

School District of Loyal

Geometry

Grade: 10th grade

Student Learning Targets



Class: Geometry

Students who demonstrate understanding can:

WI State Standards	Standard:	Student Learning Targets:
M.G.CO.C.9	<ul style="list-style-type: none"> ● Prove theorems about lines and angles. <ul style="list-style-type: none"> ○ Vertical angles are congruent, parallel lines and transversals, alternate interior angles, corresponding angles, perpendicular bisectors. 	<p>Students will be able to:</p> <ul style="list-style-type: none"> ● I can classify angles and draw angles using a protractor. ● I can write and solve equations involving angle relationships. ● I can use congruence and the segment addition postulate to find missing lengths in line segments. ● I can identify, explain and prove the relationships formed when a transversal crosses parallel lines.
M.G.GPE.B.4 M.G.GPE.B.5 M.G.GPE.B.7	<ul style="list-style-type: none"> ● Use coordinates to prove simple geometric theorems algebraically. ● Prove slope criteria for parallel and perpendicular lines and use them to solve geometric problems. ● Use coordinates to compute perimeters of polygons and areas of triangles and rectangles using distance formula. 	<p>Students will be able to:</p> <ul style="list-style-type: none"> ● I can apply the midpoint formula to solve problems in the coordinate plane involving distance. ● I can find the perimeter and area of polygons. ● I can find the perimeter and area of a figure on the coordinate plane using the distance formula. ● I can prove whether or not two lines are parallel. ● I can define a perpendicular bisector of a line segment and prove if lines are perpendicular. ● I can use slope to identify, write and use equations of parallel lines. ● I can write the equation of a line that is perpendicular to a given line.
M.G.CO.B.8	<ul style="list-style-type: none"> ● Explain the criteria for triangle congruence (ASA, SAS,SSS). 	<p>Students will be able to:</p>

<p>M.G.CO.C.10 M.G.SRT.B.4</p>	<ul style="list-style-type: none"> ● Prove theorems about triangles. <ul style="list-style-type: none"> ○ Theorems include: triangle proportionality, Pythagorean Theorem, measure of interior angles, base angles of isosceles triangles, medians, perpendicular bisectors and angle bisectors of a triangle. 	<ul style="list-style-type: none"> ● I can use congruence of corresponding parts to prove triangles are congruent. ● I can determine congruence based on corresponding angles and corresponding sides. ● I can prove theorems about triangles angles. ● I can construct perpendicular bisectors and use the point of concurrency to solve for parts of a triangle. ● I can prove that angle bisectors are concurrent and use the point of concurrency to solve for parts of a triangle. ● I can construct medians to find centroids and solve for parts of a triangle. ● I can construct midsegments and prove the triangle midsegment theorem. ● I can decide when three lengths can form a triangle. ● I can determine the possible ranges of side lengths for the third side of a triangle. ● I can order and compare the side lengths and angle measures in a triangle.
<p>M.G.CO.C.11</p>	<ul style="list-style-type: none"> ● Prove theorems about parallelograms. 	<p>Students will be able to:</p> <ul style="list-style-type: none"> ● can prove and use properties and conditions of parallelograms. ● I can prove and use properties of squares, rectangles, and rhombuses. ● I can prove and use conditions for rectangles, rhombuses, and squares. ● I can apply theorems about trapezoids and kites. ● Using the properties of each quadrilateral, I can determine the type of quadrilateral on a coordinate grid using the midpoint formula, distance formula, and slope.

<p>M.G.SRT.C.6</p> <p>M.G.SRT.C.8</p>	<ul style="list-style-type: none"> • Understand that by similarity, side ratios in right triangles are properties of the angles in the triangle, leading to definitions of trigonometric ratios for acute angles. • Use trigonometric ratios and Pythagorean Theorem to solve right triangles in applied problems. 	<p>Students will be able to:</p> <ul style="list-style-type: none"> • I can define what it means for shapes to be similar. • I can identify similar right triangles. • I can apply the geometric means theorems. • I can recognize Pythagorean triples. • I can solve for missing side lengths and angle measures using tangent, inverse tangent and properties of similar triangles. • I can apply sine and cosine ratios to find side lengths and angle measures in right triangles. • I can use the pythagorean theorem to find side lengths and angle measures of special right triangles.
<p>M.G.C.A.1</p> <p>M.G.C.B.2</p> <p>M.G.GPEA.A.1</p>	<ul style="list-style-type: none"> • Identify and describe relationships among inscribed angles, radii, and chords. Prove properties of angles for a quadrilateral inscribed in a circle. • Derive using similarity the fact that the length of the arc intercepted by an angle is proportional to the radius and define the radian measure of the angle as the constant of proportionality; derive the formula for the area of a sector. • Derive the equation of a circle of given center and radius and complete the square to find the center and radius of a circle given by an equation. 	<p>Students will be able to:</p> <ul style="list-style-type: none"> • I can determine the measures of central angles, inscribed angles, and arcs of a circle. • I can apply properties of angles of quadrilateral inscribed in a circle to prove theorems and solve problems. • I can use tangents of a circle theorem to solve mathematical and real world problems. • I can justify the formula for circumference and area of a circle. • I can apply circumference and area theorems of a circle to solve mathematical problems. • I can convert arc length between degree and radian measures. • I can determine the area of a sector of a circle. • I can determine the area of a sector that has different central angles and radii.