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| Standard ID | Description | Location | Module | Topic (Textbook)/ Unit (MATHia Software) | Lesson (Textbook) / Workspace (MATHia Software) |
|---------------|---|--------------------|------------------------------|--|---|
| GEO.1 | Extend understanding of irrational and rational numbers by rewriting expressions involving radicals, including addition, subtraction, multiplication, and division, in order to recognize geometric patterns. | Geometry Textbook | 2: Establishing Congruence | 2: Justifying Line and Angle Relationships | 4: Identical Twins: Perpendicular Bisector and Isosceles Triangle Theorems pp. M2-119–M2-139 |
| GEO.2 | Use units as a way to understand problems and to guide the solution of multi-step problems. | Algebra I Textbook | 1: Searching for Patterns | 1: Quantities and Relationships | 1: A Picture is Worth a Thousand Words: Understanding Quantities and Their Relationships pp. M1-7–M1-20 |
| | | | 2: Exploring Constant Change | 1: Linear Functions | 2: Fun with Functions, Linear Ones: Making Sense of Different Representations of a Linear Function pp. M2-23–M2-40 |
| | | | | 2: Solving Linear Equations and Inequalities | 4: Connect Four: Comparing Linear Functions in Different Forms pp. M2-59–M2-67 |
| GEO.2a | Choose and interpret units consistently in formulas. | Algebra I Textbook | 1: Searching for Patterns | 1: Quantities and Relationships | 1: A Picture is Worth a Thousand Words: Understanding Quantities and Their Relationships pp. M1-7–M1-20 |
| | | | 2: Exploring Constant Change | 1: Linear Functions | 2: Fun with Functions, Linear Ones: Making Sense of Different Representations of a Linear Function pp. M2-23–M2-40 |
| | | | | 2: Solving Linear Equations and Inequalities | 4: Connect Four: Comparing Linear Functions in Different Forms pp. M2-59–M2-67 |
| GEO.2b | Choose and interpret the scale and the origin in graphs and data displays. | Algebra I Textbook | 1: Searching for Patterns | 1: Quantities and Relationships | 1: A Picture is Worth a Thousand Words: Understanding Quantities and Their Relationships pp. M1-7–M1-20 |
| | | | 2: Exploring Constant Change | 1: Linear Functions | 2: Fun with Functions, Linear Ones: Making Sense of Different Representations of a Linear Function pp. M2-23–M2-40 |

| Standard ID | Description | Location | Module | Topic (Textbook)/ Unit (MATHia Software) | Lesson (Textbook) / Workspace (MATHia Software) |
|---------------|---|--------------------------------|--|--|---|
| GEO.2b | Choose and interpret the scale and the origin in graphs and data displays. | Algebra I Textbook | 2: Exploring Constant Change | 1: Linear Functions | 4: Connect Four: Comparing Linear Functions in Different Forms pp. M2-59–M2-67 |
| GEO.2c | Define appropriate quantities for the purpose of descriptive modeling. | Algebra I Textbook | 1: Searching for Patterns | 1: Quantities and Relationships | 1: A Picture is Worth a Thousand Words: Understanding Quantities and Their Relationships pp. M1-7–M1-20 |
| GEO.2d | Choose a level of accuracy appropriate to limitations of measurements when reporting quantities. | Algebra I Textbook | 1: Searching for Patterns | 3: Linear Regressions | 1: Like a Glove: Least Squares Regressions pp. M1-167–M1-180 |
| | | | | | 2: Gotta Keep It Correlatin': Correlation pp. M1-181–M1-195 |
| | | | | | 4: To Fit or Not To Fit? That Is The Question!: Using Residual Plots pp. M1-211–M1-222 |
| GEO.3 | Find the coordinates of the vertices of a polygon determined by a set of lines, given their equations, by setting their function rules equal and solving, or by using their graphs. | Geometry Textbook | 1: Reasoning with Shapes | 1: Using a Rectangular Coordinate System | 4: Where Has Polly Gone?: Classifying Shapes on the Coordinate Plane pp. M1-51–M1-68 |
| | | | | | 5: In and Out and All About: Area and Perimeter on the Coordinate Plane pp. M1-69–M1-96 |
| GEO.4 | Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations. | Algebra I Textbook | 2: Exploring Constant Change | 2: Solving Linear Equations and Inequalities | 2: It's Literally About Literal Equations: Literal Equations pp. M2-91–M2-102 |
| GEO.5 | Verify that the graph of a linear equation in two variables is the set of all its solutions plotted in the coordinate plane, which forms a line. | Algebra I Textbook | 1: Searching for Patterns | 1: Quantities and Relationships | 1: A Picture is Worth a Thousand Words: Understanding Quantities and Their Relationships pp. M1-7–M1-20 |
| | | | 2: Exploring Constant Change | 1: Linear Functions | 2: Fun with Functions, Linear Ones: Making Sense of Different Representations of a Linear Function pp. M2-23–M2-40 |
| | | | | 3: Systems of Equations and Inequalities | 1: Double the Fun: Introduction to Systems of Equations pp. M2-139–M2-154 |
| GEO.6 | Derive the equation of a circle of given center and radius using the Pythagorean Theorem. | Geometry 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. M4-119–M4-132 |
| | | Geometry MATHia Software | 4: Connecting Geometric and Algebraic Descriptions | 4: Equation of a Circle | 3: A Blip on the Radar: Determining Points on a Circle pp. M4-133–M4-148 |
| | | | | | 1: Deriving the Equation of a Circle |

| Standard ID | Description | Location | Module | Topic (Textbook)/ Unit (MATHia Software) | Lesson (Textbook) / Workspace (MATHia Software) |
|---------------|--|--------------------------|-----------------------------|---|---|
| GEO.6b | Derive the distance formula from the Pythagorean Theorem. | Geometry Textbook | 1: Reasoning with Shapes | 1: Using a Rectangular Coordinate System | 4: Where Has Polly Gone?: Classifying Shapes on the Coordinate Plane pp. M1-51–M1-68 |
| | | Geometry MATHia Software | 1: Reasoning with Shapes | 3: Distances on the Coordinate Plane | 1: Deriving the Distance Formula |
| GEO.7 | Use mathematical and statistical reasoning with quantitative data, both univariate data (set of values) and bivariate data (set of pairs of values) that suggest a linear association, in order to draw conclusions and assess risk. Example: Estimate the typical age at which a lung cancer patient is diagnosed, and estimate how the typical age differs depending on the number of cigarettes smoked per day. | Algebra I Textbook | 1: Searching for Patterns | 3: Linear Regressions | 3: The Residual Effect: Creating Residual Plots pp. M1-197–M1-210 |
| GEO.8 | Use technology to organize data, including very large data sets, into a useful and manageable structure. | Algebra I Textbook | 1: Searching for Patterns | 3: Linear Regressions | 1: Like a Glove: Least Squares Regressions pp. M1-167–M1-180 |
| | | | | | 2: Gotta Keep It Correlatin': Correlation pp. M1-181–M1-195 |
| | | | | | 3: The Residual Effect: Creating Residual Plots pp. M1-197–M1-210 |
| | | | | | 4: To Fit or Not To Fit? That Is The Question!: Using Residual Plots pp. M1-211–M1-222 |
| GEO.9 | Represent the distribution of univariate quantitative data with plots on the real number line, choosing a format (dot plot, histogram, or box plot) most appropriate to the data set, and represent the distribution of bivariate quantitative data with a scatter plot. Extend from simple cases by hand to more complex cases involving large data sets using technology. | Algebra I Textbook | 4: Describing Distributions | 1: One-Variable Statistics | 1: Way to Represent!: Graphically Representing Data pp. M4-7–M4-16 |
| | | | | | 2: A Skewed Reality: Determining the Better Measure of Center and Spread for a Data Set pp. M4-17–M4-34 |
| | | | | | 3: Dare to Compare: Comparing Data Sets pp. M4-35–M4-44 |
| | | | 1: Searching for Patterns | 3: Linear Regressions | 1: Like a Glove: Least Squares Regressions pp. M1-167–M1-180 |
| | | | | | 2: Gotta Keep It Correlatin': Correlation pp. M1-181–M1-195 |
| | | | | | 3: The Residual Effect: Creating Residual Plots pp. M1-197–M1-210 |

| Standard ID | Description | Location | Module | Topic (Textbook)/ Unit (MATHia Software) | Lesson (Textbook) / Workspace (MATHia Software) |
|--|---|---------------------------|-----------------------------|---|---|
| GEO.9 | Represent the distribution of univariate quantitative data with plots on the real number line, choosing a format (dot plot, histogram, or box plot) most appropriate to the data set, and represent the distribution of bivariate quantitative data with a scatter plot. Extend from simple cases by hand to more complex cases involving large data sets using technology. | Algebra I Textbook | 1: Searching for Patterns | 3: Linear Regressions | 4: To Fit or Not To Fit? That Is The Question!: Using Residual Plots pp. M1-211-M1-222 |
| | | Algebra I MATHia Software | 4: Describing Distributions | 1: Numerical Summary Statistics | 3: Comparing and Interpreting Measures of Center |
| GEO.10 | Use statistics appropriate to the shape of the data distribution to compare and contrast two or more data sets, utilizing the mean and median for center and the interquartile range and standard deviation for variability. | Algebra I Textbook | 4: Describing Distributions | 1: One-Variable Statistics | 1: Way to Represent!: Graphically Representing Data pp. M4-7-M4-16 |
| | | | | | 2: A Skewed Reality: Determining the Better Measure of Center and Spread for a Data Set pp. M4-17-M4-34 |
| | | Algebra I MATHia Software | 4: Describing Distributions | 1: Numerical Summary Statistics | 3: Dare to Compare: Comparing Data Sets pp. M4-35-M4-44 |
| | | | | | 1: Determining Appropriate Measures of Center |
| 3: Comparing and Interpreting Measures of Center | | | | | |
| GEO.10a | Explain how standard deviation develops from mean absolute deviation. | Algebra I Textbook | 4: Describing Distributions | 1: One-Variable Statistics | 2: A Skewed Reality: Determining the Better Measure of Center and Spread for a Data Set pp. M4-17-M4-34 |
| | | Algebra I MATHia Software | 4: Describing Distributions | 1: Numerical Summary Statistics | 4: Calculating Standard Deviation |
| GEO.10b | Calculate the standard deviation for a data set, using technology where appropriate. | Algebra I Textbook | 4: Describing Distributions | 1: One-Variable Statistics | 2: A Skewed Reality: Determining the Better Measure of Center and Spread for a Data Set pp. M4-17-M4-34 |
| | | Algebra I MATHia Software | 4: Describing Distributions | 1: Numerical Summary Statistics | 4: Calculating Standard Deviation |

| Standard ID | Description | Location | Module | Topic (Textbook)/ Unit (MATHia Software) | Lesson (Textbook) / Workspace (MATHia Software) |
|----------------|--|---------------------------|-----------------------------|---|---|
| GEO.11 | Interpret differences in shape, center, and spread in the context of data sets, accounting for possible effects of extreme data points (outliers) on mean and standard deviation. | Algebra I Textbook | 4: Describing Distributions | 1: One-Variable Statistics | 2: A Skewed Reality: Determining the Better Measure of Center and Spread for a Data Set pp. M4-17–M4-34 |
| | | Algebra I MATHia Software | 4: Describing Distributions | 1: Numerical Summary Statistics | 3: Dare to Compare: Comparing Data Sets pp. M4-35–M4-44 |
| | | | | | 2: Measuring the Effects of Changing Data Sets |
| | | | | | 3: Comparing and Interpreting Measures of Center |
| GEO.12 | Represent data of two quantitative variables on a scatter plot, and describe how the variables are related. | Algebra I Textbook | 1: Searching for Patterns | 3: Linear Regressions | 3: The Residual Effect: Creating Residual Plots pp. M1-197–M1-210 |
| | | | | | 4: To Fit or Not To Fit? That Is The Question!: Using Residual Plots pp. M1-211–M1-222 |
| | | | | | 1: Like a Glove: Least Squares Regressions pp. M1-167–M1-180 |
| | | | | | 2: Gotta Keep It Correlatin': Correlation pp. M1-181–M1-195 |
| | | | | | 3: The Residual Effect: Creating Residual Plots pp. M1-197–M1-210 |
| | | | | | 4: To Fit or Not To Fit? That Is The Question!: Using Residual Plots pp. M1-211–M1-222 |
| GEO.12a | Find a linear function for a scatter plot that suggests a linear association and informally assess its fit by plotting and analyzing residuals, including the squares of the residuals, in order to improve its fit. | Algebra I Textbook | 1: Searching for Patterns | 3: Linear Regressions | 1: Like a Glove: Least Squares Regressions pp. M1-167–M1-180 |
| | | | | | 2: Gotta Keep It Correlatin': Correlation pp. M1-181–M1-195 |
| | | | | | 3: The Residual Effect: Creating Residual Plots pp. M1-197–M1-210 |
| | | | | | 4: To Fit or Not To Fit? That Is The Question!: Using Residual Plots pp. M1-211–M1-222 |
| | | | | | 3: The Residual Effect: Creating Residual Plots pp. M1-197–M1-210 |
| | | | | | 4: To Fit or Not To Fit? That Is The Question!: Using Residual Plots pp. M1-211–M1-222 |
| | | Algebra I MATHia Software | 1: Searching for Patterns | 3: Linear Regression | 1: Exploring Linear Regression |
| | | | | | 2: Using Linear Regression |
| | | | | | 4: Analyzing Residuals of Lines of Best Fit |

| Standard ID | Description | Location | Module | Topic (Textbook)/ Unit (MATHia Software) | Lesson (Textbook) / Workspace (MATHia Software) |
|--|--|--|---------------------------|---|--|
| GEO.12b | Use technology to find the least-squares line of best fit for two quantitative variables. | Algebra I Textbook | 1: Searching for Patterns | 3: Linear Regressions | 1: Like a Glove: Least Squares Regressions pp. M1-167–M1-180 |
| | | | | | 2: Gotta Keep It Correlatin': Correlation pp. M1-181–M1-195 |
| | | | | | 1: Like a Glove: Least Squares Regressions pp. M1-167–M1-180 |
| | | | | | 2: Gotta Keep It Correlatin': Correlation pp. M1-181–M1-195 |
| | | | | | 3: The Residual Effect: Creating Residual Plots pp. M1-197–M1-210 |
| 4: To Fit or Not To Fit? That Is The Question!: Using Residual Plots pp. M1-211–M1-222 | | | | | |
| GEO.13 | Compute (using technology) and interpret the correlation coefficient of a linear relationship. | Algebra I Textbook | 1: Searching for Patterns | 3: Linear Regressions | 2: Gotta Keep It Correlatin': Correlation pp. M1-181–M1-195 |
| | | | | | 2: Gotta Keep It Correlatin': Correlation pp. M1-181–M1-195 |
| | | | | | 3: The Residual Effect: Creating Residual Plots pp. M1-197–M1-210 |
| | | 4: To Fit or Not To Fit? That Is The Question!: Using Residual Plots pp. M1-211–M1-222 | | | |
| | | Algebra I MATHia Software | 1: Searching for Patterns | 3: Linear Regression | 3: Interpreting Lines of Best Fit |
| GEO.14 | Distinguish between correlation and causation. | Algebra I Textbook | 1: Searching for Patterns | 3: Linear Regressions | 2: Gotta Keep It Correlatin': Correlation pp. M1-181–M1-195 |
| | | | | | 2: Gotta Keep It Correlatin': Correlation pp. M1-181–M1-195 |
| GEO.15 | Evaluate possible solutions to real-life problems by developing linear models of contextual situations and using them to predict unknown values. | Algebra I Textbook | 1: Searching for Patterns | 3: Linear Regressions | 1: Like a Glove: Least Squares Regressions pp. M1-167–M1-180 |
| | | | | | 1: Like a Glove: Least Squares Regressions pp. M1-167–M1-180 |
| | | | | | 2: Gotta Keep It Correlatin': Correlation pp. M1-181–M1-195 |
| | | | | | 3: The Residual Effect: Creating Residual Plots pp. M1-197–M1-210 |

| Standard ID | Description | Location | Module | Topic (Textbook)/ Unit (MATHia Software) | Lesson (Textbook) / Workspace (MATHia Software) |
|---------------------------|--|---------------------------|----------------------------|---|--|
| GEO.15 | Evaluate possible solutions to real-life problems by developing linear models of contextual situations and using them to predict unknown values. | Algebra I Textbook | 1: Searching for Patterns | 3: Linear Regressions | 4: To Fit or Not To Fit? That Is The Question!: Using Residual Plots pp. M1-211-M1-222 |
| | | Algebra I MATHia Software | 1: Searching for Patterns | 3: Linear Regression | 2: Using Linear Regression |
| GEO.15a | Use the linear model to solve problems in the context of the given data. | Algebra I Textbook | 1: Searching for Patterns | 3: Linear Regressions | 1: Like a Glove: Least Squares Regressions pp. M1-167-M1-180 |
| | | | | | 1: Like a Glove: Least Squares Regressions pp. M1-167-M1-180 |
| | | | | | 2: Gotta Keep It Correlatin': Correlation pp. M1-181-M1-195 |
| | | | | | 3: The Residual Effect: Creating Residual Plots pp. M1-197-M1-210 |
| Algebra I MATHia Software | 1: Searching for Patterns | 3: Linear Regression | 2: Using Linear Regression | | |
| GEO.15b | Interpret the slope (rate of change) and the intercept (constant term) of a linear model in the context of the given data. | Algebra I Textbook | 1: Searching for Patterns | 3: Linear Regressions | 1: Like a Glove: Least Squares Regressions pp. M1-167-M1-180 |
| | | | | | 1: Like a Glove: Least Squares Regressions pp. M1-167-M1-180 |
| | | | | | 2: Gotta Keep It Correlatin': Correlation pp. M1-181-M1-195 |
| | | | | | 3: The Residual Effect: Creating Residual Plots pp. M1-197-M1-210 |
| | | | | | 4: To Fit or Not To Fit? That Is The Question!: Using Residual Plots pp. M1-211-M1-222 |
| | | Algebra I MATHia | 1: Searching for Patterns | 3: Linear Regression | 1: Exploring Linear Regression 3: Interpreting Lines of Best Fit |

| Standard ID | Description | Location | Module | Topic (Textbook)/ Unit (MATHia Software) | Lesson (Textbook) / Workspace (MATHia Software) |
|----------------------------------|--|-----------------------------------|--|---|--|
| GEO.16 | Identify the shapes of two-dimensional cross-sections of three-dimensional objects, and identify three-dimensional objects generated by rotations of two-dimensional objects. | Geometry Textbook | 4: Connecting Geometric and Algebraic Descriptions | 1: Circles and Volume | 3: Do Me a Solid: Building Three-Dimensional Figures pp. M4-45–M4-64 |
| | | | | 2: Conic Sections | 1: Any Way You Slice It: Cross-Sections pp. M4-101–M4-118 |
| | | Geometry MATHia Software | 4: Connecting Geometric and Algebraic Descriptions | 2: Volume | 1: Creating Three-Dimensional Shapes from Two-Dimensional Figures |
| | | | | 3: Three-Dimensional Figures | 1: Visualizing Cross Sections of Three-Dimensional Shapes |
| GEO.17 | Model and solve problems using surface area and volume of solids, including composite solids and solids with portions removed. | Geometry 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. M4-65–M4-88 |
| | | | | Geometry MATHia Software | 4: Connecting Geometric and Algebraic Descriptions |
| | | 3: Calculating Volume of Pyramids | | | |
| | | 4: Calculating Volume of Cones | | | |
| 5: Calculating Volume of Spheres | | | | | |
| GEO.17a | Give an informal argument for the formulas for the surface area and volume of a sphere, cylinder, pyramid, and cone using dissection arguments, Cavalieri’s Principle, and informal limit arguments. | Geometry Textbook | 4: Connecting Geometric and Algebraic Descriptions | 1: Circles and Volume | 1: All Circles Great and Small: Similarity Relationships in Circles pp. M4-7–M4-24 |
| | | | | | 2: A Slice of Pi: Sectors and Segments of a Circle pp. M4-25–M4-44 |
| | | | | | 3: Do Me a Solid: Building Three-Dimensional Figures pp. M4-45–M4-64 |
| | | | | | 4: Get to the Point: Building Volume and Surface Area Formulas for Pyramids, Cones, and Spheres pp. M4-65–M4-88 |
| GEO.17b | Apply geometric concepts to find missing dimensions to solve surface area or volume problems. | Geometry 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. M4-65–M4-88 |
| | | | | | Geometry MATHia Software |
| | | 3: Calculating Volume of Pyramids | | | |
| | | 4: Calculating Volume of Cones | | | |
| 5: Calculating Volume of Spheres | | | | | |

| Standard ID | Description | Location | Module | Topic (Textbook)/ Unit (MATHia Software) | Lesson (Textbook) / Workspace (MATHia Software) |
|--|--|--------------------------|--|---|--|
| GEO.18 | Given the coordinates of the vertices of a polygon, compute its perimeter and area using a variety of methods, including the distance formula and dynamic geometry software, and evaluate the accuracy of the results. | Geometry 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. M1-69–M1-96 |
| | | Geometry 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 | | | | | |
| GEO.19 | Derive and apply the relationships between the lengths, perimeters, areas, and volumes of similar figures in relation to their scale factor. | Geometry Textbook | 3: Investigating Proportionality | 1: Similarity | 1: Big, Little, Big, Little: Dilating Figures to Create Similar Figures pp. M3-7–M3-21 |
| GEO.20 | Derive and apply the formula for the length of an arc and the formula for the area of a sector. | Geometry Textbook | 4: Connecting Geometric and Algebraic Descriptions | 1: Circles and Volume | 1: All Circles Great and Small: Similarity Relationships in Circles pp. M4-7–M4-24 |
| | | Geometry MATHia | 4: Connecting Geometric and Algebraic Descriptions | 1: Arc Length | 2: A Slice of Pi: Sectors and Segments of a Circle pp. M4-25–M4-44 |
| | | | | | 1: Relating Arc Length and Radius |
| 3: Calculating the Area of a Sector | | | | | |
| GEO.21 | Represent transformations and compositions of transformations in the plane (coordinate and otherwise) using tools such as tracing paper and geometry software. | Geometry Textbook | 1: Reasoning with Shapes | 3: Rigid Motions on a Plane | 2: Bow Thai: Translations as Functions pp. M1-217–M1-228 |
| | | | | | 3: Staring Back at Me: Reflections as Functions pp. M1-229–M1-242 |
| | | | | | 4: Turn Yourself Around: Rotations as Functions pp. M1-243–M1-256 |
| GEO.21a | Describe transformations and compositions of transformations as functions that take points in the plane as inputs and give other points as outputs, using informal and formal notation. | Geometry Textbook | 1: Reasoning with Shapes | 3: Rigid Motions on a Plane | 2: Bow Thai: Translations as Functions pp. M1-217–M1-228 |
| | | | | | 3: Staring Back at Me: Reflections as Functions pp. M1-229–M1-242 |
| | | | | | 4: Turn Yourself Around: Rotations as Functions pp. M1-243–M1-256 |
| GEO.21b | Compare transformations which preserve distance and angle measure to those that do not. | Geometry Textbook | 1: Reasoning with Shapes | 3: Rigid Motions on a Plane | 2: Bow Thai: Translations as Functions pp. M1-217–M1-228 |
| | | | | | 3: Staring Back at Me: Reflections as Functions pp. M1-229–M1-242 |
| | | | | | 4: Turn Yourself Around: Rotations as Functions pp. M1-243–M1-256 |

| Standard ID | Description | Location | Module | Topic (Textbook)/ Unit (MATHia Software) | Lesson (Textbook) / Workspace (MATHia Software) |
|----------------|---|--------------------------|--------------------------|---|---|
| GEO.22 | Explore rotations, reflections, and translations using graph paper, tracing paper, and geometry software. | Geometry 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. M1-205–M1-216 2: Bow Thai: Translations as Functions pp. M1-217–M1-228 3: Staring Back at Me: Reflections as Functions pp. M1-229–M1-242 4: Turn Yourself Around: Rotations as Functions pp. M1-243–M1-256 |
| | | Geometry MATHia Software | 1: Reasoning with Shapes | 5: Rigid Motion | 2: Exploring Rigid Motions and Dilations |
| GEO.22a | Given a geometric figure and a rotation, reflection, or translation, draw the image of the transformed figure using graph paper, tracing paper, or geometry software. | Geometry Textbook | 1: Reasoning with Shapes | 1: Using a Rectangular Coordinate System 3: Rigid Motions on a Plane | 2: Hip to Be Square: Constructing a Coordinate Plane pp. M1-17–M1-31 3: Staring Back at Me: Reflections as Functions pp. M1-229–M1-242 4: Turn Yourself Around: Rotations as Functions pp. M1-243–M1-256 |
| | | Geometry MATHia | 1: Reasoning with Shapes | 5: Rigid Motion | 2: Exploring Rigid Motions and Dilations 3: Specifying a Sequence of Transformations |
| GEO.22b | Specify a sequence of rotations, reflections, or translations that will carry a given figure onto another. | Geometry 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. M1-205–M1-216 3: Staring Back at Me: Reflections as Functions pp. M1-229–M1-242 4: Turn Yourself Around: Rotations as Functions pp. M1-243–M1-256 |
| | | Geometry MATHia Software | 1: Reasoning with Shapes | 5: Rigid Motion | 3: Specifying a Sequence of Transformations |
| GEO.22c | Draw figures with different types of symmetries and describe their attributes. | Geometry Textbook | 1: Reasoning with Shapes | 3: Rigid Motions on a Plane | 5: OKEECHOBEE: Reflectional and Rotational Symmetry pp. M1-257–M1-266 |
| | | Geometry MATHia Software | 1: Reasoning with Shapes | 5: Rigid Motion | 4: Rotations and Reflections on the Plane 5: Reflectional Symmetry 6: Rotational Symmetry |

| Standard ID | Description | Location | Module | Topic (Textbook)/ Unit (MATHia Software) | Lesson (Textbook) / Workspace (MATHia Software) |
|----------------|--|--------------------------|----------------------------------|---|---|
| GEO.23 | Develop definitions of rotation, reflection, and translation in terms of angles, circles, perpendicular lines, parallel lines, and line segments. | Geometry 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. M1-205–M1-216 |
| | | | | | 2: Bow Thai: Translations as Functions pp. M1-217–M1-228 |
| | | | | | 3: Staring Back at Me: Reflections as Functions pp. M1-229–M1-242 |
| | | | | | 4: Turn Yourself Around: Rotations as Functions pp. M1-243–M1-256 |
| | | Geometry MATHia Software | 1: Reasoning with Shapes | 5: Rigid Motion | 1: Developing Definitions of Rigid Motions |
| GEO.24 | Define congruence of two figures in terms of rigid motions (a sequence of translations, rotations, and reflections); show that two figures are congruent by finding a sequence of rigid motions that maps one figure to the other. | Geometry 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. M1-205–M1-216 |
| | | | 2: Establishing Congruence | 1: Congruence Through Transformations | 3: I Never Forget a Face: Using Triangle Congruence to Solve Problems pp. M2-39–M2-50 |
| GEO.25 | Verify criteria for showing triangles are congruent using a sequence of rigid motions that map one triangle to another. | Geometry Textbook | 2: Establishing Congruence | 1: Congruence Through Transformations | 2: ASA, SAS, and SSS: Proving Triangle Congruence Theorems pp. M2-23–M2-37 |
| | | Geometry MATHia Software | 2: Establishing Congruence | 1: Triangle Congruence | 1: Introduction to Triangle Congruence |
| GEO.25a | Verify that two triangles are congruent if and only if corresponding pairs of sides and corresponding pairs of angles are congruent. | Geometry Textbook | 2: Establishing Congruence | 1: Congruence Through Transformations | 2: ASA, SAS, and SSS: Proving Triangle Congruence Theorems pp. M2-23–M2-37 |
| | | Geometry MATHia Software | 2: Establishing Congruence | 1: Triangle Congruence | 1: Introduction to Triangle Congruence |
| GEO.25b | Verify that two triangles are congruent if (but not only if) the following groups of corresponding parts are congruent: angle-side-angle (ASA), side-angle-side (SAS), side-side-side (SSS), and angle-angle-side (AAS). | Geometry Textbook | 2: Establishing Congruence | 1: Congruence Through Transformations | 2: ASA, SAS, and SSS: Proving Triangle Congruence Theorems pp. M2-23–M2-37 |
| | | Geometry MATHia Software | 2: Establishing Congruence | 1: Triangle Congruence | 1: Introduction to Triangle Congruence |
| GEO.26a | Verify that a dilation takes a line not passing through the center of the dilation to a parallel line, and leaves a line passing through the center unchanged. | Geometry Textbook | 3: Investigating Proportionality | 1: Similarity | 3: Keep It in Proportion: Theorems About Proportionality pp. M3-37–M3-64 |

| Standard ID | Description | Location | Module | Topic (Textbook)/ Unit (MATHia Software) | Lesson (Textbook) / Workspace (MATHia Software) |
|----------------|---|--------------------------|----------------------------------|---|--|
| GEO.26b | Verify that the dilation of a line segment is longer or shorter in the ratio given by the scale factor. | Geometry Textbook | 3: Investigating Proportionality | 1: Similarity | 1: Big, Little, Big, Little: Dilating Figures to Create Similar Figures pp. M3-7–M3-21 |
| GEO.27 | Given two figures, determine whether they are similar by identifying a similarity transformation (sequence of rigid motions and dilations) that maps one figure to the other. | Geometry Textbook | 3: Investigating Proportionality | 1: Similarity | 1: Big, Little, Big, Little: Dilating Figures to Create Similar Figures pp. M3-7–M3-21 |
| | | Geometry MATHia Software | 3: Investigating Proportionality | 1: Similar Triangles | 2: Similar Triangles or Not?: Establishing Triangle Similarity Criteria pp. M3-23–M3-35 |
| GEO.28 | Verify criteria for showing triangles are similar using a similarity transformation (sequence of rigid motions and dilations) that maps one triangle to another. | Geometry Textbook | 3: Investigating Proportionality | 1: Similarity | 1: Big, Little, Big, Little: Dilating Figures to Create Similar Figures pp. M3-7–M3-21 |
| | | | | | 2: Similar Triangles or Not?: Establishing Triangle Similarity Criteria pp. M3-23–M3-35 |
| GEO.28a | Verify that two triangles are similar if and only if corresponding pairs of sides are proportional and corresponding pairs of angles are congruent. | Geometry Textbook | 3: Investigating Proportionality | 1: Similarity | 1: Big, Little, Big, Little: Dilating Figures to Create Similar Figures pp. M3-7–M3-21 |
| | | | | | 2: Similar Triangles or Not?: Establishing Triangle Similarity Criteria pp. M3-23–M3-35 |
| GEO.28b | Verify that two triangles are similar if (but not only if) two pairs of corresponding angles are congruent (AA), the corresponding sides are proportional (SSS), or two pairs of corresponding sides are proportional and the pair of included angles is congruent (SAS). | Geometry Textbook | 3: Investigating Proportionality | 1: Similarity | 2: Similar Triangles or Not?: Establishing Triangle Similarity Criteria pp. M3-23–M3-35 |
| | | | | | 4: This Isn't Your Average Mean: More Similar Triangles pp. M3-65–M3-78 |
| GEO.29a | Construct figures, using technology and other tools, in order to make and test conjectures about their properties. | Geometry Textbook | 1: Reasoning with Shapes | 1: Using a Rectangular Coordinate System | 2: Hip to Be Square: Constructing a Coordinate Plane pp. M1-17–M1-31 |
| | | | | 2: Composing and Decomposing Shapes | 3: Ts and Train Tracks: Parallel and Perpendicular Lines pp. M1-33–M1-50 |
| GEO.29b | Identify different sets of properties necessary to define and construct figures. | Geometry Textbook | 1: Reasoning with Shapes | 2: Composing and Decomposing Shapes | 3: Into the Ring: Constructing an Inscribed Regular Polygon pp. M1-145–M1-160 |

| Standard ID | Description | Location | Module | Topic (Textbook)/ Unit (MATHia Software) | Lesson (Textbook) / Workspace (MATHia Software) | | |
|----------------|---|--------------------------|----------------------------|---|--|--|---|
| GEO.30 | Develop and use precise definitions of figures such as angle, circle, perpendicular lines, parallel lines, and line segment, based on the undefined notions of point, line, distance along a line, and distance around a circular arc. | Geometry Textbook | 1: Reasoning with Shapes | 1: Using a Rectangular Coordinate System | 2: Hip to Be Square: Constructing a Coordinate Plane pp. M1-17–M1-31 | | |
| | | | | 3: Rigid Motions on a Plane | 1: Put Your Input In, Take Your Output Out: Geometric Components of Rigid Motions pp. M1-205–M1-216 | | |
| | | Geometry MATHia Software | 1: Reasoning with Shapes | 1: Lines, Rays, Segments, and Angles | 1: Naming Lines, Rays, Segments, and Angles 2: Working with Measures of Segments and Angles | | |
| | | | | 2: Establishing Congruence | 1: Introduction to Proofs 2: Completing Measure Proofs | | |
| GEO.31a | Investigate, prove, and apply theorems about lines and angles, including but not limited to: vertical angles are congruent; when a transversal crosses parallel lines, alternate interior angles are congruent and corresponding angles are congruent; the points on the perpendicular bisector of a line segment are those equidistant from the segment's endpoints. | Geometry Textbook | 2: Establishing Congruence | 2: Justifying Line and Angle Relationships | 1: Proof Positive: Forms of Proof pp. M2-61–M2-82 | | |
| | | | | | 2: A Parallel Universe: Proving Parallel Line Theorems pp. M2-83–M2-101 | | |
| | | | | | 4: Identical Twins: Perpendicular Bisector and Isosceles Triangle Theorems pp. M2-119–M2-139 | | |
| | | Geometry 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 Angle Measures 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 |

| Standard ID | Description | Location | Module | Topic (Textbook)/ Unit (MATHia Software) | Lesson (Textbook) / Workspace (MATHia Software) |
|--|--|--------------------------|----------------------------------|--|--|
| GEO.31b | Investigate, prove, and apply theorems about triangles, including but not limited to: the sum of the measures of the interior angles of a triangle is 180° ; the base angles of isosceles triangles are congruent; the segment joining the midpoints of two sides of a triangle is parallel to the third side and half the length; a line parallel to one side of a triangle divides the other two proportionally, and conversely; the Pythagorean Theorem using triangle similarity. | Geometry Textbook | 2: Establishing Congruence | 2: Justifying Line and Angle Relationships | 3: Ins and Outs: Interior and Exterior Angles of Polygons pp. M2-103–M2-118 |
| | | | | 3: Using Congruence Theorems | 4: Identical Twins: Perpendicular Bisector and Isosceles Triangle Theorems pp. M2-119–M2-139 |
| | | | 3: Investigating Proportionality | 1: Similarity | 1: SSS, SAS, AAS, . . . S.O.S!: Using Triangle Congruence to Determine Relationships Between Segments pp. M2-185–M2-196 |
| | | | | | 3: Keep It in Proportion: Theorems About Proportionality pp. M3-37–M3-64 |
| | | Geometry MATHia Software | 2: Establishing Congruence | 1: Triangle Congruence | 4: This Isn't Your Average Mean: More Similar Triangles pp. M3-65–M3-78 |
| | | | | 6: Proving Triangles Congruent | 2: Using Triangle Congruence |
| | | | | 7: Using Triangle Congruence | 1: Proving Triangles Congruent using SAS and SSS |
| | | | | | 2: Proving Triangles Congruent using AAS and ASA |
| | | | | | 1: Proving Theorems using Congruent Triangles |
| | | | | 8: Special Right Triangles | 2: Proving Triangle Theorems |
| 10: Extending Triangle Congruence Theorems | 3: Using Triangle Theorems | | | | |
| GEO.31c | Investigate, prove, and apply theorems about parallelograms and other quadrilaterals, including but not limited to both necessary and sufficient conditions for parallelograms and other quadrilaterals, as well as relationships among kinds of quadrilaterals. | Geometry Textbook | 2: Establishing Congruence | 3: Using Congruence Theorems | 2: Props To You: Props To You Properties of Quadrilaterals pp. M2-197–M2-223 |
| | | | | Geometry MATHia Software | 2: Establishing Congruence |
| | | | | | |
| | | | | | 1: Proofs about Parallelograms |

| Standard ID | Description | Location | Module | Topic (Textbook)/ Unit (MATHia Software) | Lesson (Textbook) / Workspace (MATHia Software) |
|--------------------------|---|--------------------------|---|---|--|
| GEO.32 | Use coordinates to prove simple geometric theorems algebraically. | Geometry Textbook | 1: Reasoning with Shapes | 1: Using a Rectangular Coordinate System | 4: Where Has Polly Gone?: Classifying Shapes on the Coordinate Plane pp. M1-51–M1-68 |
| | | | 4: Connecting Geometric and Algebraic Descriptions | 2: Conic Sections | 3: A Blip on the Radar: Determining Points on a Circle pp. M4-133–M4-148 |
| GEO.33 | Prove the slope criteria for parallel and perpendicular lines and use them to solve geometric problems. | Geometry Textbook | 1: Reasoning with Shapes | 1: Using a Rectangular Coordinate System | 3: Ts and Train Tracks: Parallel and Perpendicular Lines pp. M1-33–M1-50 |
| | | | | | 4: Where Has Polly Gone?: Classifying Shapes on the Coordinate Plane pp. M1-51–M1-68 |
| | | | | | 5: In and Out and All About: Area and Perimeter on the Coordinate Plane pp. M1-69–M1-96 |
| | | Geometry MATHia Software | 1: Reasoning with Shapes | 2: Parallel and Perpendicular Lines | 1: Introduction to Parallel and Perpendicular Lines 2: Modeling Parallel and Perpendicular Lines |
| GEO.34 | Use congruence and similarity criteria for triangles to solve problems in real-world contexts. | Geometry Textbook | 2: Establishing Congruence | 3: Using Congruence Theorems | 1: SSS, SAS, AAS, . . . S.O.S!: Using Triangle Congruence to Determine Relationships Between Segments pp. M2-185–M2-196 |
| | | | 3: Investigating Proportionality | 1: Similarity | 4: This Isn't Your Average Mean: More Similar Triangles pp. M3-65–M3-78 5: Run It Up the Flagpole: Application of Similar Triangles pp. M3-79–M3-93 |
| | | Geometry MATHia Software | 2: Establishing Congruence | 8: Special Right Triangles | 2: Calculating the Lengths of Sides of Special Right Triangles |
| | | | 3: Investigating Proportionality | 1: Similar Triangles | 2: Calculating Corresponding Parts of Similar Triangles 3: Proofs Using Similar Triangles |
| | | | 3: Investigating Proportionality | 2: Trigonometry | 1: Three Angle Measure: Introduction to Trigonometry pp. M3-121–M3-135 |
| | | GEO.35a | Derive and apply the constant ratios of the sides in special right triangles (45°-45°-90° and 30°-60°-90°). | Geometry Textbook | 3: Investigating Proportionality |
| Geometry MATHia Software | 2: Establishing Congruence | | | 8: Special Right Triangles | 1: Introduction to Special Right Triangles 2: Calculating the Lengths of Sides of Special Right Triangles |

| Standard ID | Description | Location | Module | Topic (Textbook)/ Unit (MATHia Software) | Lesson (Textbook) / Workspace (MATHia Software) |
|----------------|---|--------------------------|----------------------------------|---|--|
| GEO.35b | Use similarity to explore and define basic trigonometric ratios, including sine ratio, cosine ratio, and tangent ratio. | Geometry Textbook | 3: Investigating Proportionality | 2: Trigonometry | 1: Three Angle Measure: Introduction to Trigonometry pp. M3-121–M3-135 2: The Tangent Ratio: Tangent Ratio, Cotangent Ratio, and Inverse Tangent pp. M3-137–M3-153 3: The Sine Ratio: Sine Ratio, Cosecant Ratio, and Inverse Sine pp. M3-155–M3-169 4: The Cosine Ratio: Cosine Ratio, Secant Ratio, and Inverse Cosine pp. M3-171–M3-185 |
| | | Geometry MATHia Software | 3: Investigating Proportionality | 2: Trigonometric Ratios | 1: Introduction to Trigonometric Ratios |
| GEO.35c | Explain and use the relationship between the sine and cosine of complementary angles. | Geometry Textbook | 3: Investigating Proportionality | 2: Trigonometry | 5: We Complement Each Other: Complement Angle Relationships pp. M3-187–M3-198 |
| | | Geometry MATHia Software | 3: Investigating Proportionality | 2: Trigonometric Ratios | 4: Relating Sines and Cosines of Complementary Angles |
| GEO.35d | Demonstrate the converse of the Pythagorean Theorem. | Geometry Textbook | 1: Reasoning with Shapes | 1: Using a Rectangular Coordinate System | 4: Where Has Polly Gone?: Classifying Shapes on the Coordinate Plane pp. M1-51–M1-68 |
| GEO.35e | Use trigonometric ratios and the Pythagorean Theorem to solve right triangles in applied problems, including finding areas of regular polygons. | Geometry Textbook | 3: Investigating Proportionality | 2: Trigonometry | 2: The Tangent Ratio: Tangent Ratio, Cotangent Ratio, and Inverse Tangent pp. M3-137–M3-153 3: The Sine Ratio: Sine Ratio, Cosecant Ratio, and Inverse Sine pp. M3-155–M3-169 4: The Cosine Ratio: Cosine Ratio, Secant Ratio, and Inverse Cosine pp. M3-171–M3-185 5: We Complement Each Other: Complement Angle Relationships pp. M3-187–M3-198 |
| | | Geometry MATHia Software | 3: Investigating Proportionality | 2: Trigonometric Ratios | 2: Using One Trigonometric Ratio to Solve Problems 3: Using Multiple Trigonometric Ratios to Solve Problems |

| Standard ID | Description | Location | Module | Topic (Textbook)/ Unit (MATHia Software) | Lesson (Textbook) / Workspace (MATHia Software) |
|--|---|----------------------------------|--|---|--|
| GEO.36 | Use geometric shapes, their measures, and their properties to model objects and use those models to solve problems. | Geometry 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. M4-65–M4-88 |
| | | | | 2: Conic Sections | 1: Any Way You Slice It: Cross-Sections pp. M4-101–M4-118 |
| GEO.37 | Investigate and apply relationships among inscribed angles, radii, and chords, including but not limited to: the relationship between central, inscribed, and circumscribed angles; inscribed angles on a diameter are right angles; the radius of a circle is perpendicular to the tangent where the radius intersects the circle. | Geometry Textbook | 2: Establishing Congruence | 2: Justifying Line and Angle Relationships | 5: Corners in a Round Room: Angle Relationships Inside and Outside Circles pp. M2-141–M2-170 |
| | | | | 3: Using Congruence Theorems | 3: Three-Chord Song: Relationships Between Chords pp. M2-225–M2-239 |
| | | Geometry MATHia Software | 1: Reasoning with Shapes | 4: Properties of Circles | 1: Introduction to Circles |
| | | | | 2: Establishing Congruence | 2: Determining Central and Inscribed Angles in Circles |
| | | | | 9: Angles and Circles | 1: Determining Interior and Exterior Angles in Circles |
| 4: Connecting Geometric and Algebraic Descriptions | 1: Arc Length | 2: Determining Chords in Circles | | | |
| GEO.38 | Use the mathematical modeling cycle involving geometric methods to solve design problems. | Geometry 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. M4-65–M4-88 |