

CCGPS ANALYTIC GEOMETRY CONTENT MAP

Unit 1: Similarity, Congruence, and Proofs			
Lesson	Sub-lesson number	Title	Standard(s)
Lesson 1	Investigating Properties of Dilations		
	1.1.1	Investigating Properties of Parallelism and the Center	MCC9–12.G.SRT.1a
	1.1.2	Investigating Scale Factors	MCC9–12.G.SRT.1b
Lesson 2	Constructing Lines, Segments, and Angles		
	1.2.1	Copying Segments and Angles	MCC9–12.G.CO.12
	1.2.2	Bisecting Segments and Angles	MCC9–12.G.CO.12
	1.2.3	Constructing Perpendicular and Parallel Lines	MCC9–12.G.CO.12
Lesson 3	Constructing Polygons		
	1.3.1	Constructing Equilateral Triangles Inscribed in Circles	MCC9–12.G.CO.13
	1.3.2	Constructing Squares Inscribed in Circles	MCC9–12.G.CO.13
	1.3.3	Constructing Regular Hexagons Inscribed in Circles	MCC9–12.G.CO.13
Lesson 4	Exploring Congruence		
	1.4.1	Describing Rigid Motions and Predicting the Effects	MCC9–12.G.CO.6
	1.4.2	Defining Congruence in Terms of Rigid Motions	MCC9–12.G.CO.6
Lesson 5	Congruent Triangles		
	1.5.1	Triangle Congruency	MCC9–12.G.CO.7
	1.5.2	Explaining ASA, SAS, and SSS	MCC9–12.G.CO.8
Lesson 6	Defining and Applying Similarity		
	1.6.1	Defining Similarity	MCC9–12.G.SRT.2
	1.6.2	Applying Similarity Using the Angle-Angle (AA) Criterion	MCC9–12.G.SRT.3
Lesson 7	Proving Similarity		
	1.7.1	Proving Triangle Similarity Using Side-Angle-Side (SAS) and Side-Side-Side (SSS) Similarity	MCC9–12.G.SRT.4
	1.7.2	Working with Ratio Segments	MCC9–12.G.SRT.4
	1.7.3	Proving the Pythagorean Theorem Using Similarity	MCC9–12.G.SRT.4
	1.7.4	Solving Problems Using Similarity and Congruence	MCC9–12.G.SRT.5
Lesson 8	Proving Theorems About Lines and Angles		
	1.8.1	Proving the Vertical Angles Theorem	MCC9–12.G.CO.9
	1.8.2	Proving Theorems About Angles in Parallel Lines Cut by a Transversal	MCC9–12.G.CO.9
Lesson 9	Proving Theorems About Triangles		
	1.9.1	Proving the Interior Angle Sum Theory	MCC9–12.G.CO.10
	1.9.2	Proving Theorems About Isosceles Triangles	MCC9–12.G.CO.10
	1.9.3	Proving the Midsegment of a Triangle	MCC9–12.G.CO.10
Lesson 10	Proving Theorems About Parallelograms		
	1.10.1	Proving Properties of Parallelograms	MCC9–12.G.CO.11
	1.10.2	Proving Properties of Special Quadrilaterals	MCC9–12.G.CO.11
	Unit 2: Right Triangle Trigonometry		
Lesson	Sub-lesson number	Title	Standard(s)
Lesson 1	Exploring Trigonometric Ratios		
	2.1.1	Defining Trigonometric Ratios	MCC9–12.G.SRT.6
	2.1.2	Exploring Sine and Cosine As Complements	MCC9–12.G.SRT.7
Lesson 2	Applying Trigonometric Ratios		
	2.2.1	Calculating Sine, Cosine, and Tangent	MCC9–12.G.SRT.8
	2.2.2	Calculating Cosecant, Secant, and Cotangent	MCC9–12.G.SRT.8
	2.2.3	Problem Solving with the Pythagorean Theorem and Trigonometry	MCC9–12.G.SRT.8
Unit 3: Circles and Volume			
Lesson	Sub-lesson number	Title	Standard(s)
Lesson 1	Introducing Circles		
	3.1.1	Similar Circles and Central and Inscribed Angles	MCC9–12.G.C.1 MCC9–12.G.C.2
	3.1.2	Chord Central Angles Conjecture	MCC9–12.G.C.2
	3.1.3	Properties of Tangents of a Circle	MCC9–12.G.C.2
Lesson 2	Inscribed Polygons and Circumscribed Triangles		
	3.2.1	Constructing Inscribed Circles	MCC9–12.G.C.3
	3.2.2	Constructing Circumscribed Circles	MCC9–12.G.C.3
	3.2.3	Proving Properties of Inscribed Quadrilaterals	MCC9–12.G.C.3

Lesson 3	Constructing Tangent Lines		
	3.3.1	Constructing Tangent Lines	MCC9–12.G.C.4 (+)
Lesson 4	Finding Arc Lengths and Areas of Sectors		
	3.4.1	Defining Radians	MCC9–12.G.C.5
	3.4.2	Deriving the Formula for the Area of a Sector	MCC9–12.G.C.5
Lesson 5	Explaining and Applying Area and Volume Formulas		
	3.5.1	Circumference and Area of a Circle	MCC9–12.G.GMD.1
			MCC9–12.G.GMD.1
	3.5.2	Volumes of Cylinders, Pyramids, and Cones	MCC9–12.G.GMD.3* MCC8.G.9* (Transition Standard)
	3.5.3	Volumes of Spheres and Other Solid Figures	MCC9–12.G.GMD.2 (+) MCC9–12.G.GMD.3* MCC8.G.9* (Transition Standard)
Unit 4: Extending the Number System			
Lesson	Sub-lesson number	Title	Standard(s)
Lesson 1	Working with the Number System		
	4.1.1	Defining, Rewriting, and Evaluating Rational Exponents	MCC9–12.N.RN.1 MCC9–12.N.RN.2
	4.1.2	Rational and Irrational Numbers and Their Properties	MCC9–12.N.RN.2 MCC9–12.N.RN.3
Lesson 2	Operating with Polynomials		
	4.2.1	Adding and Subtracting Polynomials	MCC9–12.A.APR.1
	4.2.2	Multiplying Polynomials	MCC9–12.A.APR.1
Lesson 3	Operating with Complex Numbers		
	4.3.1	Defining Complex Numbers, i , and i^2	MCC9–12.N.CN.1
	4.3.2	Adding and Subtracting Complex Numbers	MCC9–12.N.CN.2
	4.3.3	Multiplying Complex Numbers	MCC9–12.N.CN.2
	4.3.4	Dividing Complex Numbers	MCC9–12.N.CN.3 (+)
Unit 5: Quadratic Functions			
Lesson	Sub-lesson number	Title	Standard(s)
Lesson 1	Interpreting Structure in Expressions		
	5.1.1	Identifying Terms, Factors, and Coefficients	MCC9–12.A.SSE.1a*
	5.1.2	Interpreting Complicated Expressions	MCC9–12.A.SSE.1b*
Lesson 2	Creating and Solving Quadratic Equations in One Variable		
	5.2.1	Taking the Square Root of Both Sides	MCC9–12.N.CN.7 MCC9–12.A.CED.1* MCC9–12.A.REI.4b
	5.2.2	Factoring	MCC9–12.A.SSE.2 MCC9–12.A.CED.1* MCC9–12.A.REI.4b
	5.2.3	Completing the Square	MCC9–12.A.SSE.2 MCC9–12.N.CN.7 MCC9–12.A.CED.1* MCC9–12.A.REI.4a MCC9–12.A.REI.4b
	5.2.4	Applying the Quadratic Formula	MCC9–12.A.CED.1* MCC9–12.A.REI.4a MCC9–12.A.REI.4b
	5.2.5	Solving Quadratic Inequalities	MCC9–12.A.SSE.2 MCC9–12.N.CN.7 MCC9–12.A.CED.1* MCC9–12.A.REI.4b

Creating Quadratic Equations in Two or More Variables			
Lesson 3	5.3.1	Creating and Graphing Equations Using Standard Form	MCC9–12.A.CED.2* MCC9–12.A.SSE.3a*
	5.3.2	Creating and Graphing Equations Using the x -intercepts	MCC9–12.A.CED.2* MCC9–12.A.SSE.3a*
	5.3.3	Creating and Graphing Equations Using Vertex Form	MCC9–12.A.CED.2* MCC9–12.A.SSE.3b*
	5.3.4	Rearranging Formulas	MCC9–12.A.CED.4*
Solving Systems of Equations			
Lesson 4	5.4.1	Solving Systems Graphically	MCC9–12.A.REI.7
	5.4.2	Solving Systems Algebraically	MCC9–12.A.REI.7
Interpreting Quadratic Functions			
Lesson 5	5.5.1	Interpreting Key Features of Quadratic Functions	MCC9–12.F.IF.4*
	5.5.2	Identifying the Domain of a Quadratic Function	MCC9–12.F.IF.5*
	5.5.3	Identifying the Average Rate of Change	MCC9–12.F.IF.6*
Analyzing Quadratic Functions			
Lesson 6	5.6.1	Graphing Quadratic Functions	MCC9–12.F.IF.7a*
	5.6.2	Writing Equivalent Forms of Quadratic Functions	MCC9–12.F.IF.8a
	5.6.3	Comparing Properties of Functions Given in Different Forms	MCC9–12.F.IF.9 MCC9–12.F.LE.3*
Building Functions			
Lesson 7	5.7.1	Building Functions from Context	MCC9–12.F.BF.1a*
	5.7.2	Operating on Functions	MCC9–12.F.BF.1b*
Transforming Functions			
Lesson 8	5.8.1	Replacing $f(x)$ with $f(x) + k$ and $f(x + k)$	MCC9–12.F.BF.3
	5.8.2	Replacing $f(x)$ with $k \cdot f(x)$ and $f(k \cdot x)$	MCC9–12.F.BF.3
Fitting Quadratic Functions to Data			
Lesson 9	5.9.1	Solving Problems Given Functions Fitted to Data	MCC9–12.S.ID.6a*
	5.9.2	Fitting a Function to Data	MCC9–12.S.ID.6a*
Unit 6: Modeling Geometry			
Lesson	Sub-lesson number	Title	Standard(s)
Lesson 1	Deriving Equations		
	6.1.1	Deriving the Equation of a Circle	MCC9–12.G.GPE.1
	6.1.2	Deriving the Equation of a Parabola	MCC9–12.G.GPE.2
Lesson 2	Using Coordinates to Prove Geometric Theorems About Circles and Parabolas		
	6.2.1	Using Coordinates to Prove Geometric Theorems About Circles and Parabolas	MCC9–12.G.GPE.4
Lesson 3	Solving Systems of Linear Equations and Circles		
	6.3.1	Solving Systems of Linear Equations and Circles	MCC9–12.A.REI.7
Unit 7: Applications of Probability			
Lesson	Sub-lesson number	Title	Standard(s)
Lesson 1	Events		
	7.1.1	Describing Events	MCC9–12.S.CP.1*
	7.1.2	The Addition Rule	MCC9–12.S.CP.7*
	7.1.3	Understanding Independent Events	MCC9–12.S.CP.2*
Lesson 2	Conditional Probability		
	7.2.1	Introducing Conditional Probability	MCC9–12.S.CP.3* MCC9–12.S.CP.5* MCC9–12.S.CP.6*
	7.2.2	Using Two-Way Frequency Tables	MCC9–12.S.CP.4* MCC9–12.S.CP.5* MCC9–12.S.CP.6*