

Scope and Sequence
Mathematics
Accelerated Geometry 300

Description: The course is designed to stress relationships between figures in 2 and 3 dimensions, transformational geometry, parallel and perpendicular lines, circles, congruent and similar polygons, coordinate geometry, right triangle trigonometry and measurement formulas. In the accelerated course students will pursue topics in greater depth with increased focus on applications and proofs. The first semester is completely non-calculator. For the second semester a scientific or graphing calculator is necessary.

Departmental assessments are given to measure individual student, class, and grade level achievement in math. Data are collected by each teacher and used to monitor progress and make plans for instruction. At the grade level, the data are used to monitor and adjust curriculum and instruction. End of quarter, end of semester, and/or end of course exams may be used. Students are expected to complete classroom and daily homework assignments and to earn satisfactory grades on tests and quizzes. Students who plan to take Algebra 2 Honors need to earn an average grade of B- or higher each semester.

Unit Name/Description	Content and/or Skills
Introduction to Geometry	Measure segments and angles Recognize geometry is based on deductive structure, and identify undefined terms, postulates and definitions Recognize and use conditional statements and negation of a statement Recognize and use the converse, inverse and contrapositive of a statement Use the chain rule to draw conclusions Introduction to proofs Identify and use midpoints, bisectors of segments, trisection points and trisectors of segments Identify and use angle bisectors and angle trisectors Solve probability problems
Basic Concepts and Proofs	Understand the concept of perpendicularity

	<p>Recognize and use complementary and supplementary angles</p> <p>Be able to draw conclusions</p> <p>Be able to prove congruent supplements and complements</p> <p>Apply addition and subtraction properties</p> <p>Apply multiplication and division properties</p> <p>Apply transitive and substitution properties</p> <p>Recognize and use vertical angles and opposite rays</p>
Congruent Triangles	<p>Accurately identify the corresponding parts of congruent figures</p> <p>Identify and use the three ways to prove triangles congruent</p> <p>Apply CPCTC</p> <p>Recognize basic properties of circles</p> <p>Identify medians, altitudes and auxiliary lines of triangles</p> <p>Use overlapping triangles in proofs</p> <p>Name the various types of triangles and their parts</p> <p>Apply and use the angle-side theorems</p> <p>Use the HL Postulate to prove right triangles congruent</p>
Lines in the Plane	<p>Use detours and midpoints in proofs</p> <p>Apply the midpoint formula</p> <p>Draw diagrams for proofs presented in words</p> <p>Prove that two angles are right angles</p> <p>Recognize and prove the equidistance theorems</p> <p>Use coordinate geometry</p>
Parallel Lines and Related Figures	<p>Prove that lines are parallel</p> <p>Prove angles congruent that are associated with parallel lines</p> <p>Understand and use parallel lines proofs</p> <p>Recognize and understand four-sided polygons and properties of quadrilaterals</p>

	Proving that figures are special quadrilaterals
Midterm	Departmental Review and Exam
Polygons	<p>Apply formulas about interior and exterior angles of polygons</p> <p>Recognize regular polygons</p> <p>Recognize and work with ratios and proportions</p> <p>Calculate geometric means</p> <p>Identify the characteristics of similar figures</p> <p>Use several methods to prove triangles are similar</p> <p>Solve similarity word problems</p> <p>Use three theorems involving proportions</p>
The Pythagorean Theorem	<p>Simplify radical expressions and solve quadratic equations</p> <p>Identify the relationship between the parts of a right triangle when an altitude is drawn to the hypotenuse</p> <p>Use the pythagorean theorem and its converse</p> <p>Know and use the families of right triangles</p> <p>Use the distance formula to compute lengths of segments</p> <p>Identify the ratio of side lengths of special right triangles (30-60-90 and 45-45-90)</p> <p>Apply the pythagorean theorem to solid figures</p> <p>Understand three basic trigonometric relationships</p> <p>Use trigonometric ratios to solve right triangles</p>
Circles	<p>Identify the characteristics of circles and understand the basic properties and definitions</p> <p>Apply the relationship between congruent chords of a circle</p> <p>Identify the different types of arcs of a circle, be able to determine the measure of an arc and recognize congruent arcs</p> <p>Identify secant and tangent lines and segments</p> <p>Distinguish between two types of tangent circles</p>

	<p>Recognize common internal and common external tangents</p> <p>Determine the measure of central angles, inscribed and tangent-chord angles, chord-chord angles, secant-secant, secant-tangent, and tangent-tangent angles</p> <p>Recognize inscribed and circumscribed polygons, apply the relationship between opposite angles of an inscribed quadrilateral and identify the characteristics of an inscribed parallelogram</p> <p>Apply the power theorems</p> <p>Determine the circumference and arc length of a circle</p>
Area	<p>Understanding the concept of area and use the basic properties of area</p> <p>Find areas of parallelograms and triangles</p> <p>Find the area of a trapezoid</p> <p>Find the areas of kites and related figures</p> <p>Find the areas of regular polygons</p> <p>Find the ratios of areas by calculating and comparing the areas</p> <p>Find the areas of figures by using Hero's and Brahmagupta's Formulas</p>
Surface Area and Volume	<p>Find the surface area of pyramids</p> <p>Find the surface area of circular solids</p> <p>Find the volumes of prisms and cylinders</p> <p>Find the volumes of pyramids and cones</p>
Final Exam	Departmental Review and Exam