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Standard ID	Description	Location	Module	Topic (Textbook)/ Unit(MATHia Software)	Lesson (Textbook) / Workspace (MATHia Software)
G.CO.A.1	Know precise definitions of angle, circle, perpendicular line, parallel line, and line segment, based on the undefined notions of point, line, plane, distance along a line, and distance around a circular arc.	Textbook	1: Reasoning With Shapes	1: Using a Rectangular Coordinate System	2: Hip to Be Square: Constructing a Coordinate Plane pp. M1-17A–M1-31
				3: Rigid Motions on a Plane	1: Put Your Input In, Take Your Output Out: Geometric Components of Rigid Motions pp. M1-205A–M1-216
		MATHia Software	1: Reasoning with Shapes	1: Lines, Rays, Segments, and Angles	1: Naming Lines, Rays, Segments, and Angles
				2: Establishing Congruence	3: Introduction to Proofs with Segments and Angles
G.CO.A.2	Represent transformations in the plane in multiple ways, including technology. Describe transformations as functions that take points in the plane (pre-image) as inputs and give other points (image) as outputs. Compare transformations that preserve distance and angle to those that do not (e.g., translation versus horizontal stretch).	Textbook	1: Reasoning With Shapes	3: Rigid Motions on a Plane	2: Bow Thai: Translations as Functions pp. M1-217A–M1-228
					3: Staring Back at Me: Reflections as Functions pp. M1-229A–M1-242
					4: Turn Yourself Around: Rotations as Functions pp. M1-243A–M1-256
G.CO.A.3	Given a rectangle, parallelogram, trapezoid, or regular polygon, describe the rotations and reflections that carry the shape onto itself.	Textbook	1: Reasoning With Shapes	3: Rigid Motions on a Plane	5: OKEECHOBEE: Reflectional and Rotational Symmetry pp. M1-257A–M1-266
					MATHia Software
		3: Rotational Symmetry			
4: Reflectional Symmetry					
G.CO.A.4	Develop definitions of rotations, reflections, and translations in terms of angles, circles, perpendicular lines, parallel lines, and line segments.	Textbook	1: Reasoning With Shapes	3: Rigid Motions on a Plane	1: Put Your Input In, Take Your Output Out: Geometric Components of Rigid Motions pp. M1-205A–M1-216
					2: Bow Thai: Translations as Functions pp. M1-217A–M1-228
					3: Staring Back at Me: Reflections as Functions pp. M1-229A–M1-242
		MATHia Software	1: Reasoning with Shapes	5: Rigid Motion	1: Developing Definitions of Rigid Motions
4: Turn Yourself Around: Rotations as Functions pp. M1-243A–M1-256					

Standard ID	Description	Location	Module	Topic (Textbook)/ Unit(MATHia Software)	Lesson (Textbook) / Workspace (MATHia Software)
G.CO.A.5	Given a geometric figure and a rigid motion, draw the image of the figure in multiple ways, including technology. Specify a sequence of rigid motions that will carry a given figure onto another.	Textbook	1: Reasoning With Shapes	1: Using a Rectangular Coordinate System	2: Hip to Be Square: Constructing a Coordinate Plane pp. M1-17A–M1-31
		MATHia Software	1: Reasoning with Shapes	3: Rigid Motions on a Plane	3: Staring Back at Me: Reflections as Functions pp. M1-229A–M1-242 4: Turn Yourself Around: Rotations as Functions pp. M1-243A–M1-256
G.CO.B.6	Use geometric descriptions of rigid motions to transform figures and to predict the effect of a given rigid motion on a given figure; given two figures, use the definition of congruence in terms of rigid motions to determine informally if they are congruent.	Textbook	1: Reasoning With Shapes	3: Rigid Motions on a Plane	1: Put Your Input In, Take Your Output Out: Geometric Components of Rigid Motions pp. M1-205A–M1-216
			2: Establishing Congruence	1: Congruence Through Transformations	3: I Never Forget a Face: Using Triangle Congruence to Solve Problems pp. M2-39A–M2-50
G.CO.B.7	Use the definition of congruence in terms of rigid motions to show that two triangles are congruent if and only if corresponding pairs of sides and corresponding pairs of angles are congruent.	Textbook	2: Establishing Congruence	1: Congruence Through Transformations	2: ASA, SAS, and SSS: Proving Triangle Congruence Theorems pp. M2-23A–M2-38
		MATHia Software	2: Establishing Congruence	1: Triangle Congruence	1: Introduction to Triangle Congruence
G.CO.B.8	Explain how the criteria for triangle congruence (ASA, SAS, and SSS) follow from the definition of congruence in terms of rigid motions.	Textbook	2: Establishing Congruence	1: Congruence Through Transformations	2: ASA, SAS, and SSS: Proving Triangle Congruence Theorems pp. M2-23A–M2-38
		MATHia Software	2: Establishing Congruence	1: Triangle Congruence	1: Introduction to Triangle Congruence
G.CO.C.9	Prove theorems about lines and angles.	Textbook	1: Reasoning With Shapes	2: Composing and Decomposing Shapes	1: Running Circles Around Geometry: Using Circles to Make Conjectures pp. M1-111A–M1-126
			2: Establishing Congruence	2: Justifying Line and Angle Relationships	1: Proof Positive: Forms of Proof pp. M2-61A–M2-82

Standard ID	Description	Location	Module	Topic (Textbook)/ Unit(MATHia Software)	Lesson (Textbook) / Workspace (MATHia Software)
G.CO.C.9	Prove theorems about lines and angles.	Textbook	2: Establishing Congruence	2: Justifying Line and Angle Relationships	2: A Parallel Universe: Proving Parallel Line Theorems pp. M2-83A–M2-102
					4: Identical Twins: Perpendicular Bisector and Isosceles Triangle Theorems pp. M2-119A–M2-139
		MATHia Software	2: Establishing Congruence	2: Angle Properties	1: Calculating and Justifying Angle Measures
					2: Calculating Angle Measures
				3: Introduction to Proofs with Segments and Angles	3: Connecting Steps in Angle Proofs
					4: Using Angle Theorems
				4: Lines Cut by a Transversal	1: Classifying Angles Formed by Transversals
					2: Calculating Angles Formed by Transversals
					3: Calculating Angles Formed by Multiple Transversals
				5: Parallel Lines Theorems	1: Proving Parallel Lines Theorems
2: Proving the Converses of Parallel Lines Theorems					
G.CO.C.10	Prove theorems about triangles.	Textbook	1: Reasoning With Shapes	1: Using a Rectangular Coordinate System	1: The Squariest Square: From Informal to Formal Geometric Thinking pp. M1-7A–M1-16
				2: Composing and Decomposing Shapes	1: Running Circles Around Geometry: Using Circles to Make Conjectures pp. M1-111A–M1-126
					4: Tri Tri- Tri- and Separate Them: Conjectures About Triangles pp. M1-161A–M1-174
			4: What's the Point?: Points of Concurrency pp. M1-175A–M1-192		
			2: Establishing Congruence	2: Justifying Line and Angle Relationships	3: Ins and Outs: Interior and Exterior Angles of Polygons pp. M2-103A–M2-118

Standard ID	Description	Location	Module	Topic (Textbook)/ Unit(MATHia Software)	Lesson (Textbook) / Workspace (MATHia Software)
G.CO.C.10	Prove theorems about triangles.	Textbook	2: Establishing Congruence	2: Justifying Line and Angle Relationships	4: Identical Twins: Perpendicular Bisector and Isosceles Triangle Theorems pp. M2-119A-M2-139
				3: Using Congruence Theorems	1: SSS, SAS, AAS, . . . S.O.S! : Using Triangle Congruence to Determine Relationships Between Segments pp. M2-185A-M2-196
		MATHia Software	2: Establishing Congruence	1: Triangle Congruence	2: Using Triangle Congruence
				6: Proving Triangles Congruent	1: Proving Triangles Congruent using SAS and SSS
					2: Proving Triangles Congruent using AAS and ASA
					3: Proving Triangles Congruent using HL and HA
					4: Proving Theorems using Congruent Triangles
7: Triangle Theorems	1: Proving Triangle Theorems 2: Using Triangle Theorems				
G.CO.C.11	Prove theorems about parallelograms.	Textbook	1: Reasoning With Shapes	1: Using a Rectangular Coordinate System	1: The Squariest Square: From Informal to Formal Geometric Thinking pp. M1-7A-M1-16
				2: Composing and Decomposing Shapes	2: The Quad Squad: Conjectures About Quadrilaterals pp. M1-127A-M1-144
			2: Establishing Congruence	3: Using Congruence Theorems	2: Props To You: Properties of Quadrilaterals pp. M2-197A-M2-223
		MATHia Software	2: Establishing Congruence	8: Properties of Parallelograms	1: Understanding Parallelograms 2: Determining Parts of Quadrilaterals and Parallelograms
				9: Parallelogram Proofs	1: Proofs about Parallelograms
G.CO.D.12	Make formal geometric constructions with a variety of tools and methods (compass and straightedge, string, reflective devices, paper folding, dynamic geometric software, etc.).	Textbook	1: Reasoning With Shapes	1: Using a Rectangular Coordinate System	2: Hip to Be Square: Constructing a Coordinate Plane pp. M1-17A-M1-31
					3: Ts and Train Tracks: Parallel and Perpendicular Lines pp. M1-33A-M1-50
				2: Composing and Decomposing Shapes	3: Into the Ring: Constructing an Inscribed Regular Polygon pp. M1-145A-M1-160

Standard ID	Description	Location	Module	Topic (Textbook)/ Unit(MATHia Software)	Lesson (Textbook) / Workspace (MATHia Software)
G.SRT.A.1	Verify informally the properties of dilations given by a center and a scale factor.	Textbook	3: Investigating Proportionality	1: Similarity	3: Keep It in Proportion: Theorems About Proportionality pp. M3-37A–M3-64
					1: Big, Little, Big, Little: Dilating Figures to Create Similar Figures pp. M3-7A–M3-21
G.SRT.A.2	Given two figures, use the definition of similarity in terms of similarity transformations to decide if they are similar; explain using similarity transformations the meaning of similarity for triangles as the equality of all corresponding pairs of angles and the proportionality of all corresponding pairs of sides.	Textbook	3: Investigating Proportionality	1: Similarity	1: Big, Little, Big, Little: Dilating Figures to Create Similar Figures pp. M3-7A–M3-21
					2: Similar Triangles or Not?: Establishing Triangle Similarity Criteria pp. M3-23A–M3-35
G.SRT.A.3	Use the properties of similarity transformations to establish the AA criterion for two triangles to be similar.	Textbook	3: Investigating Proportionality	1: Similarity	1: Understanding Similarity
					2: Similar Triangles or Not?: Establishing Triangle Similarity Criteria pp. M3-23A–M3-35
G.SRT.B.4	Prove theorems about similar triangles.	Textbook	3: Investigating Proportionality	1: Similarity	3: Keep It in Proportion: Theorems About Proportionality pp. M3-37A–M3-64
					4: This Isn't Your Average Mean: More Similar Triangles pp. M3-65A–M3-78
G.SRT.B.5	Use congruence and similarity criteria for triangles to solve problems and to justify relationships in geometric figures.	Textbook	2: Establishing Congruence	3: Using Congruence Theorems	1: SSS, SAS, AAS, . . . S.O.S! : Using Triangle Congruence to Determine Relationships Between Segments pp. M2-185A–M2-196
			3: Investigating Proportionality	1: Similarity	4: This Isn't Your Average Mean: More Similar Triangles pp. M3-65A–M3-78
		MATHia Software	3: Investigating Proportionality	1: Similar Triangles	5: Run It Up the Flagpole: Application of Similar Triangles pp. M3-79A–M3-93
					2: Calculating Corresponding Parts of Similar Triangles
					3: Proofs Using Similar Triangles

Standard ID	Description	Location	Module	Topic (Textbook)/ Unit(MATHia Software)	Lesson (Textbook) / Workspace (MATHia Software)
G.SRT.C.6	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.	Textbook	3: Investigating Proportionality	2: Trigonometry	1: Three Angle Measure: Introduction to Trigonometry pp. M3-121A–M3-135 2: The Tangent Ratio: Tangent Ratio, Cotangent Ratio, and Inverse Tangent pp. M3-137A–M3-153 3: The Sine Ratio: Sine Ratio, Cosecant Ratio, and Inverse Sine pp. M3-155A–M3-169 4: The Cosine Ratio: Cosine Ratio, Secant Ratio, and Inverse Cosine pp. M3-171A–M3-185
		MATHia Software	3: Investigating Proportionality	2: Trigonometric Ratios	1: Introduction to Trigonometric Ratios
G.SRT.C.7	Explain and use the relationship between the sine and cosine of complementary angles.	Textbook	3: Investigating Proportionality	2: Trigonometry	5: We Complement Each Other: Complement Angle Relationships pp. M3-187A–M3-198
		MATHia Software	3: Investigating Proportionality	2: Trigonometric Ratios	2: Relating Sines and Cosines of Complementary Angles
G.SRT.C.8a	Know and use trigonometric ratios and the Pythagorean Theorem to solve right triangles in applied problems.	Textbook	3: Investigating Proportionality	2: Trigonometry	2: The Tangent Ratio: Tangent Ratio, Cotangent Ratio, and Inverse Tangent pp. M3-137A–M3-153 3: The Sine Ratio: Sine Ratio, Cosecant Ratio, and Inverse Sine pp. M3-155A–M3-169 4: The Cosine Ratio: Cosine Ratio, Secant Ratio, and Inverse Cosine pp. M3-171A–M3-185 5: We Complement Each Other: Complement Angle Relationships pp. M3-187A–M3-198
		MATHia Software	3: Investigating Proportionality	3: Right Triangles and Trigonometric Ratios	1: Using One Trigonometric Ratio to Solve Problems 2: Using Multiple Trigonometric Ratios to Solve Problems
G.SRT.C.8b	Know and use the Law of Sines and Law of Cosines to solve problems in real life situations. Recognize when it is appropriate to use each.	Textbook	3: Investigating Proportionality	2: Trigonometry	6: A Deriving Force: Deriving the Triangle Area Formula, the Law of Sines, and the Law of Cosines pp. M3-199–M3-212

Standard ID	Description	Location	Module	Topic (Textbook)/ Unit(MATHia Software)	Lesson (Textbook) / Workspace (MATHia Software)
G.C.A.1	Recognize that all circles are similar.	Textbook	1: Reasoning With Shapes	2: Composing and Decomposing Shapes	1: Running Circles Around Geometry: Using Circles to Make Conjectures pp. M1-111A–M1-126
			4: Connecting Geometric and Algebraic Descriptions	1: Circles and Volume	1: All Circles Great and Small: Similarity Relationships in Circles pp. M4-7A–M4-24
		MATHia Software	1: Reasoning with Shapes	4: Properties of Circles	1: Introduction to Circles
G.C.A.2	Identify and describe relationships among inscribed angles, radii, and chords	Textbook	2: Establishing Congruence	2: Justifying Line and Angle Relationships	5: Corners in a Round Room: Angle Relationships Inside and Outside Circles pp. M2-141A–M2-170
				3: Using Congruence Theorems	3: Three-Chord Song: Relationships Between Chords pp. M2-225A–M2-239
		MATHia Software	1: Reasoning with Shapes	4: Properties of Circles	1: Introduction to Circles
			4: Connecting Geometric and Algebraic Descriptions	1: Arc Length	2: Determining Central and Inscribed Angles in Circles 3: Determining Chords in Circles 3: Determining Interior and Exterior Angles in Circles
G.C.A.3	Construct the incenter and circumcenter of a triangle and use their properties to solve problems in context.	Textbook	1: Reasoning With Shapes	2: Composing and Decomposing Shapes	4: What's the Point?: Points of Concurrency pp. M1-175A–M1-192
G.C.B.4	Know the formula and find the area of a sector of a circle in a real-world context.	Textbook	4: Connecting Geometric and Algebraic Descriptions	1: Circles and Volume	2: A Slice of Pi: Sectors and Segments of a Circle pp. M4-25A–M4-44
		MATHia Software	4: Connecting Geometric and Algebraic Descriptions	1: Arc Length	4: Calculating the Area of a Sector
G.GPE.A.1	Know and write the equation of a circle of given center and radius using the Pythagorean Theorem.	Textbook	4: Connecting Geometric and Algebraic Descriptions	2: Conic Sections	2: X^2 Plus Y^2 Equals Radius ² : Deriving the Equation for a Circle pp. M4-119A–M4-132 3: A Blip on the Radar: Determining Points on a Circle pp. M4-133A–M4-148
		MATHia Software	4: Connecting Geometric and Algebraic Descriptions	4: Equation of a Circle	1: Deriving the Equation of a Circle 2: Determining the Radius and Center of a Circle

Standard ID	Description	Location	Module	Topic (Textbook)/ Unit(MATHia Software)	Lesson (Textbook) / Workspace (MATHia Software)
G.GPE.B.2	Use coordinates to prove simple geometric theorems algebraically.	Textbook	1: Reasoning With Shapes	1: Using a Rectangular Coordinate System	4: Where Has Polly Gone?: Classifying Shapes on the Coordinate Plane pp. M1-51A–M1-68
			4: Connecting Geometric and Algebraic Descriptions	2: Conic Sections	3: A Blip on the Radar: Determining Points on a Circle pp. M4-133A–M4-148
G.GPE.B.3	Prove the slope criteria for parallel and perpendicular lines and use them to solve geometric problems.	Textbook	1: Reasoning With Shapes	1: Using a Rectangular Coordinate System	3: Ts and Train Tracks: Parallel and Perpendicular Lines pp. M1-33A–M1-50
					4: Where Has Polly Gone?: Classifying Shapes on the Coordinate Plane pp. M1-51A–M1-68
					5: In and Out and All About: Area and Perimeter on the Coordinate Plane pp. M1-69A–M1-96
		MATHia Software	1: Reasoning with Shapes	2: Parallel and Perpendicular Lines	1: Introduction to Parallel and Perpendicular Lines
					2: Modeling Parallel and Perpendicular Lines
G.GPE.B.4	Find the point on a directed line segment between two given points that partitions the segment in a given ratio.	Textbook	3: Investigating Proportionality	1: Similarity	6: Jack's Spare Key: Partitioning Segments in Given Ratios pp. M3-95A–M3-108
G.GPE.B.5	Know and use coordinates to compute perimeters of polygons and areas of triangles and rectangles.*	Textbook	1: Reasoning With Shapes	1: Using a Rectangular Coordinate System	5: In and Out and All About: Area and Perimeter on the Coordinate Plane pp. M1-69A–M1-96
		MATHia Software	1: Reasoning with Shapes	3: Distances on the Coordinate Plane	1: Deriving the Distance Formula
					2: Calculating Distances using the Distance Formula
				3: Calculating Perimeter and Area Using the Distance Formula	
G.GMD.A.1	Give an informal argument for the formulas for the circumference of a circle and the volume and surface area of a cylinder, cone, prism, and pyramid.	Textbook	4: Connecting Geometric and Algebraic Descriptions	1: Circles and Volume	1: All Circles Great and Small: Similarity Relationships in Circles pp. M4-7A–M4-24
					2: A Slice of Pi: Sectors and Segments of a Circle pp. M4-25A–M4-44
					3: Do Me a Solid: Building Three-Dimensional Figures pp. M4-45A–M4-64
					4: Get to the Point: Building Volume and Surface Area Formulas for Pyramids, Cones, and Spheres pp. M4-65A–M4-88

Standard ID	Description	Location	Module	Topic (Textbook)/ Unit(MATHia Software)	Lesson (Textbook) / Workspace (MATHia Software)
G.GMD.A.2	Know and use volume and surface area formulas for cylinders, cones, prisms, pyramids, and spheres to solve problems.*	Textbook	4: Connecting Geometric and Algebraic Descriptions	1: Circles and Volume	4: Get to the Point: Building Volume and Surface Area Formulas for Pyramids, Cones, and Spheres pp. M4-65A–M4-88
				2: Volume	2: Calculating Volume of Cylinders
		3: Calculating Volume of Pyramids			
		4: Calculating Volume of Cones			
MATHia Software	4: Connecting Geometric and Algebraic Descriptions	5: Calculating Volume of Spheres			
G.MG.A.1	Use geometric shapes, their measures, and their properties to describe objects.*	Textbook	4: Connecting Geometric and Algebraic Descriptions	1: Circles and Volume	4: Get to the Point: Building Volume and Surface Area Formulas for Pyramids, Cones, and Spheres pp. M4-65A–M4-88
				2: Conic Sections	1: Any Way You Slice It: Cross-Sections pp. M4-101A–M4-118
G.MG.A.2	Apply geometric methods to solve real-world problems.*	Textbook	1: Reasoning With Shapes	1: Using a Rectangular Coordinate System	5: In and Out and All About: Area and Perimeter on the Coordinate Plane pp. M1-69A–M1-96
			4: Connecting Geometric and Algebraic Descriptions	1: Circles and Volume	4: Get to the Point: Building Volume and Surface Area Formulas for Pyramids, Cones, and Spheres pp. M4-65A–M4-88