

<div style="background-color: #008080; color: white; padding: 10px; display: flex; align-items: center;"> 1 Composing and Decomposing </div>						Strategies													
						Animations	Classifications	Explore Tools	Graphing Tools	Interactive Diagrams	Interactive Worksheets	Proof	Real-World Scenarios	Solvers	Worked Example				
MATHia Unit	MATHia Workspace	Overview	TEKS	Concept Builder	Mastery														

Topic 1: Factors and Multiples																				
Writing Equivalent Expressions Using the Distributive Property	Commutative and Associative Properties	Students follow Worked Examples to rewrite expressions using the commutative and associative properties of addition and multiplication.	6.7D	✓																●
	Exploring the Distributive Property with Numeric Expressions	Students explore modeling the Distributive Property of multiplication over addition with numeric expressions using an interactive grid.	6.7D	✓																
	Using the Distributive Property with Numeric Expressions	Students practice applying different distributive properties (multiplication over addition, division over addition) to rewrite numeric expressions and calculate efficiently.	6.7D	✓																
Identifying Common Factors and Common Multiples	Prime Factorization	Students create a factor tree to show the prime factorization of a number less than 100. They use the factor tree to evaluate the validity of statements about the multiplicative structure of the number.	6.7A																	
	Determining the LCM or GCF of Two Numbers	Students use given factor trees to determine the least common multiple of two numbers less than or equal to 12 or the greatest common factor of two numbers less than or equal to 100. For the LCM, students identify the shared and non-shared prime factors and calculate the product. For the GCM, students identify the shared prime factors and calculate the product. They then use the non-shared prime factors to determine the quotient of each number divided by the GCF.	6.7A																	

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Identifying Common Factors and Common Multiples (continued)	Using the GCF to Rewrite the Sum of Two Numbers	Students use an Explore Tool to think about the decomposition of the sum of two numbers into a product of a factor and a sum. They review the Distributive Property and GCF and analyze worked examples that show them how to rewrite the sum of two whole numbers using the Distributive Property and any common factor, and using the Distributive Property and the GCF. Students rewrite the sum of two whole numbers using the Distributive Property and the GCF.	6.7D	✓				•							•

Topic 2: Positive Rational Numbers															
MATHia Unit	MATHia Workspace	Overview	TEKS	Concept Builder	Mastery	Animations	Classifications	Explore Tools	Graphing Tools	Interactive Diagrams	Interactive Worksheets	Proof	Real-World Scenarios	Solvers	Worked Example
Multiplying Fractions	Multiplying by Fractions to Increase or Decrease Quantities	Students watch an animation showing how multiplying by a fraction can increase a quantity, decrease a quantity, or keep a quantity the same. Students reason with fractional factors that are less than 1, equal to 1, or greater than 1 to determine how they affect the resulting product.	6.3.B	✓		•									
Fraction by Fraction Division	Representing Fraction Division	Students watch an animation and answer questions about modeling fraction division.	6.2E	✓		•									
	Interpreting Remainders Using Models	Students compute quotients of fractions using visual fraction models.	6.2E		✓										
	Developing the Fraction Division Algorithm	Students develop an understanding of the algorithm for fraction division through worked examples and the completion of partial Worked Examples.	6.3A	✓											•
	Multiplying and Dividing Rational Numbers	Students calculate products and quotients of fractions, including mixed numbers and improper fractions.	6.3E		✓									•	

Topic 3: Angles and Shapes															
MATHia Unit	MATHia Workspace	Overview	TEKS	Concept Builder	Mastery	Animations	Classifications	Explore Tools	Graphing Tools	Interactive Diagrams	Interactive Worksheets	Proof	Real-World Scenarios	Solvers	Worked Example
Area of Triangles and Quadrilaterals	Calculating Area of Rectangles	Students calculate the areas of rectangles and squares in mathematical and real-world situations.	6.8C		✓								•	•	

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Area of Triangles and Quadrilaterals (continued)	Developing Area Formulas	Students watch animations and answer questions to derive the formulas used to calculate the areas of parallelograms, triangles, and trapezoids. They use the formulas to represent area problems as equations using given dimensions in real-world scenarios.	6.8B 6.8C	✓		•									•	
	Calculating Area of Various Figures	Students calculate the areas of parallelograms, trapezoids, and triangles in mathematical and real-world situations.	6.8D		✓										•	•
Composite Figures	Solving Area Problems	Students use the areas of rectangles and triangles to solve area problems with composite figures.	7.9C	✓												
	Calculating Area of Composite Figures	Students practice calculating the area of various mathematical and real-world composite figures.	7.9C		✓										•	

Topic 4: Decimals and Volume																
Multiplying Decimals	Exploring Decimal Facts	Students use an interactive grid to explore multiplying and dividing with decimals less than 1 to the tenths place.	6.3E	✓				•								
	Patterns with Products and Quotients	From a given product, students use patterns to compute additional related products and quotients.	6.3E		✓											
	Multiplying Decimals	Students investigate multiplying multi-digit decimals by following worked examples, completing partially-completed Worked Examples, and solving problems.	6.3E	✓												•
	Decimal Products	Students practice multiplying multi-digit decimals using the standard algorithm.	6.3E		✓											
Dividing Decimals	Dividing Decimals	Students investigate dividing multi-digit whole numbers and decimals by following Worked Examples, completing partially-completed Worked Examples, and solving problems.	6.3E	✓												•
	Whole Number and Decimal Quotients	Students practice dividing whole numbers and decimals using the standard algorithm.	6.3E		✓											

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Dividing Decimals (continued)	Solving Real-World Problems Using Decimal Operations	Students choose the operation and solve decimal addition, subtraction, multiplication, and division problems in context. Two-step problems (e.g., adding and then dividing).	6.3E		✓											•	
Volume of Right Rectangular Prisms	Determining Volume Using Unit Fraction Cubes	Students watch an animation, which provides an example of how to determine the unit fraction dimensions of a cube to fill a rectangular prism with fractional edge lengths. Students determine the volumes of various rectangular prisms with different fractional edge lengths.	6.8D	✓		•											
	Calculating Volume of Right Rectangular Prisms	Students determine the volume of right rectangular prisms.	6.8C 6.8D		✓										•	•	
Surface Area Using Nets	Determining Surface Area Using Nets	Students watch an animation showing how real-world objects can be represented by three-dimensional solid figures and how solid figures can be taken apart to create two-dimensional nets. Students use nets to determine the surface areas of right rectangular prisms and square pyramids, and they identify faces, edges, and vertices of solid figures.	7.9D	✓		•									•		

2		Relating Quantities				Strategies											
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Topic 1: Ratios																	
Introduction to Ratios	Differentiating Additive and Multiplicative Relationships	Students analyze scenarios and decide if the scenarios are examples of additive or multiplicative reasoning.	6.4A		✓												
	Understanding Ratio Relationships	Students develop conceptual understanding of ratio, the multiplicative nature of ratios, the different notation used for ratio, and part-to-part versus part-to-whole ratios.	6.4A 6.4B 6.4C 6.4D	✓													
Determining Equivalent Ratios	Introduction to Double Number Lines	Students use a ruler as a model of a real-world double number line to determine equivalent ratios. They analyze a Worked Example demonstrating equivalent ratios on a double number line. Students use a double number line modeling ratios in a scenario to answer questions.	6.4E 6.5A	✓													
	Using Double Number Lines to Determine Equivalent Ratios	Students plot a given ratio on a double number line. They then use the double number line to scale up or down to determine the unknown elements of equivalent ratios and rates.	6.4B 6.5A		✓												
	Problem Solving with Equivalent Ratios and Rates using Double Number Lines	Students use a double number line to solve problems involving equivalent ratios and rates.	6.4B 6.5A		✓												
Using Tables to Represent Equivalent Ratios	Introduction to Ratio Tables	Students analyze a Worked Example that shows scaling up and down with a ratio table. They answer scaffolded questions to determine equivalent values in a ratio table. Students complete a table of equivalent ratios modeling a given scenario.	6.5A	✓													
	Using Tables to Determine Equivalent Ratios	Students use a table to determine the unknown parts of equivalent ratios and rates.	6.4B 6.5A		✓												
	Problem Solving with Equivalent Ratios and Rates using Tables	Students use a table to solve problems involving equivalent ratios and rates.	6.4B 6.5A		✓												

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Graphs of Ratios	Using Graphs to Determine Equivalent Ratios	Students plot equivalent ratios and rates on a double number line. They then transfer those ratios or rates to a graph. Finally, students plot an equivalent ratio on the graph.	6.5A		✓					•					•	
	Problem Solving with Equivalent Ratios and Rates using Graphs	Students use a graph to solve problems involving equivalent ratios and rates.	6.4B 6.5A		✓					•					•	

Topic 2: Percents																	
Percent, Fraction, and Decimal Equivalence	Percent Models	Students watch animations and answer questions about percent models. They write fractional and decimal equivalents of percent models. Students estimate percents using models. They relate benchmark percents and fractions.	6.4E 6.4F 6.4G	✓											•		
	Fraction, Decimal, Percent Conversions	Students convert between fractions, decimals, and percents. They use the equivalent representations to answer comparison questions.	6.4E 6.5C 6.4G	✓												•	•
Determining the Part and the Whole in Percent Problems	Determining a Part Given a Percent and a Whole	Students solve real-world percent problems by using bar models, using equivalent fractions, and determining a fraction of a quantity. The problems involve determining a part given the whole and a percent.	6.4F 6.4G 6.5B	✓												•	•
	Determining a Whole Given a Percent and a Part	Students solve real-world ratio problems using equivalent fractions and models. The problems involve determining the whole given a part and a percent.	6.4F 6.4G 6.5B	✓												•	•
	Calculating Parts and Wholes in Percent Problems	Students use equivalent fractions to solve for part, whole, or percent values in problems, given the other two values.	6.4G 6.5B			✓											

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Topic 3: Unit Rates and Conversions																	
Using Ratio Reasoning to Convert Units	Converting Within Systems	Students use ratios and dimensional analysis to perform one-step measurement conversions within the Customary and metric measurement systems.	6.4H	✓													●
	Converting Between Systems	Students use ratios and dimensional analysis to perform one-step and multi-step measurement conversions. Students convert between Customary and metric units.	7.4E	✓													
Introduction to Unit Rates	Understanding Unit Rates	Students sort rates by whether or not they are unit rates. They use models to estimate unit rates before determining the actual unit rate. Students write two different unit rates for situations relating quantities.	6.4D	✓			●									●	●
	Determining and Comparing Unit Rates	Students develop fluency in determining and comparing unit rates.	6.4B 6.4D		✓											●	

3		Moving Beyond Positive Quantities					Strategies										
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Topic 1: Signed Numbers and the Four Quadrants																		
Introduction to Negative Numbers	Introduction to Negative Numbers	Students learn about numbers and their opposites by watching an animation and answering questions.	6.2B	✓		•										•	•	
	Representing Integers on Number Lines	Students explore integer opposites and inequality statements and relationships involving integers through an interactive tool.	6.2C	✓			•	•										
	Graphing Inequalities with Rational Numbers	Students graph simple inequalities involving rational numbers on a number line.	6.2C		✓				•									
Absolute Value	Using Absolute Value	Students develop an understanding of absolute value as the distance of a number from 0 by watching an animation and answering questions. Students explore this concept in mathematical and real-world situations.	6.2C	✓		•										•	•	
Rational Number System	Classifying Rational Numbers	Students write numbers in the form a/b to explore rational numbers. They interpret a Venn diagram showing the relationship of rational numbers, integers, and whole numbers. Finally, students classify rational numbers using the Venn diagram.	6.2A 7.2A	✓													•	
Extending the Coordinate Plane	Exploring Symmetry on the Coordinate Plane	Students reflect points across the x -axis, across the y -axis, and across both axes using an interactive grapher and consider the impact on the ordered pairs.	6.11A	✓														
	Identifying and Interpreting Ordered Pairs	Students analyze Worked Examples and answer questions about points on the coordinate plane in mathematical and real-world contexts.	6.11A	✓													•	•
	Plotting Points	Students identify the coordinates of plotted points and sort the points according to their quadrant location.	6.11A	✓													•	

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Graphing Geometric Figures	Drawing Polygons on the Coordinate Plane	Students use the interactive grapher to identify vertices of polygons on the coordinate plane and write the coordinates. They determine the horizontal or vertical side lengths of polygons on the coordinate plane.	6.11A	✓					●				●		●

Topic 2: Operating with Integers															
Using Models to Understand Integers	Understanding Opposites	Students watch an animation that introduces opposite values and describes how opposite values on a number line have the same absolute value. The animation explains why direction and the meaning of 0 are important when thinking about opposite quantities in situations. Students determine the opposites of numbers, show that the sum of a number and its opposite is 0, and use what they know about opposites to add positive and negative numbers in context.	6.2B	✓			●				●				
Adding and Subtracting Integers	Adding and Subtracting Negative Integers	Students use an interactive number line to add and subtract negative numbers.	6.3C	✓			●								
	Using Number Lines to Add and Subtract Integers	Students practice adding and subtracting on number lines using a similar model to the one they used on the interactive number line.	6.3C		✓			●				●			
	Developing Algorithms for Adding and Subtracting Integers	Students connect number line models of sums of integers with the same sign to an algorithm for adding integers with the same sign. They do the same for the sums of integers with different signs. Students then notice that the models for subtracting integers are the same as the models for adding the opposite of the number. They rewrite subtraction expressions as addition expressions and use the rules for adding integers to determine the sum.	6.3C	✓											●
Multiplying and Dividing Integers	Integer Products and Quotients	Students use models to determine integer products. They analyze fact families to determine integer quotients.	6.3C	✓			●								●

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Topic 3: Operating with Rational Numbers																			
Quotients of Integers	Converting Rational Numbers to Decimals	Students divide fractions to determine if the resulting equivalent decimal is terminating or repeating.	7.3A 7.3B		✓		•												•
	Rewriting Numeric Expressions	Operating with Numeric Expressions	Students recall the Order of Operations and use the Order of Operations to add, subtract, multiply, and divide with rational numbers and powers. They determine the terms in a numeric expression and combine like terms.	7.3A 7.3B	✓		•												
Evaluating Simple Numeric Expressions with Integers		Students practice evaluating two-step numeric expressions that contain integer values.	7.3A 7.3B		✓														•
Evaluating Numeric Expressions Involving Integers with Parentheses and Exponents		Students practice evaluating numeric expressions that contain integer values, parentheses, and exponents.	7.3A 7.3B		✓														•
Evaluating Simple Numeric Expressions with Rational Numbers		Students practice evaluating a variety of simple numeric expressions that contain integer values.	7.3A 7.3B		✓														•
Evaluating Complex Numeric Expressions with Rational Numbers		Students practice evaluating a variety of complex numeric expressions that contain integer values.	7.3A 7.3B		✓														•
Using Number Properties to Interpret Expressions with Signed Numbers	Problem Solving with Rational Numbers	Students solve contextual problems involving rational numbers and the four operators. They use models representing the relationship between the quantities in the scenario to determine an algebraic expression that can be used to solve the problem. Students interpret the value of the expression in the context of the problem.	7.3A 7.3B		✓													•	
	Operating with Signed Decimals	Students evaluate expressions with two signed decimals using the standard algorithm. They identify the expected sign of the result by reasoning about the signs of the decimals in the expression. Students then evaluate a modified expression before entering the final result with the correct sign.	7.3A 7.3B		✓														

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Using Number Properties to Interpret Expressions with Signed Numbers (continued)	Operating with Signed Fractions	Students evaluate expressions with two signed fractions using the standard algorithm. They identify the expected sign of the result by reasoning about the signs of the fractions in the expression. Students then evaluate a modified expression before entering the final result with the correct sign.	7.3A 7.3B		✓										•

4		Determining Unknown Quantities					Strategies										
							Animations	Classifications	Explore Tools	Graphing Tools	Interactive Diagrams	Interactive Worksheets	Proof	Real-World Scenarios	Solvers	Worked Example	
MATHia Unit	MATHia Workspace	Overview	TEKS	Concept Builder	Mastery												

Topic 1: Expressions																	
Evaluating Numeric Expressions	Writing and Evaluating Exponent Expressions	Students watch an animation showing how an expression with an exponent can be rewritten as a product. Students identify the base and exponent and describe their meaning in exponent expressions. Students rewrite exponent expressions as single values and rewrite products as exponent expressions.	6.7A	✓		•	•										
	Order of Operations	Students learn about the precedence of different operations through manipulating spacing within expressions.	6.7A	✓		•											•
	Applying the Order of Operations	Students practice rewriting expressions using the Order of Operations. Students sort the steps of rewriting numeric expressions.	6.7A	✓			•										
	Using Order of Operations to Evaluate Simple Numeric Expressions	Students practice evaluating two-step numeric expressions.	6.7A		✓												•
	Using Order of Operations to Evaluate Numeric Expressions with Four Operations	Students practice evaluating multi-step numeric expressions.	6.7A		✓												•
	Using Order of Operations to Evaluate Numeric Expressions with Parentheses and Exponents	Students practice evaluating numeric expressions that contain parentheses and exponents.	6.7A		✓												•
	Using Order of Operations to Evaluate Numeric Expressions	Students practice evaluating a variety of numeric expressions.	6.7A		✓												•
Evaluating Algebraic Expressions	Identifying Parts of Simple Algebraic Expressions	Students identify the parts of simple algebraic expressions, including terms, coefficients, sums, factors, products, differences, and quotients.	6.7A	✓			•										•
	Evaluating One-Step Expressions with Whole Numbers	Students determine relevant information from scenarios and use this information to evaluate algebraic expressions with a single operation.	6.7A		✓										•	•	

4		Determining Unknown Quantities				Strategies												
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MATHia Unit	MATHia Workspace	Overview	TEKS	Concept Builder	Mastery													
Evaluating Algebraic Expressions (continued)	Evaluating Two-Step Expressions with Whole Numbers	Students determine relevant information from scenarios and use this information to evaluate algebraic expressions with two operations.	6.7A		✓											•	•	
Equivalent Algebraic Expressions	Modeling Equivalent Algebraic Expressions	Students use an Explore Tool to model algebraic expressions. They use the interactive tool to create and identify equivalent expressions.	6.7C	✓			•	•								•		
	Exploring the Distributive Property with Algebraic Expressions	Students use an interactive tool to explore the Distributive Property with algebraic expressions. They apply the properties of operations to generate equivalent expressions.	6.7D	✓				•										
	Using Order of Operations to Rewrite Simple Algebraic Expressions	Students rewrite algebraic expressions by combining like terms, using number properties, and applying the Order of Operations.	6.7D		✓												•	
	Using Order of Operations to Rewrite Algebraic Expressions with Four Operations	Students rewrite multi-step algebraic expressions by combining like terms, using number properties, and applying the Order of Operations.	6.7D		✓												•	
	Using Order of Operations to Rewrite Algebraic Expressions with Parentheses and Exponents	Students rewrite algebraic expressions involving parentheses and exponents by combining like terms, using number properties, and applying the Order of Operations.	6.7D		✓												•	
	Using Order of Operations to Rewrite Algebraic Expressions	Students rewrite a variety of algebraic expressions by combining like terms, using number properties, and applying the Order of Operations.	6.7D		✓												•	
Using Algebraic Expressions to Analyze and Solve Problems	Using Picture Algebra with Addition, Subtraction, and Multiplication	Students use pictures to represent relationships between two quantities. The relationships may involve addition, subtraction, or multiplication.	6.10A		✓											•		
	Using Picture Algebra with Multiplication, Total Given	Students use pictures to represent multiplicative relationships between two quantities.	6.10A		✓											•		

4		Determining Unknown Quantities				Strategies											
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Using Algebraic Expressions to Analyze and Solve Problems (continued)	Using Picture Algebra with Addition and Subtraction, Total Given	Students use pictures to represent additive relationships between two quantities.	6.10A		✓											•	
	Patterns and One-Step Expressions	Students make tables of values by determining outputs from given inputs. They will use the tables to determine algebraic expressions for the relationships between two quantities.	6.6C 6.9A		✓											•	

Topic 2: Algebraic Expressions																	
Rewriting Variable Expressions Using the Distributive Property	Factoring Linear Expressions	Students model the product of two factors and explore different factors of expressions through the use of an interactive tool. They use the Distributive Property in reverse to factor expressions.	7.3A	✓												•	

Topic 3: Equations																	
Reasoning with Algebraic Expressions	Using Substitution to Identify Solutions to Equations	Students determine which given values for a variable are solutions to an equation.	6.10B	✓												•	•
	Using Substitution to Identify Solutions to Inequalities	Students determine which given values for a variable are solutions to an inequality.	6.10B	✓												•	•
	Graphing Inequalities with Positive Rational Numbers	Given simple verbal inequality statements, students represent the inequalities in symbols and on number lines. They will determine if given values are solutions to the inequalities.	6.9A 6.9B 6.10B			✓										•	
Solving One-Step Addition and Subtraction Equations	Solving One-Step Equations with a Balance	Students use an interactive balance to explore representing and solving one-step addition and multiplication equations. Students are encouraged to determine solutions using the interactive model.	6.10A	✓												•	

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Solving One-Step Addition and Subtraction Equations (continued)	Representing One-Step Equations	Students examine Worked Examples and answer questions about using inverse operations to solve one-step addition and multiplication equations.	6.10A	✓			•									•
	Solving with Addition and Subtraction (No Type In)	Students use an equation solver to solve one-step equations involving addition and subtraction.	6.10A		✓											•
Solving One-Step Multiplication and Division Equations	Solving with Multiplication and Division (No Type In)	Students use an equation solver and inverse operations to solve one-step equations involving multiplication and division.	6.10A		✓											•
	Solving One-Step Equations (Type In)	Students use an equation solver and inverse operations to solve a variety of one-step equations.	6.10A		✓											•
	Solving One-Step Equations with Negative Integers (No Type In)	Students use an equation solver and inverse operations to solve a one-step equations. All problems will contain at least one negative number as either a starting coefficient, constant, or solution.	6.10A		✓											
	Solving One-Step Equations with Negative Integers (Type In)	Students use an equation solver and inverse operations to solve a one-step equations. All problems will contain at least one negative number as either a starting coefficient, constant, or solution.	6.10A		✓											
Solving One-Step Inequalities	Solving One-Step Linear Inequalities	Students solve one-step inequalities algebraically. The inequalities include all four operations but are restricted to positive integers.	6.10A		✓				•							•

Topic 3: Graphing Quantitative Relationships																	
Independent and Dependent Variables	Modeling Scenarios with Equations	Students interpret the model of a one-step linear equation in the context of a scenario. They identify independent and dependent quantities and units from scenarios, tables, and graphs.	6.6A 6.6B	✓												•	•

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Independent and Dependent Variables (continued)	Analyzing Models of One-Step Linear Relationships	Students analyze scenarios of one-step linear relationships. They are given an equation that models the scenario. Students then match the different expressions in the equation to verbal descriptions of these quantities in the context of the scenario.	6.6C		✓		•							•	
Multiple Representations of Equations	Patterns and One-Step Equations	Students make tables of values by determining inputs and outputs from given values. They use the tables to determine algebraic expressions for the relationships between two quantities.	6.6C		✓									•	
	Problem Solving Using Multiple Representations in the First Quadrant	Students create tables of values, write and use algebraic expressions with one operation, and create graphs to represent problem scenarios.	6.6C		✓				•					•	
	Problem Solving with Decimals	Students create tables of values, write and use algebraic expressions with decimals, and create graphs to represent problem scenarios.	6.6C		✓				•					•	
Problem Solving on the Coordinate Plane	Writing an Expression from a Scenario, Table, or Graph	Students match a scenario to an expression that represents the dependent quantity. They complete a table of values given a scenario. Given a table of values, students identify the relationship between the quantities and write an expression to model the independent quantity. Students analyze the relationships in a graph. They use the relationship between the quantities in a graph to write an expression to model the independent quantity.	6.6A 6.6B 6.6C	✓			•							•	•
	Solving One-Step Equations Using Multiple Representations in Four Quadrants	Students will create tables of values, write algebraic expressions with one operation, and create graphs to represent and answer questions about problem scenarios.	6.6C		✓				•					•	

5 Thinking Proportionally		Strategies													
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MATHia Unit	MATHia Workspace	Overview	TEKS	Concept Builder	Mastery										

Topic 1: Circles and Ratio															
Exploring the Ratio of Circle Circumference to Diameter	Investigating Circles	Students identify parts of a circle, analyze the ratio of circumference to diameter of various circles, and then define pi.	7.5B 7.8C 7.9B	✓											
	Developing the Area Formula for Circles	Students informally derive the area of a circle by investigating the relationship between circumference and area. They calculate the area of a circle given different measurements for a radius or diameter.	7.9B	✓											
Solving Area and Circumference Problems	Calculating Circumference and Area of Circles	Students determine the circumference and area of circles using diagrams and real-world objects. Students work strategically to identify measurements and use the formula for circumference and area to solve problems.	7.9B		✓										

Topic 2: Fractional Rates															
Ratio Representations and Conversions	Recognizing Proportional Relationships	Students review proportional relationships by recognizing proportions in ratios, tables, and graphs.	7.4A	✓											
	Determining Characteristics of Graphs of Proportional Relationships	Given graphs, students determine if the graph represents a proportional relationship.	7.4A	✓											
	Converting Between Systems	Students use ratios and dimensional analysis to perform one-step and multi-step measurement conversions. Students convert between Customary and metric units.	7.4E	✓											
Ratios of Fractions	Fractional Rates	Students write fractional unit rates for ratios given as integer quantities. They use models to compute unit rates for ratios with fractions. Students use proportions to compute unit rates for ratios written as complex fractions.	7.4B	✓											
	Determining and Comparing Unit Rates	Students develop fluency in determining and comparing unit rates.	7.4B		✓										

5		Thinking Proportionally				Strategies											
						Animations	Classifications	Explore Tools	Graphing Tools	Interactive Diagrams	Interactive Worksheets	Proof	Real-World Scenarios	Solvers	Worked Example		
MATHia Unit	MATHia Workspace	Overview	TEKS	Concept Builder	Mastery												
Ratios of Fractions (continued)	Solving Proportions Using Equivalent Ratios	Students calculate unknown values in a given scenario using equivalent ratios.	7.4D		✓											•	
Using Means and Extremes to Solve Proportions	Rewriting Proportions as Products	Students notice patterns in proportions written in the form $a : b = c : d$. They rewrite proportions as the product of the means equal to the product of the extremes. Students isolate the variable in proportions with an unknown quantity. They solve problems using proportions and the means and extremes method.	7.4D	✓												•	•
	Solving Proportions Using Means and Extremes	Students calculate unknown values in a given scenario using the means and extremes method.	7.4D		✓											•	

Topic 3: Proportionality																	
MATHia Unit	MATHia Workspace	Overview	TEKS	Concept Builder	Mastery	Animations	Classifications	Explore Tools	Graphing Tools	Interactive Diagrams	Interactive Worksheets	Proof	Real-World Scenarios	Solvers	Worked Example		
Defining Proportional Relationships	Exploring Proportions	Given a scenario, students define the varying quantities, write proportions, and determine the common ratio between the two variables. They then use the proportions to write direct variation equations and solve problems.	7.4C 7.4D	✓												•	•
Determining the Constant of Proportionality	Writing Proportional Relationships with Equations	Given a table, students determine a constant of proportionality, write an associated proportion, graph the points from the table, and write a direct variation equation for the table.	7.4A 7.4C		✓					•						•	
	Converting Between Forms of Proportional Relationships	Given a scenario, students define variables, determine a constant of proportionality, write a proportion, and write a specified direct variation equation.	7.4C		✓											•	
Constant of Proportionality in Multiple Representations	Modeling the Constant of Proportionality	Given a scenario, students complete a table of values, write a direct variation equation, plot values from the table, and draw the line representing the direct variation equation.	7.4A 7.4C		✓					•	•				•	•	

5 Thinking Proportionally		Strategies													
		Animations	Classifications	Explore Tools	Graphing Tools	Interactive Diagrams	Interactive Worksheets	Proof	Real-World Scenarios	Solvers	Worked Example				
MATHia Unit	MATHia Workspace	Overview	TEKS	Concept Builder	Mastery										

Topic 4: Proportional Relationships															
Introducing Proportions to Solve Percent Problems	Using Proportions to Solve Percent Problems	Students examine partial Worked Examples to solve for the part, percent, or whole in percent problems using equivalent fractions and proportions.	7.4D	✓											
	Solving Simple Percent Problems	Students practice problems in which they solve for the part, the percent, or whole in percent problems using proportions.	7.4D	✓											
Calculating Sales Tax and Discounts	Calculating Sales Tax or Discounts	Students solve personal finance problems involving either sales tax or discounts.	7.4D 7.13A 7.13F		✓										
	Solving Problems with Both Sales Tax and Discounts	Students solve personal finance problems involving both sales tax and discounts.	7.4D 7.13A 7.13F		✓										
	Analyzing Different Forms of Expressions	Students follow Worked Examples that show that expressions can be rewritten to describe sales tax and discount situations in many ways. Students rewrite expressions describing situations and interpret the rewritten expressions to highlight the different ways the expressions reveal different aspects of the situations.	7.4D 7.13A	✓											
Percent Increase and Percent Decrease	Calculating Percent Change and Final Amounts	Students determine the percent increase or decrease or the final amount in a percent change problem using equivalent ratios or means and extremes.	7.4D		✓										
	Using Percents and Percent Change	Students will use proportions to solve a variety of percent equations from given scenarios.	7.4D		✓										

5		Thinking Proportionally				Strategies										
						Animations	Classifications	Explore Tools	Graphing Tools	Interactive Diagrams	Interactive Worksheets	Proof	Real-World Scenarios	Solvers	Worked Example	
MATHia Unit	MATHia Workspace	Overview	TEKS	Concept Builder	Mastery											
Scale and Scale Drawings	Critical Attributes of Similar Figures	Students watch an animation which uses an eclipse as a context to explain similarity. Students learn that the corresponding angles of similar figures are congruent and the corresponding side lengths are proportional. They use these attributes--corresponding angles and proportional side lengths--to identify similar figures and to show that congruent figures are also similar.	7.5A	✓		•										
	Using Scale Drawings	Students are introduced to scale and similar figures. They analyze models to determine whether they are scaled drawings of larger objects. Students use proportions to determine lengths and areas of scaled figures.	7.5C	✓		•	•							•		•
	Calculating Measurements Using a Scale	Students use scale factors to determine unknown measures in real-life scenarios.	7.5C		✓									•		

Topic 5: Financial Literacy: Interest and Budgets																
Income Tax	Working Students and Taxes	Students analyze scenarios or images of paystubs to calculate gross and net pay, as well as tax rates and withholding amounts for various kinds of income taxes.	7.13A		✓											
	Calculating Federal Income Taxes	Students calculate the federal income tax owed given taxable income and a table of marginal tax rates.	7.13A		✓											
Simple and Compound Interest	Calculating Simple Interest	Students will use what they know about proportional reasoning and solving linear equations to compute the amount of interest earned on an investment as well as the final value of the account.	7.13E		✓											
	Calculating and Using Compound Interest	Students solve for an unknown quantity using a worksheet and the formula for compound interest. The unknown quantity can be the balance of an account after a given amount of time. More difficult problems will include calculating the principle given the future balance.	7.13E		✓											

6		Describing Variability of Quantities				Strategies											
						Animations	Classifications	Explore Tools	Graphing Tools	Interactive Diagrams	Interactive Worksheets	Proof	Real-World Scenarios	Solvers	Worked Example		
MATHia Unit	MATHia Workspace	Overview	TEKS	Concept Builder	Mastery												

Topic 1: The Statistical Process																	
Understanding the Statistical Process	Analyzing Distributions with Shape, Center, and Spread	Students watch an animation which describes what a statistical question is and how to analyze data sets according to their center, spread, and overall shape. Students learn about gaps, clusters, peaks, and skew and use these terms to analyze a data set.	6.12B	✓													
	Creating Dot Plots	Given a data set in context, students construct a dot plot. First, they select a title based on the description of the data. They identify the least and greatest data values, while the bounds on the number line are provided. Students then use a tool to plot each data value to create the dot plot.	6.12A		✓												
Analyzing Numerical Data Displays	Interpreting Dot Plots	Students interpret, create, and analyze dot plots as they learn about the features of the plot type. Students summarize and describe the displays according to shape and numerical summaries.	6.12B 6.12C 6.13A	✓													
	Introduction to Histograms	Students watch an animation as they learn how to create a histogram. They interpret the data displayed in a histogram, determining which values or characteristics can be read directly from the graph.	6.12B 6.13A	✓													
Using Histograms to Display Data	Creating Histograms	Given a data set in context, students construct a histogram. First, they select a title and label the axes based on the description of the data. Students then create a scale for the horizontal axis, while the scale for the vertical axis is provided. Next, they use a tool to graph each bin; as students select the data that belongs in each bin, the tool graphs each bin to the appropriate height based on the number of data values and the scale on the vertical axis. Data sets contain no more than 30 values, and histograms have a range of 4 to 6 bins. Data is limited to integer values.	6.12A		✓												

6		Describing Variability of Quantities				Strategies										
						Animations	Classifications	Explore Tools	Graphing Tools	Interactive Diagrams	Interactive Worksheets	Proof	Real-World Scenarios	Solvers	Worked Example	
MATHia Unit	MATHia Workspace	Overview	TEKS	Concept Builder	Mastery											
Using Histograms to Display Data (continued)	Exploring Histograms	Students use an Explore Tool to determine the effect of changing the bin size of a histogram. They summarize and describe the displays according to shape. Students answer questions about the data displayed in a given histogram.	6.12B 6.12C	✓				•						•		

Topic 2: Numerical Summaries of Data																
Analyzing Data Using Measures of Center	Calculating Mean, Median, Mode, and Range	Students calculate the mean, median, mode, and range from data sets.	6.12C		✓											
	Determining Measures of Center	Students use their understanding of mean, median, and mode to determine which was used as the measure of central tendency.	6.12C		✓											
	Measuring the Effects of Changing Data Sets	Students calculate mean and median, with and without an additional data value, and compare the original and adjusted measures.	6.12C		✓											
Displaying the Five-Number Summary	Introduction to Box Plots	Students are introduced to how the five-number summary of a data set is displayed in a box-and-whisker plot. They use the characteristics of a box plot to answer questions about a data set.	6.12A	✓										•		
	Creating Box Plots	Given a scenario and a corresponding data set, students determine the five-number summary. As they place their responses in a framework which visually supports the order of the values on a number line, a box plot is constructed for them using their responses. Students then select an appropriate title for their box plot. The data sets do not contain any outliers. Additionally, a tool is provided to help students determine the median, Q1, and Q3 in an efficient manner.	6.12A		✓									•		

6		Describing Variability of Quantities				Strategies									
						Animations	Classifications	Explore Tools	Graphing Tools	Interactive Diagrams	Interactive Worksheets	Proof	Real-World Scenarios	Solvers	Worked Example
MATHia Unit	MATHia Workspace	Overview	TEKS	Concept Builder	Mastery										
Displaying the Five-Number Summary (continued)	Exploring Box Plots	Students use an Explore Tool to change the values of data points within a set and explore how the changes affect the five-number summary. They interpret the shape and spread of different box-and-whisker plots. Students sort box-and-whisker plots by their shape.	6.12B 6.12C	✓			•	•					•		
	Interpreting Box Plots	Students analyze vertical and horizontal box-and-whisker plots to understand the relationship between the shape of the display and the spread of the data set.	6.12B 6.12C 6.13A		✓		•						•		