

Table of Contents

M.8.1	1	M.8.12b	8
M.8.1a	1	M.8.13	8
M.8.1b	1	M.8.14	8
M.8.2	1	M.8.15	8
M.8.3	1	M.8.15a	8
M.8.4	2	M.8.16	9
M.8.4a	2	M.8.16	10
M.8.4b	2	M.8.16a	10
M.8.5	3	M.8.17	11
M.8.6	3	M.8.18	11
M.8.6a	3	M.8.19	11
M.8.6b	3	M.8.20	11
M.8.7	3	M.8.20a	11
M.8.8	3	M.8.20a	12
M.8.8a	4	M.8.21	12
M.8.9	4	M.8.22	12
M.8.9a	4	M.8.22a	12
M.8.9b	4	M.8.22a	13
M.8.9b	5	M.8.23	13
M.8.9c	5	M.8.24	14
M.8.9d	6	M.8.25	14
M.8.10	6	M.8.25a	14
M.8.11	6	M.8.26	14
M.8.11a	7	M.8.27	14
M.8.11b	7	M.8.28	15
M.8.12	7	M.8.29	15
M.8.12a	7	M.8.30	15

Standard ID	Description	Location	Module	Topic (Textbook)/ Unit (MATHia Software)	Lesson (Textbook) / Workspace (MATHia Software)
M.8.1	Define the real number system as composed of rational and irrational numbers.	Textbook	4: Expanding Number Systems	1: The Real Number System	1: So Many Numbers, So Little Time: Sorting Numbers pp. M4-7–M4-16
					2: Rational Decisions: Rational and Irrational Numbers pp. M4-17–M4-30
		MATHia Software	4: Expanding Number Systems	1: Rational and Irrational Numbers	1: Introduction to Irrational Numbers
					2: Graphing Real Numbers on a Number Line
3: Ordering Rational and Irrational Numbers					
M.8.1a	Explain that every number has a decimal expansion; for rational numbers, the decimal expansion repeats or terminates.	Textbook	4: Expanding Number Systems	1: The Real Number System	2: Rational Decisions: Rational and Irrational Numbers pp. M4-17–M4-30
M.8.1b	Convert a decimal expansion that repeats into a rational number.	Textbook	4: Expanding Number Systems	1: The Real Number System	2: Rational Decisions: Rational and Irrational Numbers pp. M4-17–M4-30
M.8.2	Locate rational approximations of irrational numbers on a number line, compare their sizes, and estimate the values of the irrational numbers.	Textbook	4: Expanding Number Systems	1: The Real Number System	3: What are Those?: The Real Numbers pp. M4-31–M4-45
					MATHia Software
		2: Graphing Real Numbers on a Number Line			
3: Ordering Rational and Irrational Numbers					
M.8.3	Develop and apply properties of integer exponents to generate equivalent numerical and algebraic expressions.	Textbook	5: Applying Powers	1: Exponents and Scientific Notation	1: It's a Generational Thing: Properties of Powers with Integer Exponents pp. M5-7–M5-27
					2: Show What You Know: Analyzing Properties of Powers pp. M5-29–M5-41
		MATHia Software	5: Applying Powers	1: Properties of Whole Number Exponents	1: Introduction to the Power Rules
					2: Using the Product Rule and the Quotient Rule
					3: Using the Power to a Power Rule
					4: Using the Product to a Power Rule and the Quotient to a Power Rule
5: Using Properties of Exponents with Whole Number Powers					
6: Rewriting Expressions with Negative and Zero Exponents					

Standard ID	Description	Location	Module	Topic (Textbook)/ Unit (MATHia Software)	Lesson (Textbook) / Workspace (MATHia Software)
M.8.4	Use square root and cube root symbols to represent solutions to equations.	Textbook	4: Expanding Number Systems	1: The Real Number System	3: What are Those?: The Real Numbers pp. M4-31–M4-45
				2: The Pythagorean Theorem	1: The Right Triangle Connection: The Pythagorean Theorem pp. M4-55–M4-74
					2: Can That Be Right?: The Converse of the Pythagorean Theorem pp. M4-75–M4-86
					3: Pythagoras Meets Descartes: Distances in a Coordinate System pp. M4-87–M4-98
		MATHia Software	4: Expanding Number Systems	4: Catty Corner: Side Lengths in Two- and Three-Dimensions pp. M4-99–M4-112	
				1: Rational and Irrational Numbers	1: Introduction to Irrational Numbers
				2: The Pythagorean Theorem	2: Applying the Pythagorean Theorem
					3: Problem Solving Using the Pythagorean Theorem
M.8.4a	Evaluate square roots of perfect squares (less than or equal to 225) and cube roots of perfect cubes (less than or equal to 1000).	Textbook	4: Expanding Number Systems	4: Calculating Distances on the Coordinate Plane	
				2: The Pythagorean Theorem	3: What are Those?: The Real Numbers pp. M4-31–M4-45
					1: The Right Triangle Connection: The Pythagorean Theorem pp. M4-55–M4-74
		MATHia Software	4: Expanding Number Systems	2: Can That Be Right?: The Converse of the Pythagorean Theorem pp. M4-75–M4-86	
				3: Pythagoras Meets Descartes: Distances in a Coordinate System pp. M4-87–M4-98	
M.8.4b	Explain that the square root of a non-perfect square is irrational.	1: Introduction to Irrational Numbers			
		1: Rational and Irrational Numbers			
M.8.4b	Explain that the square root of a non-perfect square is irrational.	Textbook	4: Expanding Number Systems	1: The Real Number System	3: What are Those?: The Real Numbers pp. M4-31–M4-45
		MATHia Software	4: Expanding Number Systems	1: Rational and Irrational Numbers	1: Introduction to Irrational Numbers

Standard ID	Description	Location	Module	Topic (Textbook)/ Unit (MATHia Software)	Lesson (Textbook) / Workspace (MATHia Software)
M.8.5	Estimate and compare very large or very small numbers in scientific notation.	Textbook	5: Applying Powers	1: Exponents and Scientific Notation	3: The Big and Small of It: Scientific Notation pp. M5-43–M5-60 4: How Much Larger?: Operations with Scientific Notation pp. M5-61–M5-76
		MATHia Software	5: Applying Powers	2: Scientific Notation	2: Comparing Numbers using Scientific Notation
M.8.6	Perform operations with numbers expressed in scientific notation, including problems where both decimal and scientific notation are used.	Textbook	5: Applying Powers	1: Exponents and Scientific Notation	3: The Big and Small of It: Scientific Notation pp. M5-43–M5-60 4: How Much Larger?: Operations with Scientific Notation pp. M5-61–M5-76
		MATHia Software	5: Applying Powers	2: Scientific Notation	1: Using Scientific Notation
M.8.6a	Use scientific notation and choose units of appropriate size for measurements of very large or very small quantities.	Textbook	5: Applying Powers	1: Exponents and Scientific Notation	3: The Big and Small of It: Scientific Notation pp. M5-43–M5-60 4: How Much Larger?: Operations with Scientific Notation pp. M5-61–M5-76
		MATHia Software	5: Applying Powers	2: Scientific Notation	1: Using Scientific Notation
M.8.6b	Interpret scientific notation that has been generated by technology.	Textbook	5: Applying Powers	1: Exponents and Scientific Notation	3: The Big and Small of It: Scientific Notation pp. M5-43–M5-60 4: How Much Larger?: Operations with Scientific Notation pp. M5-61–M5-76
M.8.7	Determine whether a relationship between two variables is proportional or non-proportional.	Textbook	2: Developing Function Foundations	1: From Proportions to Linear Relationships	1: Post-Secondary Proportions: Representations of Proportional Relationships pp. M2-7–M2-22
M.8.8	Graph proportional relationships.	Textbook	2: Developing Function Foundations	1: From Proportions to Linear Relationships	1: Post-Secondary Proportions: Representations of Proportional Relationships pp. M2-7–M2-22 2: Jack and Jill Went Up the Hill: Using Similar Triangles to Describe the Steepness of a Line pp. M2-23–M2-42
		MATHia Software	2: Developing Function Foundations	1: Representing Proportional Relationships	4: Graphing Linear Relationships

Standard ID	Description	Location	Module	Topic (Textbook)/ Unit (MATHia Software)	Lesson (Textbook) / Workspace (MATHia Software)
M.8.8a	Interpret the unit rate of a proportional relationship, describing the constant of proportionality as the slope of the graph which goes through the origin and has the equation $y = mx$ where m is the slope.	Textbook	2: Developing Function Foundations	1: From Proportions to Linear Relationships	1: Post-Secondary Proportions: Representations of Proportional Relationships pp. M2-7–M2-22
		MATHia Software	2: Developing Function Foundations	1: Representing Proportional Relationships	2: Jack and Jill Went Up the Hill: Using Similar Triangles to Describe the Steepness of a Line pp. M2-23–M2-42 3: Understanding the Slopes of Lines
M.8.9	Interpret $y = mx + b$ as defining a linear equation whose graph is a line with m as the slope and b as the y -intercept.	Textbook	2: Developing Function Foundations	2: Linear Relationships	4: Derby Day: Slope-Intercept Form of a Line pp. M2-119–M2-133
		MATHia Software	2: Developing Function Foundations	3: Writing Equations of a Line	3: Introduction to Functions 4: Over the River and Through the Woods: Describing Functions pp. M2-223–M2-240 1: Connecting Slope-Intercept and Point-Slope Forms
M.8.9a	Use similar triangles to explain why the slope m is the same between any two distinct points on a non-vertical line in a coordinate plane.	Textbook	2: Developing Function Foundations	1: From Proportions to Linear Relationships	2: Jack and Jill Went Up the Hill: Using Similar Triangles to Describe the Steepness of a Line pp. M2-23–M2-42 3: Slippery Slopes: Exploring Slopes Using Similar Triangles pp. M2-43–M2-52
		MATHia Software	2: Developing Function Foundations	1: Representing Proportional Relationships	4: Up, Down, and All Around: Transformations of Lines pp. M2-53–M2-72 3: Understanding the Slopes of Lines
M.8.9b	Given two distinct points in a coordinate plane, find the slope of the line containing the two points and explain why it will be the same for any two distinct points on the line.	Textbook	2: Developing Function Foundations	2: Linear Relationships	1: U.S. Shirts: Using Tables, Graphs, and Equations pp. M2-81–M2-92 2: At the Arcade: Linear Relationships in Tables pp. M2-93–M2-108 3: Dining, Dancing, and Driving: Linear Relationships in Contexts pp. M2-109–M2-118 4: Derby Day: Slope-Intercept Form of a Line pp. M2-119–M2-133 5: What's the Point?: Point-Slope Form of a Line pp. M2-135–M2-150 6: The Arts are Alive: Using Linear Equations pp. M2-151–M2-167

Standard ID	Description	Location	Module	Topic (Textbook)/ Unit (MATHia Software)	Lesson (Textbook) / Workspace (MATHia Software)
M.8.9b	Given two distinct points in a coordinate plane, find the slope of the line containing the two points and explain why it will be the same for any two distinct points on the line.	MATHia Software	2: Developing Function Foundations	1: Representing Proportional Relationships	1: Representing Proportional Relationships Algebraically
					2: Modeling the Constant of Proportionality
					4: Graphing Linear Relationships
				2: Linear Models	1: Multiple Representations of Linear Functions
					2: Modeling Linear Functions Using Multiple Representations
					3: Calculating Slopes
				3: Writing Equations of a Line	2: Writing Equations Given Slope and a Point
					3: Writing Equations Given Two Points
					4: Modeling Linear Relationships Given an Initial Point
	5: Modeling Linear Relationships Given Two Points				
M.8.9c	Graph linear relationships, interpreting the slope as the rate of change of the graph and the y-intercept as the initial value.	Textbook	2: Developing Function Foundations	2: Linear Relationships	1: U.S. Shirts: Using Tables, Graphs, and Equations pp. M2-81–M2-92
					3: Dining, Dancing, and Driving: Linear Relationships in Contexts pp. M2-109–M2-118
					4: Derby Day: Slope-Intercept Form of a Line pp. M2-119–M2-133
					6: The Arts are Alive: Using Linear Equations pp. M2-151–M2-167
		MATHia Software	2: Developing Function Foundations	1: Representing Proportional Relationships	4: Graphing Linear Relationships
					2: Modeling Linear Functions Using Multiple Representations
				4: Graphs of Linear Equations in Two Variables	2: Graphing Given an Integer Slope and y-Intercept
					3: Graphing Given a Decimal Slope and y-Intercept

Standard ID	Description	Location	Module	Topic (Textbook)/ Unit (MATHia Software)	Lesson (Textbook) / Workspace (MATHia Software)	
M.8.9d	Given that the slopes for two different sets of points are equal, demonstrate that the linear equations that include those two sets of points may have different y-intercepts.	Textbook	2: Developing Function Foundations	1: From Proportions to Linear Relationships	2: Jack and Jill Went Up the Hill: Using Similar Triangles to Describe the Steepness of a Line pp. M2-23–M2-42 3: Slippery Slopes: Exploring Slopes Using Similar Triangles pp. M2-43–M2-52 4: Up, Down, and All Around: Transformations of Lines pp. M2-53–M2-72	
		MATHia Software	2: Developing Function Foundations	1: Representing Proportional Relationships	3: Understanding the Slopes of Lines	
M.8.10	Compare proportional and non-proportional linear relationships represented in different ways (algebraically, graphically, numerically in tables, or by verbal descriptions) to solve real-world problems.	Textbook	2: Developing Function Foundations	3: Introduction to Functions	5: Comparing Apples to Oranges: Comparing Functions Using Different Representations pp. M2-241–M2-256	
M.8.11	Solve multi-step linear equations in one variable, including rational number coefficients, and equations that require using the distributive property and combining like terms.	Textbook	3: Modeling Linear Equations	1: Solving Linear Equations	1: Strategic Solving: Equations with Variables on Both Sides pp. M3-7–M3-16 3: Tic-Tac-Bingo: Creating Linear Equations pp. M3-31–M3-38	
					MATHia Software	3: Modeling Linear Equations
		2: Solving Linear Equations with Similar Terms	1: Solving by Combining Like Variable Terms and a Constant with Integers (No Type In) 2: Solving by Combining Like Variable Terms and a Constant with Integers (Type In) 3: Solving by Combining Like Variable Terms and a Constant with Decimals (No Type In) 4: Solving by Combining Like Variable Terms and a Constant with Decimals (Type In)			
			3: Linear Models and the Distributive Property	5: Solving with the Distributive Property Over Multiplication 6: Solving with the Distributive Property Over Division		
				4: Linear Equations with Variables on Both Sides		

Standard ID	Description	Location	Module	Topic (Textbook)/ Unit (MATHia Software)	Lesson (Textbook) / Workspace (MATHia Software)
M.8.11a	Determine whether linear equations in one variable have one solution, no solution, or infinitely many solutions of the form $x = a$, $a = a$, or $a = b$ (where a and b are different numbers).	Textbook	3: Modeling Linear Equations	1: Solving Linear Equations	2: MP3s and DVDs: Analyzing and Solving Linear Equations pp. M3-17–M3-30
					3: Tic-Tac-Bingo: Creating Linear Equations pp. M3-31–M3-38
		MATHia Software	3: Modeling Linear Equations	4: Linear Equations with Variables on Both Sides	3: Solving Equations with One Solution, Infinite, and No Solutions
					4: Sorting Equations by Number of Solutions
M.8.11b	Represent and solve real-world and mathematical problems with equations and interpret each solution in the context of the problem.	Textbook	3: Modeling Linear Equations	1: Solving Linear Equations	3: Tic-Tac-Bingo: Creating Linear Equations pp. M3-31–M3-38
M.8.12	Solve systems of two linear equations in two variables by graphing and substitution.	Textbook	3: Modeling Linear Equations	2: Systems of Linear Equations	3: The County Fair: Using Substitution to Solve Linear Systems pp. M3-75–M3-92
					4: Rockin' Roller Rinks: Choosing a Method to Solve a Linear System pp. M3-93–M3-104
		MATHia Software	3: Modeling Linear Equations	5: Systems of Linear Equations	2: Modeling Linear Systems Involving Integers
					3: Modeling Linear Systems Involving Decimals
M.8.12a	Explain that the solution(s) of systems of two linear equations in two variables corresponds to points of intersection on their graphs because points of intersection satisfy both equations simultaneously.	Textbook	3: Modeling Linear Equations	2: Systems of Linear Equations	1: Crossing Paths: Point of Intersection of Linear Graphs pp. M3-47–M3-60
					2: The Road Less Traveled: Systems of Linear Equations pp. M3-61–M3-74
					3: The County Fair: Using Substitution to Solve Linear Systems pp. M3-75–M3-92
					4: Rockin' Roller Rinks: Choosing a Method to Solve a Linear System pp. M3-93–M3-104
		MATHia Software	3: Modeling Linear Equations	5: Systems of Linear Equations	1: Introduction to Systems of Linear Equations
					2: Modeling Linear Systems Involving Integers
3: Modeling Linear Systems Involving Decimals					

Standard ID	Description	Location	Module	Topic (Textbook)/ Unit (MATHia Software)	Lesson (Textbook) / Workspace (MATHia Software)
M.8.12b	Interpret and justify the results of systems of two linear equations in two variables (one solution, no solution, or infinitely many solutions) when applied to real-world and mathematical problems.	Textbook	3: Modeling Linear Equations	2: Systems of Linear Equations	2: The Road Less Traveled: Systems of Linear Equations pp. M3-61–M3-74
					3: The County Fair: Using Substitution to Solve Linear Systems pp. M3-75–M3-92
		MATHia Software	3: Modeling Linear Equations	5: Systems of Linear Equations	4: Rockin' Roller Rinks: Choosing a Method to Solve a Linear System pp. M3-93–M3-104
					1: Introduction to Systems of Linear Equations
2: Modeling Linear Systems Involving Integers					
3: Modeling Linear Systems Involving Decimals					
M.8.13	Determine whether a relation is a function, defining a function as a rule that assigns to each input (independent value) exactly one output (dependent value), and given a graph, table, mapping, or set of ordered pairs.	Textbook	2: Developing Function Foundations	3: Introduction to Functions	1: Patterns, Sequences, Rules . . . : Analyzing Sequences as Rules pp. M2-179–M2-188
					3: One or More Xs to One Y: Defining Functional Relationships pp. M2-205–M2-221
		MATHia Software	2: Developing Function Foundations	5: Relations and Functions	1: Exploring Functions
					2: Exploring Graphs of Functions
3: Classifying Relations and Functions					
M.8.14	Evaluate functions defined by a rule or an equation, given values for the independent variable.	Textbook	3: Modeling Linear Equations	2: Systems of Linear Equations	3: The County Fair: Using Substitution to Solve Linear Systems pp. M3-75–M3-92
		MATHia Software	2: Developing Function Foundations	1: Representing Proportional Relationships	1: Representing Proportional Relationships Algebraically
M.8.15	Compare properties of functions represented algebraically, graphically, numerically in tables, or by verbal descriptions.	Textbook	2: Developing Function Foundations	3: Introduction to Functions	5: Comparing Apples to Oranges: Comparing Functions Using Different Representations pp. M2-241–M2-256
M.8.15a	Distinguish between linear and non-linear functions.	Textbook	2: Developing Function Foundations	3: Introduction to Functions	4: Over the River and Through the Woods: Describing Functions pp. M2-223–M2-240

Standard ID	Description	Location	Module	Topic (Textbook)/ Unit (MATHia Software)	Lesson (Textbook) / Workspace (MATHia Software)
M.8.16	Construct a function to model a linear relationship between two variables.	Textbook	2: Developing Function Foundations	2: Linear Relationships	1: U.S. Shirts: Using Tables, Graphs, and Equations pp. M2-81–M2-92
					2: At the Arcade: Linear Relationships in Tables pp. M2-93–M2-108
					3: Dining, Dancing, and Driving: Linear Relationships in Contexts pp. M2-109–M2-118
					4: Derby Day: Slope-Intercept Form of a Line pp. M2-119–M2-133
					5: What's the Point?: Point-Slope Form of a Line pp. M2-135–M2-150
					6: The Arts are Alive: Using Linear Equations pp. M2-151–M2-167
				3: Introduction to Functions	4: Over the River and Through the Woods: Describing Functions pp. M2-223–M2-240
		MATHia Software	2: Developing Function Foundations	1: Representing Proportional Relationships	1: Representing Proportional Relationships Algebraically
					2: Modeling the Constant of Proportionality
					4: Graphing Linear Relationships
				2: Linear Models	1: Multiple Representations of Linear Functions
					2: Modeling Linear Functions Using Multiple Representations
					3: Calculating Slopes
				3: Writing Equations of a Line	2: Writing Equations Given Slope and a Point
					3: Writing Equations Given Two Points
4: Modeling Linear Relationships Given an Initial Point					
5: Modeling Linear Relationships Given Two Points					

Standard ID	Description	Location	Module	Topic (Textbook)/ Unit (MATHia Software)	Lesson (Textbook) / Workspace (MATHia Software)
M.8.16	Construct a function to model a linear relationship between two variables.	MATHia Software	2: Developing Function Foundations	4: Graphs of Linear Equations in Two Variables	1: Analyzing Models of Linear Relationships
					2: Graphing Given an Integer Slope and y-Intercept
					3: Graphing Given a Decimal Slope and y-Intercept
					4: Modeling Linear Equations in Standard Form
					5: Graphing Linear Equations using a Given Method
					6: Graphing Linear Equations using a Chosen Method
			3: Modeling Linear Equations	3: Linear Models and the Distributive Property	1: Analyzing Models of Linear Relationships Involving the Distributive Property
					2: Modeling Integer Rates of Change
3: Modeling Fractional Rates of Change					
4: Modeling using the Distributive Property over Division					
M.8.16a	Interpret the rate of change (slope) and initial value of the linear function from a description of a relationship or from two points in a table or graph.	Textbook	2: Developing Function Foundations	2: Linear Relationships	1: U.S. Shirts: Using Tables, Graphs, and Equations pp. M2-81–M2-92
					2: At the Arcade: Linear Relationships in Tables pp. M2-93–M2-108
					3: Dining, Dancing, and Driving: Linear Relationships in Contexts pp. M2-109–M2-118
					4: Derby Day: Slope-Intercept Form of a Line pp. M2-119–M2-133
		MATHia Software	2: Developing Function Foundations	2: Linear Models	1: Multiple Representations of Linear Functions
					2: Modeling Linear Functions Using Multiple Representations
				3: Writing Equations of a Line	3: Writing Equations Given Two Points
					4: Modeling Linear Relationships Given an Initial Point
					5: Modeling Linear Relationships Given Two Points
				4: Graphs of Linear Equations in Two Variables	1: Analyzing Models of Linear Relationships

Standard ID	Description	Location	Module	Topic (Textbook)/ Unit (MATHia Software)	Lesson (Textbook) / Workspace (MATHia Software)
M.8.17	Analyze the relationship (increasing or decreasing, linear or non-linear) between two quantities represented in a graph.	Textbook	2: Developing Function Foundations	3: Introduction to Functions	2: Once Upon a Graph: Analyzing the Characteristics of Graphs of Relationships pp. M2-189–M2-204 4: Over the River and Through the Woods: Describing Functions pp. M2-223–M2-240
		MATHia Software	2: Developing Function Foundations	5: Relations and Functions	4: Identifying Key Characteristics of Graphs of Functions
M.8.18	Construct and interpret scatter plots for bivariate measurement data to investigate patterns of association between two quantities, describing patterns in terms of positive, negative, or no association, linear and non-linear association, clustering, and outliers.	Textbook	2: Developing Function Foundations	4: Patterns in Bivariate Data	1: Pass the Squeeze: Analyzing Patterns in Scatter Plots pp. M2-267–M2-288
		MATHia Software	2: Developing Function Foundations	6: Lines of Best Fit	1: Estimating Lines of Best Fit
M.8.19	Given a scatter plot that suggests a linear association, informally draw a line to fit the data, and assess the model fit by judging the closeness of the data points to the line.	Textbook	2: Developing Function Foundations	4: Patterns in Bivariate Data	2: Where Do You Buy Your Books?: Drawing Lines of Best Fit pp. M2-289–M2-304 3: Mia is Growing Like a Weed: Analyzing Lines of Best Fit pp. M2-305–M2-318
		MATHia Software	2: Developing Function Foundations	6: Lines of Best Fit	1: Estimating Lines of Best Fit 2: Using Lines of Best Fit
M.8.20	Use a linear model of a real-world situation to solve problems and make predictions.	Textbook	2: Developing Function Foundations	4: Patterns in Bivariate Data	2: Where Do You Buy Your Books?: Drawing Lines of Best Fit pp. M2-289–M2-304 3: Mia is Growing Like a Weed: Analyzing Lines of Best Fit pp. M2-305–M2-318 4: The Stroop Test: Comparing Slopes and Intercepts of Data from Experiments pp. M2-319–M2-327
		MATHia Software	2: Developing Function Foundations	6: Lines of Best Fit	2: Using Lines of Best Fit
M.8.20a	Describe the rate of change and y-intercept in the context of a problem using a linear model of a real-world situation.	Textbook	2: Developing Function Foundations	4: Patterns in Bivariate Data	3: Mia is Growing Like a Weed: Analyzing Lines of Best Fit pp. M2-305–M2-318

Standard ID	Description	Location	Module	Topic (Textbook)/ Unit (MATHia Software)	Lesson (Textbook) / Workspace (MATHia Software)
M.8.20a	Describe the rate of change and y-intercept in the context of a problem using a linear model of a real-world situation.	Textbook	2: Developing Function Foundations	4: Patterns in Bivariate Data	4: The Stroop Test: Comparing Slopes and Intercepts of Data from Experiments pp. M2-319–M2-327
		MATHia Software	2: Developing Function Foundations	6: Lines of Best Fit	2: Using Lines of Best Fit
M.8.21	Construct and interpret a two-way table summarizing data on two categorical variables collected from the same subjects, using relative frequencies calculated for rows or columns to describe possible associations between the two variables.	Textbook	2: Developing Function Foundations	4: Patterns in Bivariate Data	5: Would You Rather ...?: Patterns of Association in Two-Way Tables pp. M2-329–M2-346
		MATHia Software	2: Developing Function Foundations	7: Categorical Data	1: Building Marginal Frequency Distributions
					2: Analyzing Marginal Frequency Distributions
					3: Building Marginal Relative Frequency Distributions
4: Analyzing Marginal Relative Frequency Distributions					
M.8.22	Verify experimentally the properties of rigid motions (rotations, reflections, and translations): lines are taken to lines, and line segments are taken to line segments of the same length; angles are taken to angles of the same measure; and parallel lines are taken to parallel lines.	Textbook	1: Transforming Geometric Objects	1: Rigid Motion Transformations	1: Patty Paper, Patty Paper: Introduction to Congruent Figures pp. M1-7–M1-16
			2: Developing Function Foundations	1: From Proportions to Linear Relationships	2: Slides, Flips, and Spins: Introduction to Rigid Motions pp. M1-17–M1-38
		MATHia Software	1: Transforming Geometric Objects	1: Rigid Motions on the Coordinate Plane	4: Up, Down, and All Around: Transformations of Lines pp. M2-53–M2-72
M.8.22a	Given a pair of two-dimensional figures, determine if a series of rigid motions maps one figure onto the other, recognizing that if such a sequence exists the figures are congruent; describe the transformation sequence that verifies a congruence relationship.	Textbook	1: Transforming Geometric Objects	1: Rigid Motion Transformations	1: Patty Paper, Patty Paper: Introduction to Congruent Figures pp. M1-7–M1-16
					2: Slides, Flips, and Spins: Introduction to Rigid Motions pp. M1-17–M1-38
					3: Lateral Moves: Translations of Figures on the Coordinate Plane pp. M1-39–M1-52
					4: Mirror, Mirror: Reflections of Figures on the Coordinate Plane pp. M1-53–M1-66
					5: Half Turns and Quarter Turns: Rotations of Figures on the Coordinate Plane pp. M1-67–M1-82

Standard ID	Description	Location	Module	Topic (Textbook)/ Unit (MATHia Software)	Lesson (Textbook) / Workspace (MATHia Software)
M.8.22a	Given a pair of two-dimensional figures, determine if a series of rigid motions maps one figure onto the other, recognizing that if such a sequence exists the figures are congruent; describe the transformation sequence that verifies a congruence relationship.	Textbook	1: Transforming Geometric Objects	1: Rigid Motion Transformations	6: Every Which Way: Combining Rigid Motions pp. M1-83–M1-97
		MATHia Software	1: Transforming Geometric Objects	1: Rigid Motions on the Coordinate Plane	2: Translating Plane Figures
					3: Reflecting Plane Figures
					4: Rotating Plane Figures
				2: Similar Figures on the Coordinate Plane	3: Performing One Transformation
					4: Performing Multiple Transformations
5: Describing Transformations Using Coordinates					
M.8.23	Use coordinates to describe the effect of transformations (dilations, translations, rotations, and reflections) on two-dimensional figures.	Textbook	1: Transforming Geometric Objects	1: Rigid Motion Transformations	3: Lateral Moves: Translations of Figures on the Coordinate Plane pp. M1-39–M1-52
					4: Mirror, Mirror: Reflections of Figures on the Coordinate Plane pp. M1-53–M1-66
					5: Half Turns and Quarter Turns: Rotations of Figures on the Coordinate Plane pp. M1-67–M1-82
					6: Every Which Way: Combining Rigid Motions pp. M1-83–M1-97
				2: Similarity	2: Rising, Running, Stepping, Scaling: Dilating Figures on the Coordinate Plane pp. M1-125–M1-140
				MATHia Software	1: Transforming Geometric Objects
		3: Reflecting Plane Figures			
		4: Rotating Plane Figures			
		2: Similar Figures on the Coordinate Plane	5: Describing Rigid Motions Using Coordinates		
			2: Dilating Plane Figures		
3: Performing One Transformation					
4: Performing Multiple Transformations					

Standard ID	Description	Location	Module	Topic (Textbook)/ Unit (MATHia Software)	Lesson (Textbook) / Workspace (MATHia Software)
M.8.24	Given a pair of two-dimensional figures, determine if a series of dilations and rigid motions maps one figure onto the other, recognizing that if such a sequence exists the figures are similar; describe the transformation sequence that exhibits the similarity between them.	Textbook	1: Transforming Geometric Objects	2: Similarity	1: Pinch-Zoom Geometry: Dilations of Figures pp. M1-109–M1-124
					2: Rising, Running, Stepping, Scaling: Dilating Figures on the Coordinate Plane pp. M1-125–M1-140
					3: From Here to There: Mapping Similar Figures using Transformations pp. M1-141–M1-157
		MATHia Software	1: Transforming Geometric Objects	2: Similar Figures on the Coordinate Plane	1: Defining Similarity
					2: Dilating Plane Figures
3: Performing One Transformation					
4: Performing Multiple Transformations					
5: Describing Transformations Using Coordinates					
M.8.25	Analyze and apply properties of parallel lines cut by a transversal to determine missing angle measures.	Textbook	1: Transforming Geometric Objects	3: Line and Angle Relationships	2: Crisscross Applesauce: Angle Relationships Formed by Lines Intersected by a Transversal pp. M1-181–M1-202
					MATHia Software
		2: Reasoning about Angles Formed by Transversals			
3: Calculating Angle Measures Formed by Transversals					
M.8.25a	Use informal arguments to establish that the sum of the interior angles of a triangle is 180 degrees.	Textbook	1: Transforming Geometric Objects	3: Line and Angle Relationships	1: Pulling a One-Eighty!: Triangle Sum and Exterior Angle Theorems pp. M1-167–M1-180
					MATHia Software
M.8.26	Informally justify the Pythagorean Theorem and its converse.	Textbook	4: Expanding Number Systems	2: The Pythagorean Theorem	1: The Right Triangle Connection: The Pythagorean Theorem pp. M4-55–M4-74
					MATHia Software
1: Exploring the Pythagorean Theorem					
M.8.27	Apply the Pythagorean Theorem to find the distance between two points in a coordinate plane.	Textbook	4: Expanding Number Systems	2: The Pythagorean Theorem	3: Pythagoras Meets Descartes: Distances in a Coordinate System pp. M4-87–M4-98
					MATHia Software

Standard ID	Description	Location	Module	Topic (Textbook)/ Unit (MATHia Software)	Lesson (Textbook) / Workspace (MATHia Software)
M.8.28	Apply the Pythagorean Theorem to determine unknown side lengths of right triangles, including real-world applications.	Textbook	4: Expanding Number Systems	2: The Pythagorean Theorem	1: The Right Triangle Connection: The Pythagorean Theorem pp. M4-55–M4-74
					2: Can That Be Right?: The Converse of the Pythagorean Theorem pp. M4-75–M4-86
		MATHia Software	4: Expanding Number Systems	2: The Pythagorean Theorem	4: Catty Corner: Side Lengths in Two- and Three-Dimensions pp. M4-99–M4-112
					2: Applying the Pythagorean Theorem
M.8.29	Informally derive the formulas for the volume of cones and spheres by experimentally comparing the volumes of cones and spheres with the same radius and height to a cylinder with the same dimensions.	Textbook	5: Applying Powers	2: Volume of Curved Figures	3: Problem Solving Using the Pythagorean Theorem
					2: Cone of Silence: Volume of a Cone pp. M5-99–M5-112
M.8.30	Use formulas to calculate the volumes of three-dimensional figures (cylinders, cones, and spheres) to solve real-world problems.	MATHia Software	5: Applying Powers	3: Volume	3: Pulled in All Directions: Volume of a Sphere pp. M5-113–M5-122
					1: Relating Volumes of Cylinders, Cones, and Spheres
M.8.30	Use formulas to calculate the volumes of three-dimensional figures (cylinders, cones, and spheres) to solve real-world problems.	Textbook	5: Applying Powers	2: Volume of Curved Figures	1: Drum Roll, Please!: Volume of a Cylinder pp. M5-85–M5-98
					2: Cone of Silence: Volume of a Cone pp. M5-99–M5-112
					3: Pulled in All Directions: Volume of a Sphere pp. M5-113–M5-122
					4: Silos, Frozen Yogurt, and Popcorn: Volume Problems with Cylinders, Cones, and Spheres pp. M5-123–M5-132
		MATHia Software	5: Applying Powers	3: Volume	1: Relating Volumes of Cylinders, Cones, and Spheres
					2: Calculating Volume of Cylinders
					3: Using Volume of Cylinders
4: Calculating Volume of Cones					
5: Using Volume of Cones					
6: Calculating Volume of Spheres					
7: Using Volume of Spheres					