ul style="list-style-type: none"> Point – 1.3 Line – 1.3 Plane – 1.3 Line segment – 1.4 Ray – 1.4 Angle – 1.6 <p>B. Types of Angles</p> <ul style="list-style-type: none"> Acute – 1.6 Right – 1.6 Obtuse – 1.6 Straight – 1.6 Angle bisector – 1.7 Adjacent – 1.6 Vertical – 1.6 Complementary – 1.6 Supplementary – 1.6 <p>C. Geometric Symbols</p> <p>D. Midpoint – 1.8</p> <p>E. Distance Formula – 1.8</p> <p>**Spiral Review</p> <ul style="list-style-type: none"> Simplify square roots Integer operations Fraction operations 	<ul style="list-style-type: none"> Define and draw the basic geometric figures Write the meaning of various geometric symbols Calculate the length of various segments and midpoints Construct various geometric figures using a straight edge and protractor Compare and contrast complementary and supplementary angles Calculate the complement or supplement of an angle Classify angles using characteristics Estimate the measure of an angle as acute, right, obtuse, or straight Verify angle measures with a protractor Solve real world problems involving geometric figures 	<ul style="list-style-type: none"> <u>Geometry</u>– Prentice Hall, 2007 Chapter 1 Geometry teacher’s activity kit Straightedge Protractor Calculators CPS Supplemental resources Geometry Software, i.e. “Geometer’s Sketchpad” Coach books – Grade 10 Measuring Up – Level H and Final Level Spiral review and project binder Bell ringers Study Island PSSA Coach Grade 10 Measuring Up Appendix 	<ul style="list-style-type: none"> Teacher made quizzes Teacher made tests Notebooks Textbook problems/worksheets Student projects Teacher observations Common midterm exam Common final exam <p><u>Problem Solving Strategies</u></p> <ul style="list-style-type: none"> Eliminate wrong answers Consider a simpler case Show and explain Drawing diagrams Using formulas Guess and check <p><u>Remediation</u></p> <ul style="list-style-type: none"> Supplemental worksheets Peer tutoring After school tutoring <p><u>Enrichment</u></p> <ul style="list-style-type: none"> Supplemental worksheets Internet activities

Math Planned Course: College Prep Geometry – Grade 10

Unit: **Parallel and Perpendicular Lines**

Content Standard: **Identify, measure, and use types of lines and angles to solve problems.**

State Curriculum Standards:

2.1.11A Use Operations

2.2.11B Use estimation to solve problems for which an exact answer is not needed

2.2.11E Recognize that the degree of precision needed in calculating a number depends on how the results will be used and the instruments used to generate the measure.

2.3.11A Select and use appropriate units and tools to measure to the degree of accuracy required in particular measurement situations

2.3.11C Demonstrate the ability to produce measures with specified levels of precision.

2.5.11A Select and use appropriate mathematical concepts and techniques from different areas of mathematics and apply them to solving non-routine and multi-step problems.

2.5.11B Use symbols, mathematical terminology, standard notation, mathematical rules, and other types of mathematical representations to communicate observations, predictions, concepts, procedures, generalizations, ideas, and results.

2.5.11C Present mathematical procedures and results clearly, systematically, succinctly, and correctly.

2.9.8B Draw, label, measure and list the properties of complementary and supplementary, and vertical angles.

2.9.8E Draw parallel lines and a transversal, measure and compare angles formed.

ISTE Standards:

6 Technology Operations and Concepts

PSSA Anchors:

M11.A.1.1 Represent and/or use fractions as decimals and percents

M11.A.2.1.1 Solve problems using operations with rational numbers

M11.B.2.1.1 Measure and/or compare angles in degrees

M11.C.3.1.2 Relate slope to perpendicularity and/or parallelism

Pacing Guide: **6 – 10 days Full year, 3 – 5 days Block**

Math Planned Course: College Prep Geometry – Grade 10

Course Content	Student Performance	Resources	Assessments
<p>A. Types of lines</p> <ul style="list-style-type: none"> Parallel – 1.4 Perpendicular – 1.7 Intersecting – 1.6 Skew – 1.4 <p>B. Special Pairs of Angles – 3.1</p> <ul style="list-style-type: none"> Alternate Interior Alternate Exterior Corresponding Same Side Interior <p>C. Parallel & Perpendicular Lines – slopes and equations – 3.6, 3.7</p> <p>**Spiral Review</p> <ul style="list-style-type: none"> Slope Slope-intercept form of a line Fraction operations 	<ul style="list-style-type: none"> Draw various types of lines Explain the relationship between the angles formed by parallel lines and a transversal List pairs of special angles from a diagram Measure angles to verify special angle theorems Prove lines are parallel using the converse of angle theorems Apply theorems to real life application problems 	<ul style="list-style-type: none"> <u>Geometry</u>– Prentice Hall, 2007 Chapters 1, 3 Geometry teacher's activity kit Straightedge Protractor Calculators CPS Supplemental resources Geometry Software, i.e. "Geometer's Sketchpad" Coach books – Grade 10 Measuring Up – Level H and Final Level Spiral review and project binder Bell ringers Study Island PSSA Coach Grade 10 Measuring Up Appendix 	<ul style="list-style-type: none"> Teacher made quizzes Teacher made tests Notebooks Textbook problems/Worksheets Student projects Teacher observations Common midterm exam Common final exam <p><u>Problem Solving Strategies</u></p> <ul style="list-style-type: none"> Eliminate wrong answers Consider a simpler case Show and explain Make a table or chart Use formulas <p><u>Remediation</u></p> <ul style="list-style-type: none"> Supplemental worksheets Peer tutoring After school tutoring <p><u>Enrichment</u></p> <ul style="list-style-type: none"> Supplemental worksheets Internet activities

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Unit: **Triangles**

Content Standard: **Prove triangles congruent or similar using relationships between corresponding sides and angles.**

State Curriculum Standards:

2.1.11A Use Operations

2.2.11B Use estimation to solve problems for which an exact answer is not needed

2.4.11B Construct valid arguments from stated facts

2.5.11B Use symbols, mathematical terminology, standard notation, mathematical rules, and other types of mathematical representations to communicate observations, predictions, concepts, procedures, generalizations, ideas, and results.

2.5.11C Present mathematical procedures and results clearly, systematically, succinctly, and correctly.

2.9.11B Prove that two triangles or two polygons are congruent or similar using algebraic and deductive proofs.

2.9.11D Identify corresponding parts of congruent triangles to solve problems

2.9.11I Model situations geometrically to formulate and solve problems

ISTE Standards:

1 Creativity and Innovation

2 Communication and Collaboration

4 Critical Thinking, Problem Solving, and Decision Making

6 Technology Operations and Concepts

PSSA Anchors:

M11.A.1.1 Represent and/or use fractions as decimals and percents

M11.A.2.1.1 Solve problems using operations with rational numbers

M11.A.2.1.3 Identify and/or use proportional relationships in problem solving settings

M11.B.2.1.1 Measure and/or compare angles in degrees

M11.C.1.2.1 Identify and/or use properties of triangles

M11.C.1.2.3 Identify and/or use properties of isosceles and equilateral triangles

M11.C.1.3.1 Recognize and/or use properties of congruent and similar polygons

Pacing Guide: **25 – 30 days Full year, 12 – 15 days Block**

Math Planned Course: College Prep Geometry – Grade 10

Course Content	Student Performance	Resources	Assessments
<p>A. Types of Triangles</p> <ul style="list-style-type: none"> • By sides – 3.4 • By angles – 3.4 <p>B. Properties of Triangles</p> <ul style="list-style-type: none"> • Interior angles – 3.4 • Exterior angles – 3.4 • Isosceles – 4.5 • Equilateral – 4.5 <p>C. Special Segments of Triangles</p> <ul style="list-style-type: none"> • Median – 5.3 • Altitude – 5.3 • Angle bisector – 5.2 • Mid-segment – 5-1 <p>D. Congruence Theorems</p> <ul style="list-style-type: none"> • SSS, SAS, AAS, ASA, HL – 4.2, 4.3, 4.6 <p>E. CPCTC – 4.4</p> <p>F. Triangle Inequalities – 5.5</p> <p>**Spiral Review</p> <ul style="list-style-type: none"> • Solving proportions • Properties of algebra – 2.4 • Properties of congruence – 2.4 • Properties of equality – 2.4 	<ul style="list-style-type: none"> • Classify the various types of triangles • Define and construct medians, altitudes, bisectors, and mid-segments • Label congruent parts of triangles with tick marks • Prove parts of triangles congruent using CPCTC • Solve proportions • Using triangle inequalities to classify triangles 	<ul style="list-style-type: none"> • <u>Geometry</u>– Prentice Hall, 2007 Chapters 2, 3, 4, 5 • Geometry teacher's activity kit • Straightedge • Calculators • CPS • Supplemental resources • Geometry Software, i.e. "Geometer's Sketchpad" • Coach books – Grade 10 • Measuring Up – Level H and Final Level • Spiral review and project binder • Bell ringers • Study Island • PSSA Coach Grade 10 • Measuring Up • Appendix 	<ul style="list-style-type: none"> • Teacher made quizzes • Teacher made tests • Notebooks • Textbook problems/worksheets • Student projects • Teacher observations • Common midterm exam • Common final exam <p><u>Problem Solving Strategies</u></p> <ul style="list-style-type: none"> • Eliminate wrong answers • Consider a simpler case • Show and explain • Draw a diagram • Guess and check <p><u>Remediation</u></p> <ul style="list-style-type: none"> • Supplemental worksheets • Peer tutoring • After school tutoring <p><u>Enrichment</u></p> <ul style="list-style-type: none"> • Supplemental worksheets

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Unit: **Right Triangles**

Content Standard: **Apply the Pythagorean Theorem and special right triangle properties to solve problems.**

State Curriculum Standards:

2.1.11A Use Operations

2.2.11B Use estimation to solve problems for which an exact answer is not needed

2.2.11A Develop and use computation concepts, operations and procedures with real numbers in problem solving

2.5.11A Select and use appropriate mathematical concepts and techniques from different areas of mathematics and apply them to solving non-routine and multi-step problems.

2.5.11B Use symbols, mathematical terminology, standard notation, mathematical rules, and other types of mathematical representations to communicate observations, predictions, concepts, procedures, generalizations, ideas, and results.

2.5.11C Present mathematical procedures and results clearly, systematically, succinctly, and correctly.

2.8.11D Formulate expression, equations, and inequalities to model routine and non-routine problem situations

2.10.8A Compute measures of sides and angles using proportions, the Pythagorean Theorem and right triangle relationships.

2.10.11B Identify, create, and solve practical problems involving right triangle using the Pythagorean Theorem.

ISTE Standards:

1 Creativity and Innovation

2 Communication and Collaboration

4 Critical Thinking, Problem Solving, and Decision Making

6 Technology Operations and Concepts

PSSA Anchors:

M11.A.1.1 Represent and/or use fractions as decimals and percents.

M11.A.1.1.1 Find the square root of an integer using either a calculator or estimation.

M11.A.1.1.3 Simplify square roots.

M11.A.2.1.1 Solve problems using operations with rational numbers

M11.A.2.2.1 Simplify expressions involving positive exponents and root

M11.A.3.2.1 Use estimation to check reasonableness of calculations in problem solving situations involving rational numbers.

M11.C.1.4.1 Find the measure of a side of a right triangle using the Pythagorean Theorem.

Pacing Guide: **10 – 15 days full year, 5 – 8 days Block**

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Course Content	Student Performance	Resources	Assessments
<p>A. Pythagorean Theorem – 8.1</p> <p>B. Special Right Triangles</p> <ul style="list-style-type: none"> 45, 45, 90 – 8.2 30, 60, 90 – 8.2 <p>C. Basic Trigonometric Ratios</p> <ul style="list-style-type: none"> Sine – 8.4 Cosine – 8.4 Tangent – 8.3 <p>**Spiral Review</p> <ul style="list-style-type: none"> Fraction review Simplifying square roots – 7.4 	<ul style="list-style-type: none"> Identify the parts of a right triangle Label the sides and angles of a right triangle Construct a right triangle and show the relationship of the sides and angles Calculate missing sides of a right triangle using the Pythagorean Theorem Identify pythagorean triples Explain the ratio of the sides of special right triangles Use special right triangles to solve problems 	<ul style="list-style-type: none"> <u>Geometry</u>– Prentice Hall, 2007 Chapters 7, 8 Geometry teacher's activity kit Straightedge Calculators CPS Supplemental resources Geometry Software, i.e. "Geometer's Sketchpad" Coach books – Grade 10 Measuring Up – Level H and Final Level Spiral review and project binder Bell ringers Study Island PSSA Coach Grade 10 Measuring Up Appendix 	<ul style="list-style-type: none"> Teacher made quizzes Teacher made tests Notebooks Textbook problems/worksheets Student projects Teacher observations Common midterm exam Common final exam <p><u>Problem Solving Strategies</u></p> <ul style="list-style-type: none"> Eliminate wrong answers Consider a simpler case Show and explain Use formulas Draw a diagram <p><u>Remediation</u></p> <ul style="list-style-type: none"> Supplemental worksheets Peer tutoring After school tutoring <p><u>Enrichment</u></p> <ul style="list-style-type: none"> Supplemental worksheets Internet activities

Math Planned Course: College Prep Geometry – Grade 10

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Unit: **Quadrilaterals and polygons**

Content Standard: **Identify and use the properties of polygons and quadrilaterals to solve problems.**

State Curriculum Standards:

2.1.11A Use Operations

2.2.11B Use estimation to solve problems for which an exact answer is not needed

2.5.11A Select and use appropriate mathematical concepts and techniques from different areas of mathematics and apply them to solving non-routine and multi-step problems.

2.5.11B Use symbols, mathematical terminology, standard notation, mathematical rules, and other types of mathematical representations to communicate observations, predictions, concepts, procedures, generalizations, ideas, and results.

2.5.11C Present mathematical procedures and results clearly, systematically, succinctly, and correctly.

2.8.11D Formulate expression, equations, and inequalities to model routine and non-routine problem situations

2.9.11C Identify and prove the properties of quadrilaterals involving opposite sides and angles, consecutive sides and angles, and diagonals using deductive reasoning.

ISTE Standards:

1 Creativity and Innovation

2 Communication and Collaboration

PSSA Anchors:

M11.A.1.1 Represent and/or use fractions as decimals and percents

M11.A.2.1.1 Solve problems using operations with rational numbers

M11.C.1.2.2 Recognize and/or use properties of quadrilaterals

M11.C.1.3.1 Identify and/or use properties of congruent and similar polygons

Pacing Guide: **20 - 25 days full year, 10 -13 days block**

Math Planned Course: College Prep Geometry – Grade 10

Course Content	Student Performance	Resources	Assessments
<p>A. Types of Polygons</p> <ul style="list-style-type: none"> Concave & convex – 3.5 Angles – 3.5 <p>B. Types of Quadrilaterals</p> <ul style="list-style-type: none"> Parallelogram – 6.1, 6.2, 6.3 Rhombus – 6.1, 6.4 Rectangle – 6.1, 6.4 Square – 6.1, 6.4 Trapezoid – 6.1, 6.5 Kite – 6.1, 6.5 <p>C. Properties of Each Quadrilateral</p> <ul style="list-style-type: none"> 6.1, 6.2, 6.4, 6.5 <p>**Spiral Review</p> <ul style="list-style-type: none"> Solving equations Angle relationships Slope Distance formula 	<ul style="list-style-type: none"> Define types of polygons by number of sides Identify real world examples of polygons Determine the measures of interior and exterior angles of polygons Compare and contrast quadrilaterals Solve problems using properties of quadrilaterals Calculate the sides, diagonals, angles, and medians of quadrilaterals 	<ul style="list-style-type: none"> <u>Geometry</u>– Prentice Hall, 2007 Chapters 3, 6 Geometry teacher's activity kit Straightedge Video camera Calculators CPS Supplemental resources Geometry Software, i.e. "Geometer's Sketchpad" Coach books – Grade 10 Measuring Up – Level H and Final Level Spiral review and project binder Bell ringers Study Island PSSA Coach Grade 10 Measuring Up Appendix 	<ul style="list-style-type: none"> Teacher made quizzes Teacher made tests Notebooks Textbook problems/worksheets Student projects Teacher observations Common midterm exam Common final exam <p><u>Problem Solving Strategies</u></p> <ul style="list-style-type: none"> Eliminate wrong answers Consider a simpler case Show and explain Draw a diagram Use formulas <p><u>Remediation</u></p> <ul style="list-style-type: none"> Supplemental worksheets Peer tutoring After school tutoring <p><u>Enrichment</u></p> <ul style="list-style-type: none"> Supplemental worksheets Internet activities

Math Planned Course: College Prep Geometry – Grade 10

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Unit: **Perimeter, Area, Surface Area, and Volume**

Content Standards: **Determine the perimeter and area of various figures.**
Calculate the surface area and volume of three dimensional shapes.

State Curriculum Standards:

2.1.11A Use Operations

2.2.11A Develop and use computation concepts, operations, and procedures with real number in problem-solving situations

2.2.11B Use estimation to solve problems for which an exact answer is not needed

2.5.11A Select and use appropriate mathematical concepts and techniques from different areas of mathematics and apply them to solving non-routine and multi-step problems

2.5.11B Use symbols, mathematical terminology, standard notation, mathematical rules, and other types of mathematical representations to communicate observations, predictions, concepts, procedures, generalizations, ideas, and results.

2.5.11C Present mathematical procedures and results clearly, systematically, succinctly, and correctly.

2.8.11D Formulate expression, equations, and inequalities to model routine and non-routine problem situations

ISTE Standards:

1 Creativity and Innovation a, c

2 Communication and Collaboration

3 Research and Information Fluency a, b, c, d

4 Critical Thinking, Problem Solving, and Decision Making

6 Technology Operations and Concepts a, b, d

PSSA Anchors:

M11.A.1.1 Represent and/or use fractions as decimals and percents

M11.A.2.1.1 Solve problems using operations with rational numbers

M11.A.3.1.1 Simplify expressions using the order of operations to solve problems

M11.B.2.2.1 Calculate surface area of prisms, cylinders, cones, pyramids, and/or spheres.

M11.B.2.2.2 Calculate the volume of prisms, cylinders, cones, pyramids and/or spheres.

M11.B.2.2.3 Estimate and/or determine area, perimeter or circumference of simple or complex figures

M11.B.2.2.4 Find the measurement of a missing length given the perimeter, circumference, area or volume

M11.E.3.1.1 Determine probabilities for independent, dependant, or compound events and represent probability in multiple forms

M11.E.3.1.2 Determine, convert, and/or compare the probability and/or of a simple event

M11.E.4.1.2 Use probability to predict outcomes

Pacing Guide: **25 - 30 days full year, 12 – 15 days Block**

Math Planned Course: College Prep Geometry – Grade 10

Course Content	Student Performance	Resources	Assessments
<p>A. Perimeter & Circumference – 1.9, 10.6</p> <ul style="list-style-type: none"> • Arc Length – 10.6 <p>B. Area</p> <ul style="list-style-type: none"> • Rectangles and squares – 1.9 • Parallelograms – 10.1 • Triangles – 10.1 • Trapezoids – 10.2 • Rhombus – 10.2 • Kites – 10.2 • Circles – 1.9, 10.7 • Sectors – 10.7 • Segments – 10.7 <p>C. Surface Area</p> <ul style="list-style-type: none"> • Prism – 11.2 • Cylinder – 11.2 • Sphere – 11.6 • Cone & pyramid – 11.3 <p>D. Volume</p> <ul style="list-style-type: none"> • Prism – 11.4 • Cylinder – 11.4 • Cone – 11.5 • Pyramid – 11.5 • Sphere – 11.6 <p>**Spiral Review</p> <ul style="list-style-type: none"> • Order of operations 	<ul style="list-style-type: none"> • Solve problems by finding the perimeter and/or area of various geometric shapes • Compare and contrast perimeter and area • Apply the area formulas to irregular shapes • Determine and calculate perimeter and area in real world problems • Explain the type of units used to represent perimeter, area, surface area and volume • Construct and label three dimensional shapes • Analyze surface area and volume formula • Calculate the surface area and volume of several objects using formula sheet 	<ul style="list-style-type: none"> • <u>Geometry</u>– Prentice Hall, 2007 Chapters 1, 10, 11 • Geometry teacher's activity kit • Straightedge • Calculators • CPS • Supplemental resources • Geometry Software, i.e. "Geometer's Sketchpad" • PSSA formula sheet – Grade 11 • Coach books – Grade 10 • Measuring Up – Level H and Final Level • Spiral review and project binder • Bell ringers • Study Island • PSSA Coach Grade 10 • Measuring Up • Appendix 	<ul style="list-style-type: none"> • Teacher made quizzes • Teacher made tests • Notebooks • Textbook problems/worksheets • Student projects • Teacher observations • Common final exam <p><u>Problem Solving Strategies</u></p> <ul style="list-style-type: none"> • Eliminate wrong answers • Consider a simpler case • Show and explain • Use formulas • Draw a diagram <p><u>Remediation</u></p> <ul style="list-style-type: none"> • Supplemental worksheets • Peer tutoring • After school tutoring <p><u>Enrichment</u></p> <ul style="list-style-type: none"> • Supplemental worksheets • Internet activities

Math Planned Course: College Prep Geometry – Grade 10

• Estimation			
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Unit: **Similarity**

Content Standard: **Identify and use the properties of polygons and quadrilaterals to solve problems.**

State Curriculum Standards:

2.1.11A Use Operations

2.2.11B Use estimation to solve problems for which an exact answer is not needed

2.5.11A Select and use appropriate mathematical concepts and techniques from different areas of mathematics and apply them to solving non-routine and multi-step problems

2.5.11B Use symbols, mathematical terminology, standard notation, mathematical rules, and other types of mathematical representations to communicate observations, predictions, concepts, procedures, generalizations, ideas, and results.

2.5.11C Present mathematical procedures and results clearly, systematically, succinctly, and correctly.

2.8.11D Formulate expression, equations, and inequalities to model routine and non-routine problem situations

2.9.11C Identify and prove the properties of quadrilaterals involving opposite sides and angles, consecutive sides and angles, and diagonals using deductive reasoning

ISTE Standards:

1 Creativity and Innovation

2 Communication and Collaboration

4 Critical Thinking, Problem Solving, and Decision Making

6 Technology Operations and Concepts

PSSA Anchors:

M11.A.1.1 Represent and/or use fractions as decimals and percents

M11.A.2.1.1 Solve problems using operations with rational numbers

M11.C.1.2.2 Recognize and/or use properties of quadrilaterals

M11.C.1.3.1 Identify and/or use properties of congruent and similar polygons

Pacing Guide: **10 - 15 days full year, 5 – 8 days Block**

Math Planned Course: College Prep Geometry – Grade 10

Course Content	Student Performance	Resources	Assessments
<p>A. Ratio & Proportion – 7.1</p> <p>B. Similarity</p> <ul style="list-style-type: none"> Triangles – 7.2 Polygons – 7.2 <p>C. Similarity Theorems – 7.3, 7.4</p> <p>D. Geometric Mean – 7.4</p> <p>E. Area & Volume of Similar Solids – 11.7</p> <p>**Spiral Review</p> <ul style="list-style-type: none"> Solving equations Angle relationships Slope Distance formula 	<ul style="list-style-type: none"> Solving proportions Proving triangles and polygons similar using theorems and postulates Solving problems with geometric mean Relating area and volume of similar solids 	<ul style="list-style-type: none"> <u>Geometry</u>– Prentice Hall, 2007 Chapters 7, 11 Geometry teacher's activity kit Straightedge Calculators CPS Supplemental resources Geometry Software, i.e. "Geometer's Sketchpad" Coach books – Grade 10 Measuring Up – Level H and Final Level Spiral review and project binder Bell ringers Study Island PSSA Coach Grade 10 Measuring Up Appendix 	<ul style="list-style-type: none"> Teacher made quizzes Teacher made tests Notebooks Textbook problems/worksheets Student projects Teacher observations Common final exam <p><u>Problem Solving Strategies</u></p> <ul style="list-style-type: none"> Eliminate wrong answers Consider a simpler case Show and explain Working backwards Patterns <p><u>Remediation</u></p> <ul style="list-style-type: none"> Supplemental worksheets Peer tutoring After school tutoring <p><u>Enrichment</u></p> <ul style="list-style-type: none"> Supplemental worksheets Internet activities

Math Planned Course: College Prep Geometry – Grade 10

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Unit: **Circles**

Content Standard: **Use properties of circles to solve problems.**

State Curriculum Standards:

2.1.11A Use Operations

2.2.11B Use estimation to solve problems for which an exact answer is not needed

2.5.11A Select and use appropriate mathematical concepts and techniques from different areas of mathematics and apply them to solving non-routine and multi-step problems

2.5.11B Use symbols, mathematical terminology, standard notation, mathematical rules, and other types of mathematical representations to communicate observations, predictions, concepts, procedures, generalizations, ideas, and results.

2.5.11C Present mathematical procedures and results clearly, systematically, succinctly, and correctly.

2.8.11D Formulate expression, equations, and inequalities to model routine and non-routine problem situations

2.9.11F Use the properties of angles, arcs, chords, tangents, and secants to solve problems involving circles

ISTE Standards:

4 Critical Thinking, Problem Solving, and Decision Making

PSSA Anchors:

M11.A.1.1 Represent and/or use fractions as decimals and percents

M11.A.2.1.1 Solve problems using operations with rational numbers

M11.C.1.1.1 Recognize or use the properties of a radius, diameter, chord, tangent, and/or secant

M11.C.1.1.2 Recognize or use the properties of arc, semicircle, inscribed angles, and/or central angles

M11.E.1.1.1 Create and/or use circle graphs

M11.E.1.1.2 Answer questions based on displayed data

M11.E.4.1.1 Estimate or calculate to make predictions based on a circle graph

Pacing Guide: **20 - 25 days full year, 10 – 13 days Block**

Math Planned Course: College Prep Geometry – Grade 10

Course Content	Student Performance	Resources	Assessments
<p>A. Parts of a Circle</p> <ul style="list-style-type: none"> • Radius – 1.9, 10.6 • Diameter – 1.9, 10.6 • Center – 1.9, 10.6 • Arcs – 12.2 • Chords – 12.2 • Tangents – 12.1 • Secants – 12.4 <p>B. Central & Inscribed Angles – 10.6, 12.3</p> <p>C. Properties of Tangent, Secants, and Chords – 12.1, 12.4</p> <p>**Spiral Review</p> <ul style="list-style-type: none"> • Solving proportions • Right triangle math 	<ul style="list-style-type: none"> • Identify parts of a circle • Calculate the measure of central and inscribed angles • Use properties of tangents, secants, and chords to find measures of angles • Use properties of circles to solve real-world problems 	<ul style="list-style-type: none"> • <u>Geometry</u>– Prentice Hall, 2007 Chapters 1, 10, 12 • Geometry teacher’s activity kit • Calculators • CPS • Supplemental resources • Geometry Software, i.e. “Geometer’s Sketchpad” • Coach books – Grade 10 • Measuring Up – Level H and Final Level • Spiral review and project binder • Bell ringers • Study Island • PSSA Coach Grade 10 • Measuring Up • Appendix 	<ul style="list-style-type: none"> • Teacher made quizzes • Teacher made tests • Notebooks • Textbook problems/worksheets • Student projects • Teacher observations • Common final exam <p><u>Problem Solving Strategies</u></p> <ul style="list-style-type: none"> • Eliminate wrong answers • Consider a simpler case • Show and explain • Using formulas <p><u>Remediation</u></p> <ul style="list-style-type: none"> • Supplemental worksheets • Peer tutoring • After school tutoring <p><u>Enrichment</u></p> <ul style="list-style-type: none"> • Supplemental worksheets • Internet activities

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Unit: **Reasoning and Proof**

Content Standard: **Use inductive and deductive reasoning to write and solve various types of proofs.**

State Curriculum Standard:

2.1.11A Use Operations

2.2.11A Develop and use computation concepts, operations, and procedures with real number in problem-solving situations

2.4.8C Use if.... Then statements to construct simple valid arguments

2.4.8E Distinguish between deductive and inductive reasoning

2.4.11B Construct valid arguments from stated facts

2.4.11C Determine the validity of an argument

2.5.11B Use symbols, mathematical terminology, standard notation, mathematical rules, and other types of mathematical representations to communicate observations, predictions, concepts, procedures, generalizations, ideas, and results.

2.5.11C Present mathematical procedures and results clearly, systematically, succinctly, and correctly.

ISTE Standards:

1 Creativity and Innovation

2 Communication and Collaboration

4 Critical Thinking, Problem Solving, and Decision Making

6 Technology Operations and Concepts

PSSA Anchors:

M11.D.1.1 Analyze and/or use patterns

M11.D.1.1.1 Analyze a set of data for the existence of a pattern and represent the pattern algebraically

M11.D.1.1.1 Determine missing shapes in a series of shapes and/or missing numbers in a series of numbers.

R11.A.2.3 Make inferences and draw conclusions based on text

Pacing Guide: **5 days full year, 3 days Block**

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<p>A. Reasoning</p> <ul style="list-style-type: none"> Inductive – 1.1 Deductive – 2.3 <p>B. Conditional Statements 2.1, 2.2, 5.4</p>	<ul style="list-style-type: none"> Complete numerical patterns Compare and contrast using inductive and deductive reasoning Determine the type of reasoning used to solve a given problem 	<ul style="list-style-type: none"> <u>Geometry</u>– Prentice Hall, 2007 Chapters 1, 2, 5 Geometry teacher's activity kit Supplemental resources Geometry Software, i.e. "Geometer's Sketchpad" Coach books – Grade 10 Measuring Up – Level H and Final Level Spiral review and project binder Bell ringers Study Island PSSA Coach Grade 10 Measuring Up Appendix 	<ul style="list-style-type: none"> Teacher made quizzes Teacher made tests Notebooks Textbook problems/worksheets Student projects Teacher observations Common final exam <p><u>Problem Solving Strategies</u></p> <ul style="list-style-type: none"> Eliminate wrong answers Consider a simpler case Show and explain Patterns <p><u>Remediation</u></p> <ul style="list-style-type: none"> Supplemental worksheets Peer tutoring After school tutoring <p><u>Enrichment</u></p> <ul style="list-style-type: none"> Supplemental worksheets Internet activities
<p>**Spiral Review</p> <ul style="list-style-type: none"> Properties of algebra – 2.4 Properties of congruence – 2.4 Properties of equality – 2.4 			

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