

1		The Real and Complex Number System				Strategies									
						Animations	Classifications	Explore Tools	Graphing Tools	Interactive Diagrams	Interactive Worksheets	Proof	Real-World Scenarios	Solvers	Worked Example
MATHia Unit	MATHia Workspace	Overview	CCSS	Concept Builder	Mastery										
Rational and Irrational Numbers	Introduction to Irrational Numbers	Students determine perfect squares and their square roots. They use rational approximations to determine decimal approximations of square roots of non-perfect squares. Students watch an animation about the real number system and classify real numbers as rational or irrational.	8.NS.1 8.NS.2 8.EE.2	✓		•					•				•
	Graphing Real Numbers on a Number Line	Students practice plotting various real numbers on a number line. Students approximate, if necessary, and plot decimals, percents, fractions, square roots, and pi.	8.NS.1 8.NS.2		✓							•			
	Ordering Rational and Irrational Numbers	Students use a number line tool to plot approximate values of real numbers and then compare and order the numbers.	8.NS.1 8.NS.2	✓								•			
Properties of Whole Number Exponents	Introduction to the Power Rules	Students analyze worked examples for the power rules, including the Product Rule, Quotient Rule, Power to a Power Rule, Zero Power, and Negative Exponent Rules. They then answer questions and derive a general formula for each rule. Finally, students practice applying the rules.	8.EE.1	✓											•
	Using the Product Rule and the Quotient Rule	Students will simplify mathematical expressions using the Product and Quotient Rules.	8.EE.1		✓										
	Using the Power to a Power Rule	Students will simplify mathematical expressions using the Power to a Power Rule.	8.EE.1		✓										
	Using the Product to a Power Rule and the Quotient to a Power Rule	Students will simplify mathematical expressions using the Product to a Power and the Quotient to a Power Rules.	8.EE.1		✓										
	Using Properties of Exponents with Whole Number Powers	Students will use a variety of strategies, including the Power to a Power Rule, the Product to a Power Rule, and the Quotient to a Power Rule to simplify mathematical expressions with exponents.	8.EE.1		✓										
	Rewriting Expressions with Negative and Zero Exponents	Students will simplify mathematical expressions involving negative exponents and exponents of 0.	8.EE.1		✓										

2		Operations & Algebraic Thinking				Strategies										
						Animations	Classifications	Explore Tools	Graphing Tools	Interactive Diagrams	Interactive Worksheets	Proof	Real-World Scenarios	Solvers	Worked Example	
MATHia Unit	MATHia Workspace	Overview	CCSS	Concept Builder	Mastery											
Solving Linear Equations	Exploring Two-Step Equations	Students use a balance tool to explore two-step equations. They use a general strategy to solve any two-step equation.	8.EE.7b	✓							•	•				
	Solving Multi-Step Equations	Students practice solving equations algebraically using a variety of strategies, including using a balance tool.	8.EE.7b	✓								•				
Linear Models	Graphing Given an Integer Slope and y-Intercept	Students will write the equations of lines given an integer slope and a y-intercept.	8.F.4		✓								•		•	
	Graphing Given a Decimal Slope and y-Intercept	Students will write the equations of lines given a decimal-value slope and a y-intercept.	8.F.4		✓								•		•	
Linear Equations with Variables on Both Sides	Solving with Integers (No Type In)	Students will solve equations with variables on both sides of the equals sign.	8.EE.C.7b		✓											
	Solving with Integers (Type In)	Students will solve equations with variables on both sides of the equals sign.	8.EE.C.7b		✓											
	Solving Equations with One Solution, Infinite, and No Solutions	Students follow worked examples as they learn to identify equations with one solution, no solutions, and infinite solutions. Students also check the solutions to equations.	8.EE.C.7a	✓												
Systems of Linear Equations	Introduction to Systems of Linear Equations	Students watch an animation introduces systems of linear equations and demonstrating that linear systems may have one solution, no solutions, or an infinite number of solutions. Students represent systems with one solution graphically and algebraically in order to understand that the solution to such a system is represented by a point of intersection of the graphs of the two linear equations. Students verify solutions to systems and interpret a system in context, making sense of the point of intersection as the break-even point in a cost-income situation.	8.EE.C.8a	✓		•							•			
	Modeling Linear Systems Involving Integers	Students will write multiple expressions with integer coefficients and use equations to solve systems and determine break-even points in the context of real-world problems.	8.EE.8 8.EE.C.8a 8.EE.C.8b 8.EE.C.8c		✓								•		•	

2		Operations & Algebraic Thinking				Strategies									
						Animations	Classifications	Explore Tools	Graphing Tools	Interactive Diagrams	Interactive Worksheets	Proof	Real-World Scenarios	Solvers	Worked Example
MATHia Unit	MATHia Workspace	Overview	CCSS	Concept Builder	Mastery										
Systems of Linear Equations (continued)	Modeling Linear Systems Involving Decimals	Students will write multiple expressions with decimal coefficients and use equations to solve systems and determine break-even points in the context of real-world problems.	8.EE.8 8.EE.C.8a 8.EE.C.8b 8.EE.C.8c		✓										
	Solving Linear Systems Using Substitution	Students will solve systems of equations with one solution using substitution in mathematical contexts	8.EE.C.8b		✓										

3		Geometry				Strategies											
						Animations	Classifications	Explore Tools	Graphing Tools	Interactive Diagrams	Interactive Worksheets	Proof	Real-World Scenarios	Solvers	Worked Example		
MATHia Unit	MATHia Workspace	Overview	CCSS	Concept Builder	Mastery												
The Pythagorean Theorem	Exploring the Pythagorean Theorem	Students explore a variety of right triangles and answer questions about proofs of the Pythagorean Theorem and its converse.	8.G.6	✓							•	•					
	Applying the Pythagorean Theorem	Students increase their familiarity with using the Pythagorean Theorem by analyzing worked examples.	8.G.7 8.EE.2	✓													
	Problem Solving Using the Pythagorean Theorem	Students solve for an unknown side length of a right triangle in real-world problems by using the Pythagorean Theorem.	8.G.7 8.EE.2	✓													
Transformations of Figures on the Coordinate Plane	Experimenting with Rigid Motions	Students use an interactive Explore Tool to perform translations, reflections, and rotations. Students also identify vertical and horizontal symmetry and describe sequences of rigid motions that map one figure onto a congruent figure. Students observe that, after rigid motions, parallel lines remain parallel and angle measures and line segments do not change their measure.	8.G.1 8.G.1a 8.G.1b 8.G.1c	✓								•					
	Translating Plane Figures	Students will select translations that match a pre-image to a target image figure, given a reference point.	8.G.2 8.G.3		✓									•			
	Reflecting Plane Figures	Students will select reflections over lines that match a pre-image to target image figure, given a reference point.	8.G.2 8.G.3		✓										•		
	Rotating Plane Figures	Students will select rotations that match a pre-image to a target image figure, given a reference point.	8.G.2 8.G.3		✓											•	
	Defining Similarity	Students watch an animation showing how similar figures can be created by drawing and measuring lines from a point of dilation. Students distinguish between enlargement and reduction dilations and use the corresponding side length ratios to determine the scale factors of dilations. Students learn that shapes created by dilations are similar figures, which have congruent corresponding angle measures and proportional corresponding side lengths.	8.G.4	✓		•											•

3		Geometry				Strategies										
						Animations	Classifications	Explore Tools	Graphing Tools	Interactive Diagrams	Interactive Worksheets	Proof	Real-World Scenarios	Solvers	Worked Example	
MATHia Unit	MATHia Workspace	Overview	CCSS	Concept Builder	Mastery											
<b>Transformations of Figures on the Coordinate Plane (continued)</b>	Dilating Plane Figures	Students will select dilations that match a pre-image to target image figures, given a reference point.	8.G.3 8.G.4		✓											
<b>Lines Cut by a Transversal</b>	Classifying Angles Formed by Transversals	Students follow worked examples and complete sorting activities as they learn to identify angles and angle pairs formed by lines cut by a transversal.	8.G.5	✓		•					•					
	Calculating Angle Measures Formed by Transversals	Calculate the measure of the sought angle by using angle relationships formed by two lines cut by a single transversal.	8.G.5		✓								•			

4		Statistics				Strategies										
						Animations	Classifications	Explore Tools	Graphing Tools	Interactive Diagrams	Interactive Worksheets	Proof	Real-World Scenarios	Solvers	Worked Example	
MATHia Unit	MATHia Workspace	Overview	CCSS	Concept Builder	Mastery											
Lines of Best Fit	Estimating Lines of Best Fit	Students describe the patterns of association in scatter plots and select the most appropriate line of best fit for a scatter plot. They use an interactive Explore Tool to plot, analyze, interpret, and reason with lines of best fit using real-world data.	8.SP.1 8.SP.2	✓							•	•				
	Using Lines of Best Fit	Students practice interpreting the meaning of lines of best fit and using the lines to make predictions.	8.SP.2 8.SP.3	✓												