

DeSoto County High School

Geometry Honors

Curriculum Calendar

2011-2012

UNIT/ORGANIZING PRINCIPLE: Points, lines and planes			Pacing: 1st 9-weeks days 1-12	
<u>Essential Question:</u> What are the relationships between points, lines, and planes?			Big Idea : Points, lines and planes	
Concepts/ Content	Learning Target/Skills	Benchmarks	Essential Content and Understanding	Terminology
Building blocks	Find the <u>lengths</u> and midpoints of <u>line</u> segments in two-dimensional <u>coordinate</u> systems.	MA.912.G.1.1 moderate	<p>understand that point, lines and planes have NO definitions</p> <p>name 3 points that are collinear; coplanar</p> <p>draw 4 points that are coplanar but not collinear</p> <p>demonstrate understanding of a line, line segment, and ray</p> <p>use postulates to justify relationships between points, lines and planes</p> <p>use a protractor to draw various types of angles</p> <p>give two points, find the distance between them and the coordinates of</p>	<p>Point</p> <p>Line</p> <p>Plane</p> <p>Protractor</p> <p>Collinear/Coplanar</p> <p>Line</p> <p>Ray</p> <p>Segment</p> <p>Midpoint of line</p> <p>Segments</p> <p>Distance formula</p> <p>Coordinate Plane</p> <p>Angles</p> <p>Vertical Angles</p> <p>Linear Pairs</p> <p>Adjacent Angles</p> <p>Congruent angles and Segments</p> <p>Complementary & supplementary angles</p>

			the midpoint find the measure of vertical, complementary and supplementary angles	
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UNIT/ORGANIZING PRINCIPLE: Logic			Pacing: 1st 9-weeks days 13-20	
Essential Question: Can the student identify a logical argument following the laws of inductive and deductive reasoning?			Big Idea : Logic	
Concepts/ Content	Learning Target/Skills	Benchmarks	Essential Content and Understanding	Terminology
Deductive thinking process	<p>Use truth tables to determine truth values of propositional statements</p> <p>Find the converse, inverse and contrapositive of a statement.</p> <p>Determine whether two propositions are logically equivalent.</p> <p>Use methods of direct and indirect proof and determine whether a short proof is logically valid.</p>	<p>MA.912.D.6.1 moderate</p> <p>MA.912.D.6.2 moderate</p> <p>MA.912.D.6.3 moderate</p> <p>MA.912.D.6.4 moderate</p>	<p>rewrite a statement as a conditional statement</p> <p>write the inverse, converse, contrapositive statements for a given conditional statement\</p> <p>explain if two statements are equivalent statements</p> <p>explain if a definition is a good definition</p> <p>write and rewrite a biconditional statement</p> <p>use deductive reasoning to analyze a logical argument</p>	<p>Conditional statement</p> <p>Hypothesis</p> <p>Conclusion</p> <p>Inverse</p> <p>Converse</p> <p>Contrapositive statements</p> <p>Equivalent statements</p> <p>Biconditional statements</p> <p>Deductive reasoning</p> <p>Direct and indirect proof</p> <p>Truth tables</p> <p>Validity</p>

UNIT/ORGANIZING PRINCIPLE: Mathematical Reasoning and Problem Solving			Pacing: 1st 9-weeks days 21-30	
Essential Question: Can the student use problem solving strategies to make conjectures and determine whether a solution is reasonable using inductive and deductive reasoning?			Big Idea : Reasoning	
Concepts/ Content	Learning Target/Skills	Benchmarks	Essential Content and Understanding	Terminology
Mathematical Reasoning	<p>Analyze the structure of <u>euclidean geometry</u> as an axiomatic system. Distinguish between undefined terms, definitions, <u>postulates</u>, and <u>theorems</u>.</p> <p>Use a variety of problem-solving strategies, such as drawing a diagram, making a <u>chart</u>, guess-and-check, solving a simpler problem, writing an <u>equation</u>, and working backwards.</p> <p>Determine whether a solution is reasonable in the context of the original situation.</p> <p>Make conjectures with justifications about geometric ideas. Distinguish between information that supports a conjecture and the <u>proof</u> of a conjecture.</p>	<p>MA.912.G.8.1 high</p> <p>MA.912.G.8.2 moderate</p> <p>MA.912.G.8.3 moderate</p> <p>MA.912.G.8.4 high</p>	<p>Find and describe patterns and then use inductive reasoning to make real-life conjectures</p> <p>Analyze a conjecture for its validity and give a counterexample to prove a statement false</p> <p>Use a variety of strategies like drawing a diagram, making a chart, guess-and check, writing and equation and working backwards to solve a problem</p> <p>Distinguish to difference between undefined terms, definitions, postulates and theorems and use them to construct logical arguments and geometric proofs</p>	<p>Conjecture Counterexample Inductive reasoning Postulates Theorems Definitions Guess and check Equation Working a Problem Backwards Logical Arguments Geometric Proofs Chart</p>

UNIT/ORGANIZING PRINCIPLE: Parallel and Perpendicular Lines **Pacing: 1st 9-weeks days 31-45**

Essential Question: How can the appropriate vocabulary be used to identify and use the relationships of the angles formed by parallel lines cut by a transversal?

Big Idea : Parallel lines

Concepts/ Content	Learning Target/Skills	Benchmarks	Essential Content and Understanding	Terminology
Parallel and Perpendicular Lines	<p>Identify and use the relationships between special pairs of <u>angles</u> formed by parallel <u>lines</u> and <u>transversals</u>.</p> <p>Find the <u>lengths</u> and midpoints of <u>line</u> segments in two-dimensional <u>coordinate</u> systems.</p>	<p>MA.912.G.1.3 moderate</p> <p>MA.912.G.1.1 Moderate</p>	<p>identify corresponding angles, alternate interior angles, alternate exterior angles, consecutive interior angles, and same side interior angles</p> <p>find the measure of these angles when given algebraic expressions to represent the angles</p> <p>classify the angles as obtuse, acute, or right angles</p> <p>identify and determine if lines are parallel or perpendicular lines in the Coordinate Plane</p> <p>explain if two lines are parallel,</p>	<p>Parallel lines Perpendicular lines Transversal Corresponding angles Alternate interior angles Alternate exterior angles Consecutive interior angles Same side interior angles Slope Equations of Line</p>

			perpendicular or neither given coordinates of points determine the equation of the line	
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UNIT/ORGANIZING PRINCIPLE: Congruent Triangles			Pacing: 2 nd 9-weeks days 46-58	
Essential Question: What are the appropriate conclusions based on triangles and their congruency?			Big Idea : Triangles	
Concepts/ Content	Learning Target/Skills	Benchmarks	Essential Content and Understanding	Terminology
Congruent Triangles	<p>Use properties of congruent triangles to solve problems involving lengths and areas.</p> <p>Prove that triangles are congruent or similar and use the concept of corresponding parts of congruent triangles.</p> <p>Use coordinate geometry to prove properties of congruent, regular, and similar triangles.</p> <p>Write geometric proofs, including proofs by contradiction and proofs involving coordinate geometry. Use and compare a variety of ways to present deductive proofs, such as flow charts, paragraphs, two-column, and indirect proofs.</p> <p>Use coordinate geometry to prove properties of congruent, regular and similar</p>	<p>MA.912.G.4.4 moderate</p> <p>MA.912.G.4.6 high</p> <p>MA.912.G.4.8 high</p> <p>MA.912.G.8.5 high</p> <p>MA.912.G.2.6 high</p>	<p>use properties and theorems to prove triangles are congruent using a variety of methods such as flow charts, two-column, paragraphs and indirect proofs</p> <p>given parts of two congruent triangles, find the other parts and use them to solve problems involving lengths and areas</p> <p>know what CPCTC means and use the concept to prove more triangles congruent</p> <p>use coordinate geometry to prove triangles are congruent</p> <p>using congruent triangles find the</p>	<p>Congruency Corresponding Parts SSS SAS ASA AAS HL Two column proof Indirect proof Flow chart Paragraph Proof CPCTC Segment lengths Triangle area Congruent Triangles</p>

	polygons , and to perform transformations in the plane .		measure of interior angles	
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UNIT/ORGANIZING PRINCIPLE: Properties of Triangles			Pacing: 2 nd 9-weeks days 59-70	
Essential Question: How can the classification of triangles and their components be expressed and constructed?			Big Idea : Triangles	
Concepts/ Content	Learning Target/Skills	Benchmarks	Essential Content and Understanding	Terminology
Understanding perpendicular bisector, angle bisector, median, altitudes	<p>Classify, construct, and describe <u>triangles</u> that are right, acute, obtuse, scalene, isosceles, equilateral, and equiangular.</p> <p>Define, identify, and construct <u>altitudes</u>, <u>medians</u>, <u>angle bisectors</u>, <u>perpendicular bisectors</u>, <u>orthocenter</u>, <u>centroid</u>, <u>incenter</u>, and <u>circumcenter</u>.</p> <p>Apply the <u>inequality theorems</u>: <u>triangle inequality</u>, <u>inequality</u> in one <u>triangle</u>, and the <u>Hinge theorem</u>.</p> <p>Construct <u>congruent</u> segments and <u>angles</u>, <u>angle bisectors</u>, and parallel and <u>perpendicular lines</u> using a straight <u>edge</u> and compass or a drawing program, explaining and justifying the process used.</p> <p>Perform basic constructions using straightedge and compass, and/or drawing programs describing and justifying the <u>procedures</u> used. Distinguish between sketching, constructing, and drawing geometric figures.</p>	<p>MA.912.G.4.1 moderate</p> <p>MA.912.G.4.2 moderate</p> <p>MA.912.G.4.7 moderate</p> <p>MA912.G.1.2 moderate</p> <p>MA.912.G.8.6 high</p>	<p>identify and classify triangles by their sides and angles</p> <p>define, identify, and construct altitudes, medians, angle bisectors, perpendicular bisectors, orthocenter, centroid, incenter, and circumcenter</p> <p>explain the difference between sketching, constructing and drawing geometric figures</p> <p>understand and apply the Hinge Theorem</p> <p>use the inequality theorems as it relates to one triangle</p>	<p>Equilateral</p> <p>Isosceles</p> <p>Scalene</p> <p>Acute</p> <p>Equiangular</p> <p>Obtuse</p> <p>Altitude</p> <p>Median</p> <p>Orthocenter</p> <p>Centroid</p> <p>Incenter</p> <p>Circumcenter</p> <p>Hinge Theorem</p> <p>Bisectors</p> <p>Inequalities in a triangle</p> <p>Compass</p> <p>Straight edge</p>

UNIT/ORGANIZING PRINCIPLE: Polygons **Pacing: 2nd 9-weeks days 71-80**

Essential Question: How can a variety of methods including algebraic be used to find measures of interior and exterior angles? **Big Idea : Polygons**

Concepts/ Content	Learning Target/Skills	Benchmarks	Essential Content and Understanding	Terminology
Measure of interior and exterior angles of polygons	Determine the measures of interior and exterior <u>angles</u> of <u>polygons</u> , justifying the method used.	MA.912.G.2.2 moderate	<p>given the three angles of a quadrilateral, calculate the fourth</p> <p>given an exterior angle numerically or as an algebraic expression, calculate an interior angle</p> <p>calculate the sum of the interior and exterior angles of any polygon including when angles are represented by algebraic expressions</p> <p>calculate each interior and exterior angle of a regular polygon</p>	<p>Exterior</p> <p>Interior</p> <p>Vertex</p> <p>Congruent angles</p> <p>Angle</p> <p>Acute, right, obtuse, straight angles</p> <p>Adjacent angles</p> <p>Angle bisector</p> <p>Vertical angles</p> <p>Linear pair</p> <p>Complementary and supplementary angles</p>

UNIT/ORGANIZING PRINCIPLE: Quadrilaterals			Pacing: 2 nd 9-weeks days 81-90	
Essential Question: What is the proper use of precise language used to identify quadrilaterals and their properties?			Big Idea : Quadrilaterals	
Concepts/ Content	Learning Target/Skills	Benchmarks	Essential Content and Understanding	Terminology
<p>Distinguish between parallelograms, rectangles, rhombuses, squares</p> <p>Determine types of quadrilaterals</p>	<p>Describe, classify, and compare relationships among <u>quadrilaterals</u> including the <u>square</u>, <u>rectangle</u>, rhombus, <u>parallelogram</u>, trapezoid, and <u>kite</u>.</p> <p>Compare and contrast special <u>quadrilaterals</u> on the basis of their properties.</p> <p>Prove theorems involving quadrilaterals.</p> <p>Explain the derivation and apply <u>formulas</u> for <u>perimeter</u> and <u>area</u> of <u>polygons</u> (triangles, <u>quadrilaterals</u>, <u>pentagons</u>, etc.).</p>	<p>MA.912.G.3.1 moderate</p> <p>MA.912.G.3.2 moderate</p> <p>MA.912.G.3.4 high</p> <p>MA.912.G.2.5 moderate</p>	<p>know that a parallelogram has both pairs of opposite sides congruent; both pairs of opposite sides are parallel; and diagonals bisect each other</p> <p>understand that a rectangle is a parallelogram with four right angles and congruent diagonals</p> <p>understand that a rhombus is a parallelogram with four congruent sides and perpendicular diagonals</p> <p>understand that a square is a parallelogram with four congruent sides and four right angles</p>	<p>Quadrilateral</p> <p>Parallelogram</p> <p>Square</p> <p>Rectangle</p> <p>Rhombus</p> <p>Trapezoid</p> <p>Isosceles Trapezoid</p> <p>Kite</p> <p>Diagonals</p> <p>Perpendicular</p> <p>Parallel</p> <p>Consecutive Sides</p> <p>Opposite Sides</p> <p>Opposite Angles</p> <p>Bisect</p> <p>Venn Diagram</p>

			<p>know that a trapezoid has both pairs of opposite sides parallel</p> <p>explain the special properties of the right and the isosceles trapezoids</p> <p>know that a kite is a quadrilateral with two pairs of consecutive sides congruent; diagonals are perpendicular; one diagonal is bisected; one pair of opposite angles is bisected</p> <p>use Venn diagrams to associate all types of quadrilaterals using algebra and coordinate geometry to give the most specific name of a quadrilateral in the coordinate plane</p> <p>use two-column proofs to prove the theorems involving quadrilaterals</p> <p>find the perimeter and area of various types of quadrilaterals</p>	
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			find the midsegment of a triangle, and trapezoid	
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UNIT/ORGANIZING PRINCIPLE: Similarity			Pacing: 3 rd 9-weeks days 91-105	
Essential Question: How can the properties of similar triangles be proven and applied using a variety of methods?			Big Idea : Triangles	
Concepts/ Content	Learning Target/Skills	Benchmarks	Essential Content and Understanding	Terminology
Ratio and Proportion Proving Triangles Similar	<p>Use properties of <u>congruent</u> and similar <u>triangles</u> to solve problems involving <u>lengths</u> and areas.</p> <p>Prove that <u>triangles</u> are <u>congruent</u> or similar and use the concept of corresponding parts of <u>congruent triangles</u>.</p> <p>Apply <u>theorems</u> involving segments divided proportionally.</p> <p>Use <u>coordinate geometry</u> to prove properties of <u>congruent</u>, regular, and similar <u>triangles</u>.</p> <p>Explore and use other <u>sequences</u> found in nature such as the <u>Fibonacci sequence</u> and the <u>golden ratio</u>.</p>	<p>MA912.G.4.4 moderate</p> <p>MA912.G.4.6 high</p> <p>MA.912.G.4.5 moderate</p> <p>MA.912.G.4.8 high</p> <p>MA.912.D.11.5 high</p>	<p>use ratio and proportions from patterns in sequences and series found in nature like the Fibonacci sequence and the golden ratio</p> <p>given parts of two similar triangles, find the other parts and use them to solve problems involving lengths and areas</p> <p>given parts of similar triangles, demonstrate their correspondence and prove that the two triangles are similar</p> <p>use coordinate geometry to prove that two triangles are similar using properties, postulates and theorems</p> <p>use algebra to apply theorems where segments are divided proportionally</p>	<p>Similarity</p> <p>Corresponding Parts</p> <p>Ratio</p> <p>Proportions</p> <p>Golden Ratio</p> <p>Fibonacci Sequence</p> <p>Coordinate Geometry</p> <p>Properties</p> <p>Postulates & Theorem</p> <p>AA</p> <p>SAS</p> <p>SSS</p> <p>Similar Triangles</p>

UNIT/ORGANIZING PRINCIPLE: Special Right Triangles			Pacing: 3rd 9-weeks days 106-114	
Essential Question: What are the right triangle relationships and how are they used to solve application problems?			Big Idea : Triangles	
Concepts/ Content	Learning Target/Skills	Benchmarks	Essential Content and Understanding	Terminology
Special Right Triangles and Trigonometric Ratios	<p>Use special right triangle s ($30^\circ - 60^\circ - 90^\circ$ and $45^\circ - 45^\circ - 90^\circ$) to solve problems.</p> <p>Define and use the trigonometric ratios (sine, cosine, tangent, cotangent, secant, cosecant) in terms of angles of right triangles.</p>	<p>MA.912.G.5.3 moderate</p> <p>MA.912.T.2.1 moderate</p>	<p>use a variety of methods involving right triangles to solve real-world problems including trigonometric ratios</p> <p>use the formulas to find missing side lengths of 45°-45°-90° or 30°-60°-90° special right triangles</p> <p>understand and define the trigonometric ratios (sine, cosine, tangent, cotangent, secant, cosecant) as relate to the angles of a right triangle</p>	<p>45°-45°-90° triangle</p> <p>30°-60°-90° triangle</p> <p>Trigonometric Ratios</p> <p>Sine</p> <p>Cosine</p> <p>Tangent</p> <p>Cotangent</p> <p>Secant</p> <p>Cosecant</p>

UNIT/ORGANIZING PRINCIPLE: Right Triangles			Pacing: 3rd 9-weeks days 115-123	
Essential Question: How can the Pythagorean Theorem be used to solve a real-world problem? What are the relationships between similar right triangles?			Big Idea : Triangles	
Concepts/ Content	Learning Target/Skills	Benchmarks	Essential Content and Understanding	Terminology
<p>Pythagorean Theorem and its Applications</p> <p>Right triangle relationships</p>	<p>Prove and apply the Pythagorean <u>theorem</u> and its <u>converse</u>.</p> <p>State and apply the relationships that exist when the <u>altitude</u> is drawn to the <u>hypotenuse</u> of a <u>right triangle</u> .</p> <p>Solve <u>real-world problem</u> s involving <u>right triangles</u>.</p>	<p>MA.912.G.5.1 high</p> <p>MA.912.G.5.2 moderate</p> <p>MA.912.G.5.4 high</p>	<p>use geometric mean to apply the relationship that exists when the altitude is drawn to the hypotenuse of a right triangle</p> <p>using similar triangles describe the relationship of the triangles formed when the altitude is drawn the hypotenuse of a right triangle</p> <p>identify the components of a right triangle</p> <p>prove the Pythagorean Theorem</p> <p>use the Pythagorean Theorem to find missing sides of a right triangle</p> <p>apply the Pythagorean Theorem and its converse to solve problems</p>	<p>Geometric Mean</p> <p>Hypotenuse</p> <p>Legs</p> <p>Pythagorean Theorem</p> <p>Converse</p> <p>Similar Triangles</p>

UNIT/ORGANIZING PRINCIPLE: Transformations and Vectors			Pacing: 3rd 9-weeks days 124-135	
Essential Question: What are the characteristics of the four types of transformations? How can vectors be used to model and solve application problems?			Big Idea : Transformations	
Concepts/ Content	Learning Target/Skills	Benchmarks	Essential Content and Understanding	Terminology
<p>Transformations</p> <p>Vectors</p>	<p>Apply transformations (translations, reflections, rotations, dilations, and scale factors) to polygons. to determine congruence, similarity, and symmetry. Know that images formed by translations, reflections, and rotations are congruent to the original shape. Create and verify tessellations of the plane using polygons.</p> <p>Use coordinate geometry to prove properties of congruent, regular and similar polygons, and to perform transformations in the plane.</p> <p>Use vectors to model and solve application problems.</p>	<p>MA.912.G.2.4 high</p> <p>MA.912.G.2.6 high</p> <p>MA.912.D.9.3 high</p>	<p>identify if a figure has been reflected, rotated, or translated</p> <p>determine if a transformation is isometric</p> <p>use the coordinate plane to draw transformations and show that the image and the pre-image are the same</p> <p>write the vector formed by the coordinates of two points in component form find the sum of vectors</p> <p>determine the magnitude and the direction of a vector</p> <p>solve real-world problems using vectors such as velocity</p>	<p>Image</p> <p>Pre-image</p> <p>Transformation</p> <p>Isometric reflections</p> <p>Line of reflection</p> <p>Line of symmetry</p> <p>Rotation</p> <p>Center of rotation</p> <p>Angle of rotation</p> <p>Rotational symmetry</p> <p>Translations</p> <p>Dilations</p> <p>Vectors</p> <p>Component vectors</p> <p>Measure and direction of vectors</p>

UNIT/ORGANIZING PRINCIPLE: Solids			Pacing: 4 th 9-weeks days 136-161	
Essential Question: How can the properties of polyhedra and spheres be identified and described?			Big Idea : Solids	
Concepts/ Content	Learning Target/Skills	Benchmarks	Essential Content and Understanding	Terminology
<p>Properties of polyhedrons and spheres</p> <p>Identify cross sections and calculate the area and perimeter of cross sections</p>	<p>Describe and make regular, non-regular, and <u>oblique</u> polyhedra, and sketch the <u>net</u> for a given polyhedron and vice versa.</p> <p>Describe the relationships between the <u>faces</u>, <u>edges</u>, and <u>vertices</u> of polyhedra.</p> <p>Identify, sketch, find areas and/or <u>perimeters</u> of cross sections of solid objects.</p> <p>Identify <u>chords</u>, tangents, <u>radii</u>, and <u>great circles</u> of <u>spheres</u></p> <p>Explain and use <u>formulas</u> for lateral <u>area</u>, surface <u>area</u>, and <u>volume</u> of solids.</p> <p>Identify and use properties of <u>congruent</u> and similar solids.</p> <p>Determine how changes in <u>dimensions</u> affect the surface <u>area</u> and <u>volume</u> of common <u>geometric solids</u>.</p>	<p>MA.912.G.7.1 moderate</p> <p>MA.912.G.7.2 moderate</p> <p>MA.912.G.7.3 moderate</p> <p>MA.912.G.7.4 low</p> <p>MA.912.G.7.5 moderate</p> <p>MA.912.G.7.6 moderate</p> <p>MA.912.G.7.7 moderate</p>	<p>Identify the types of polyhedrons and sketch the net for a given polyhedron</p> <p>Determine the number of faces, edges, and vertices of a polyhedron</p> <p>Describe the cords, tangents, radii, and the great circle of a sphere</p> <p>Identify the cross section of a solid and find the perimeter and area</p> <p>identify the correct formula to use with a given figure</p> <p>discover understand and use the formulas for lateral area, surface area, and volume of various solids</p> <p>determine the effect of changing parameter of the dimensions on the surface area and volume of a given</p>	<p>Polyhedron</p> <p>Prism</p> <p>Pyramid</p> <p>Cone</p> <p>Cylinder</p> <p>Sphere</p> <p>Platonic solids</p> <p>Area</p> <p>Perimeter</p> <p>Circle</p> <p>Rectangle</p> <p>Square</p> <p>Parallelogram</p> <p>Regular polyhedron</p> <p>Non-regular polyhedron</p> <p>Oblique polyhedron</p> <p>Faces</p> <p>Edges</p> <p>Vertices of polyhedron</p> <p>Cross section of polyhedron</p> <p>Chords</p> <p>Tangents</p> <p>radii</p> <p>Great circle</p> <p>Net</p>

				Surface area of prisms and cylinders Surface area of pyramids and cones Volumes of prisms and cylinders Volumes of pyramids and cones Similar solids ratios
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UNIT/ORGANIZING PRINCIPLE: Properties of Circles			Pacing: 4 th 9-weeks days 162-168	
Essential Question: How can the appropriate vocabulary be used to identify and define the components of a circle?			Big Idea : Circles	
Concepts/ Content	Learning Target/Skills	Benchmarks	Essential Content and Understanding	Terminology
<p>Components of Circles</p> <p>Circles circumscribed and inscribed about and around polygons</p>	<p>Determine the center of a given <u>circle</u>. Given three <u>points</u> not on a <u>line</u>, construct the <u>circle</u> that passes through them. Construct tangents to <u>circles</u>. Circumscribe and inscribe <u>circles</u> about and within <u>triangles</u> and regular <u>polygons</u>.</p> <p>Define and identify: <u>circumference</u>, <u>radius</u>, <u>diameter</u>, <u>arc</u>, <u>arc length</u>, <u>chord</u>, <u>secant</u>, tangent and <u>concentric circles</u> .</p>	<p>MA.912.G.6.1 high</p> <p>MA.912.G.6.2 low</p>	<p>define the vocabulary associated with circles including circumference, radius, diameter, arc, arc length, chord, secant, tangent and concentric circles</p> <p>identify the components of a circle</p> <p>construct tangents to a circle and identify the point of tangency</p> <p>draw circles circumscribed and inscribed using triangles and regular polygons</p> <p>construct a circle given three points not on a line. (*Use Computer software or Cabri Jr for above bullet)</p> <p>identify and use the characteristics</p>	<p>Circle</p> <p>Center of a Circle</p> <p>Circumference</p> <p>Chord</p> <p>Arc</p> <p>Arc Length</p> <p>Secant</p> <p>Tangent</p> <p>Concentric Circles</p> <p>Regular Polygon</p> <p>Perpendicular Bisector</p> <p>Inscribed</p> <p>Circumscribed</p> <p>Radius</p> <p>Diameter</p> <p>Internal Tangents</p> <p>External Tangents</p> <p>Interior/Exterior of a Circle</p>

			of quadrilateral inscribed in a circle	
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UNIT/ORGANIZING PRINCIPLE: Theorems about Circles			Pacing: 4 th 9-weeks days 169-177	
Essential Question: How can angles, segments, and arc measures formed by chords, secants, and tangents be used to solve problems?			Big Idea : Circles	
Concepts/ Content	Learning Target/Skills	Benchmarks	Essential Content and Understanding	Terminology
<p>Angle and Segment Relationships</p> <p>Circumference and Area of a Circle</p>	<p>Prove <u>theorems</u> related to <u>circles</u>, including related <u>angles</u>, <u>chords</u>, tangents, and <u>secants</u>.</p> <p>Determine and use measures of <u>arcs</u> and related <u>angles</u> (central, inscribed, and <u>intersections</u> of <u>secants</u> and tangents).</p> <p>Solve <u>real-world problem</u> s using measures of <u>circumference</u>, <u>arc length</u>, and areas of <u>circles</u> and sectors.</p>	<p>MA.912.G.6.3 high</p> <p>MA.912.G.6.4 moderate</p> <p>MA.912.G.6.5 high</p>	<p>prove theorems related to circles</p> <p>use the theorems and formulas to find the measure of angles formed by chords, secants and tangents including the use of algebraic expressions to represent the measure of angles</p> <p>use theorems and formulas to find missing segment lengths</p> <p>find the circumference, arc length, and areas of circles and sectors</p> <p>solve real-world problems using circumference and area of a circle</p>	<p>Central Angles</p> <p>Inscribed Angles</p> <p>Major Arc</p> <p>Minor Arc</p> <p>Chord,</p> <p>Secant,</p> <p>Tangent</p> <p>Circumference</p> <p>Arc Length</p> <p>Area of a Circle</p> <p>Sector of a Circle</p>

UNIT/ORGANIZING PRINCIPLE: Equations of Circles			Pacing: 4 th 9-weeks days 178-180	
Essential Question: How can the equation of circle and its graph be used to solve problems?			Big Idea : Circles	
Concepts/ Content	Learning Target/Skills	Benchmarks	Essential Content and Understanding	Terminology
Equation of a Circle	<p>Given the center and the <u>radius</u>, find the <u>equation</u> of a <u>circle</u> in the <u>coordinate plane</u> or given the <u>equation</u> of a <u>circle</u> in center-radius form, state the center and the <u>radius</u> of the <u>circle</u>.</p> <p>Given the <u>equation</u> of a <u>circle</u> in center-radius form or given the center and the <u>radius</u> of a <u>circle</u>, sketch the graph of the <u>circle</u>.</p>	<p>MA.912.G.6.6 moderate</p> <p>MA.912.G.6.7 moderate</p>	<p>given the equation of a circle, identify the center and the radius</p> <p>write the equation of a circle given the radius and the center</p> <p>in the coordinate plane, identify the center and radius and write the equation of the circle</p> <p>graph the equation of a circle on the coordinate plane given the equation or the radius and center of the circle</p> <p>identify if a given point is on the circle or on the exterior/interior of a circle</p> <p>write the equation of circle, given the coordinates of the center and a point on the circle</p>	<p>Center</p> <p>Radius</p> <p>Distance Formula</p> <p>Interior of Circle</p> <p>Exterior of Circle</p>

UNIT/ORGANIZING PRINCIPLE: Additional Learning Strategies **Pacing: Used Throughout the Course**

Essential Question: Can the student use appropriate language arts strategies to achieve success in mathematics? **Big Idea : Learning Strategies**

Concepts/ Content	Learning Target/Skills	Benchmarks	Essential Content and Understanding	Terminology
N/A	<p>The student will use new vocabulary that is introduced and taught directly;</p> <p>The student will listen to, read, and discuss familiar and conceptually challenging text;</p> <p>The student will relate new vocabulary to familiar words;</p> <p>The student will use new vocabulary that is introduced and taught directly;</p> <p>The student will listen to, read, and discuss familiar and conceptually challenging text;</p> <p>The student will relate new vocabulary to familiar words;</p> <p>Use a variety of problem-solving strategies, such as drawing a diagram, making a <u>chart</u>, guess-and-check, solving a simpler problem, writing an <u>equation</u>, and working backwards.</p> <p>Determine whether a solution is reasonable in the</p>	<p>LA.1112.1.6.1</p> <p>LA.1112.1.6.2</p> <p>LA.1112.1.6.5</p> <p>LA.910.1.6.1</p> <p>LA.910.1.6.2</p> <p>LA.910.1.6.5</p> <p>MA.912.G.8.2 moderate</p> <p>MA.912.G.8.3</p>	<p>The student will use new vocabulary that is introduced and taught directly.</p> <p>The student will listen to, read, and discuss familiar and conceptually challenging text.</p> <p>The student will relate new vocabulary to familiar words.</p> <p>The student will use new vocabulary that is introduced and taught directly.</p> <p>The student will listen to, read, and discuss familiar and conceptually challenging text.</p> <p>The student will relate new vocabulary to familiar words.</p>	N/A

	context of the original situation.	moderate	Demonstrate and use a variety of problem solving strategies to include diagramming, charting, equation writing and solving, trial and error. Determine if a solution is reasonable based on the given situation.	
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