

Curriculum Map: Geometry

Course: GEOMETRY Sub-topic: Geometry

Grade(s): 9 to 12

Course Description: The principal aim in the study of Geometry is to develop and apply the properties of points, lines, and planes and the figures they form, properties of circles, and right triangle trigonometry. The relationships of triangles, quadrilaterals, and other polygons are extended to applications of area and volume. Inductive and deductive reasoning is stressed throughout the course.

Unit: Unit 1: Basics of Geometry

STANDARDS: STANDARDS

STATE: [Pennsylvania State Anchors \(2010\)](#)

[M6.C.1.2.2 \(Advanced\)](#) Identify, draw and/or label points, planes, lines, line segments, rays, angles and vertices.

[M8.C.1.1.2 \(Advanced\)](#) Define, identify and/or use properties of angles formed by intersecting lines (complementary, supplementary, adjacent and/or vertical angles).

Topic: 1.3: Points, Lines, Planes

Minutes for Topic: 86

Topic: 1.4: Intersections

Minutes for Topic: 86

Topic: 1.5: Segments and Their Measures

Minutes for Topic: 86

Topic: 2.1: Segment Bisectors and Midpoints

Minutes for Topic: 258

Topic: 1.6/2.2: Angles and Angle Bisectors

Minutes for Topic: 172

Topic: 2.3-2.4: Complementary, Supplementary, Vertical Angles

Minutes for Topic: 172

Topic: Unit 1 Review and Test

Minutes for Topic: 172

Unit: Unit 2: Parallel and Perpendicular Lines

STANDARDS: STANDARDS

STATE: [Pennsylvania State Anchors \(2010\)](#)

[M8.C.1.1.2 \(Advanced\)](#) Define, identify and/or use properties of angles formed by intersecting lines (complementary, supplementary, adjacent and/or vertical angles).

[M8.C.1.1.3 \(Advanced\)](#) Define, identify and/or use properties of angles formed when two parallel lines are cut by a transversal (alternate interior, alternate exterior, vertical corresponding).

Topic: 3.1/3.2: Basics of Parallel and Perpendicular Lines

Minutes for Topic: 86

Topic: 3.3/3.4: Parallel Lines and Transversals

Minutes for Topic: 172

Topic: 3.5: Showing Lines are Parallel

Minutes for Topic: 86

Topic: 3.6: Using Parallel and Perpendicular Lines

Minutes for Topic: 86

Topic: Unit 2 Review and Test

Minutes for Topic: 172

Unit: Unit 3: Triangle Relationships

STANDARDS: STANDARDS

STATE: Pennsylvania State Anchors (2010)

M11.C.1.2 (Advanced)	Recognize and/or apply properties of angles, triangles and quadrilaterals.	
M11.C.1.2.1 (Advanced)	Identify and/or use properties of triangles (e.g., medians, altitudes, angle bisectors, side/angle relationships, Triangle Inequality Theorem).	
M11.C.1.2.3 (Advanced)	Identify and/or use properties of isosceles and equilateral triangles	
M11.C.1.4 (Advanced)	Solve problems involving right triangles using the Pythagorean Theorem.	
M11.C.1.4.1 (Advanced)	Find the measure of a side of a right triangle using the Pythagorean Theorem (Pythagorean Theorem included on the reference sheet).	

Topic: 4.1-4.3: Classifying Triangles and their Angle Measures

Minutes for Topic: 172

Topic: 4.7: Triangle Inequalities (What makes a triangle/ordering sides and angles)

Minutes for Topic: 86

Topic: 4.6: Medians of Triangles

Minutes for Topic: 172

Topic: 4.4/4.5: Pythagorean Theorem (and its Converse) and Distance Formula

Minutes for Topic: 258

Topic: Unit 3 Review and Test

Minutes for Topic: 172

Unit: Unit 4: Congruent Triangles

STANDARDS: STANDARDS

STATE: Pennsylvania State Anchors (2010)

M11.C.1.2 (Advanced)	Recognize and/or apply properties of angles, triangles and quadrilaterals.	
M11.C.1.2.1 (Advanced)	Identify and/or use properties of triangles (e.g., medians, altitudes, angle bisectors, side/angle relationships, Triangle Inequality Theorem).	
M11.C.1.2.3 (Advanced)	Identify and/or use properties of isosceles and equilateral triangles	
M11.C.1.3.1 (Advanced)	Identify and/or use properties of congruent and similar polygons or solids.	
M11.C.1.4 (Advanced)	Solve problems involving right triangles using the Pythagorean Theorem.	
M11.C.1.4.1 (Advanced)	Find the measure of a side of a right triangle using the Pythagorean Theorem (Pythagorean Theorem included on the reference sheet).	

Topic: 5.1/5.2: Congruent Triangles and SSS/SAS

Minutes for Topic: 86

Topic: 5.3/5.4: Proving Congruent Triangles (AAS/ASA/HL)

Minutes for Topic: 172

Topic: 5.5: Proofs Involving Congruent Triangles

Minutes for Topic: 172

Topic: 5.6: Using Angle Bisectors and Perpendicular Bisectors involving Triangles

Minutes for Topic: 86

Topic: Unit 4 Review and Test

Minutes for Topic: 172

Unit: Unit 5: Similarity

STANDARDS: STANDARDS

STATE: Pennsylvania State Anchors (2010)

M11.C.1.2	Recognize and/or apply properties of angles, triangles and	
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(Advanced)	quadrilaterals.	
M11.C.1.2.1 (Advanced)	Identify and/or use properties of triangles (e.g., medians, altitudes, angle bisectors, side/angle relationships, Triangle Inequality Theorem).	
M11.C.1.2.3 (Advanced)	Identify and/or use properties of isosceles and equilateral triangles	
M11.C.1.3 (Advanced)	Use properties of congruence, correspondence and similarity in problem-solving settings involving two- and three-dimensional figures.	
M11.C.1.3.1 (Advanced)	Identify and/or use properties of congruent and similar polygons or solids.	

Topic: 7.1: Ratios and Proportions

Minutes for Topic: 86

Topic: 7.2: Similar Polygons

Minutes for Topic: 86

Topic: 7.6: Dilations

Minutes for Topic: 86

Topic: 7.3/7.4: Proving Similar Triangles (AA,SSS,SAS)

Minutes for Topic: 172

Topic: 7.5: Applications and Other Proportions

Minutes for Topic: 172

Topic: 7.6: Right Triangle Similarity

Minutes for Topic: 172

Topic: Unit 5 Review and Test

Minutes for Topic: 172

Unit: Unit 6: Quadrilaterals

STANDARDS: STANDARDS

STATE: Pennsylvania State Anchors (2010)

M11.C.1 (Advanced) Analyze characteristics and properties of two- and three-dimensional geometric shapes and demonstrate understanding of geometric relationships.

M11.C.1.2 (Advanced) Recognize and/or apply properties of angles, triangles and quadrilaterals.

M11.C.1.2.2 (Advanced) Identify and/or use properties of quadrilaterals (e.g., parallel sides, diagonals, bisectors, congruent sides/angles and supplementary angles).

Topic: 6.1/8.1/8.2: Classify and Angles of Polygons

Minutes for Topic: 172

Topic: 6.2/6.3: Properties of Parallelograms

Minutes for Topic: 86

Topic: 6.4: Rhombus/Rectangles/Squares

Minutes for Topic: 172

Topic: 6.5: Trapezoids

Minutes for Topic: 172

Topic: 6.6: Kites

Minutes for Topic: 86

Topic: Unit 6 Review and Test

Minutes for Topic: 172

Unit: Unit 7: Area of 2D Figures

STANDARDS: STANDARDS

STATE: Pennsylvania State Anchors (2010)

M11.C.1 (Advanced) Analyze characteristics and properties of two- and three-dimensional geometric shapes and demonstrate understanding

	of geometric relationships.	
M11.C.1.2 (Advanced)	Recognize and/or apply properties of angles, triangles and quadrilaterals.	
M11.C.1.2.2 (Advanced)	Identify and/or use properties of quadrilaterals (e.g., parallel sides, diagonals, bisectors, congruent sides/angles and supplementary angles).	
M11.C.3.1 (Advanced)	Solve problems using analytic geometry.	

Topic: 8.3-8.6: Area of 2D Figures

Minutes for Topic: 86

Topic: 8.7: Area of Regular Polygons and Circles

Minutes for Topic: 86

Topic: Unit 7 Review and Test

Minutes for Topic: 172

Unit: Unit 8: Surface Area and Volume

STANDARDS: STANDARDS

STATE: Pennsylvania State Anchors (2010)

M11.C.1 (Advanced)	Analyze characteristics and properties of two- and three-dimensional geometric shapes and demonstrate understanding of geometric relationships.	
M11.C.1.1.1 (Advanced)	Identify and/or use the properties of a radius, diameter and/or tangent of a circle (given numbers should be whole.)	
M11.C.1.2 (Advanced)	Recognize and/or apply properties of angles, triangles and quadrilaterals.	
M11.C.1.2.2 (Advanced)	Identify and/or use properties of quadrilaterals (e.g., parallel sides, diagonals, bisectors, congruent sides/angles and supplementary angles).	
M11.C.1.2.3 (Advanced)	Identify and/or use properties of isosceles and equilateral triangles	
M11.C.1.3 (Advanced)	Use properties of congruence, correspondence and similarity in problem-solving settings involving two- and three-dimensional figures.	
M11.C.1.4 (Advanced)	Solve problems involving right triangles using the Pythagorean Theorem.	
M11.C.1.4.1 (Advanced)	Find the measure of a side of a right triangle using the Pythagorean Theorem (Pythagorean Theorem included on the reference sheet).	
M11.C.3.1 (Advanced)	Solve problems using analytic geometry.	

Topic: 9.1/9.2/9.3: Surface Area and Volume of Prisms and Cylinders

Minutes for Topic: 172

Topic: 9.4/9.5: Pyramids and Cones

Minutes for Topic: 172

Topic: 9.6: Surface Area and Volume of Spheres

Minutes for Topic: 86

Topic: 9.7: Surface Area and Volume of Composites

Minutes for Topic: 172

Topic: Unit 8 Review and Test

Minutes for Topic: 172

Unit: Unit 9: Circles

STANDARDS: STANDARDS

STATE: Pennsylvania State Anchors (2010)

M11.C.1.1 (Advanced)	Identify and/or use parts of circles and segments associated with circles.	
M11.C.1.1.1 (Advanced)	Identify and/or use the properties of a radius, diameter and/or tangent of a circle (given numbers should be whole.)	
M11.C.1.1.2 (Advanced)	Identify and/or use the properties of arcs, semicircles, inscribed angles and/or central angles.	

Topic: 11.1: Parts of Circles

Minutes for Topic: 86

Topic: 11.2: Properties of Tangents

Minutes for Topic: 86

Topic: 11.3/11.4: Arc Length and Angles of Circles

Minutes for Topic: 172

Topic: 11.5: Inscribed Angles and Chords

Minutes for Topic: 86

Topic: 11.6: Properties of Chords and Tangents

Minutes for Topic: 86

Topic: Unit 9 Review and Test

Minutes for Topic: 172

Unit: Unit 10: Special Right Triangles and Basic Trigonometry

Topic: Special Right Triangles

Minutes for Topic: 86

Topic: Right Triangle Trigonometry

Minutes for Topic: 258

Unit: Unit 11: Final Exam

Topic: Final Exam Review

Minutes for Topic: 86

Topic: Final Exam

Minutes for Topic: 120