

SCCCR	Description	Textbook Module	Textbook Topic	Textbook Lesson	MATHia Module	MATHia Unit	MATHia Workspace
AAPR.1	Add, subtract, and multiply polynomials and understand that polynomials are closed under these operations.	1: Extending Linear Relationships	2: Exploring and Analyzing Patterns	4: True to Form: Forms of a Quadratic Function	2: Analyzing Structure	1: Graphs of Polynomial Functions	2: Analyzing Polynomial Functions
		2: Analyzing Structure	1: Composing and Decomposing Figures and Functions	4: The Zero's the Hero	3: Developing Structural Similarities	1: Polynomial Operations	1: Adding Polynomials with Higher Orders 2: Adding and Subtracting Higher Order Functions 3: Multiplying Polynomials
		3: Developing Structural Similarities	1: Relating Factors and Zeros	2: Divide and Conquer: Polynomial Division 3: Closing Time			
AAPR.3	Graph polynomials identifying zeros when suitable factorizations are available and indicating end behavior. Write a polynomial function of least degree corresponding to a given graph.	2: Analyzing Structure	1: Composing and Decomposing Figures and Functions	1: Blame it on the Rain: Modeling with Functions			
			2: Characteristics of Polynomial Functions	3: Poly-Wog			
			2: Characteristics of Polynomial Functions	1: So Odd, I Can't Even			
			2: Characteristics of Polynomial Functions	4: Function Construction			
			1: Composing and Decomposing Figures and Functions	4: The Zero's the Hero	2: Analyzing Structure	2: Characteristics of Polynomial Functions	1: Identifying Zeros Of Polynomial Functions 3: Using Zeros to Sketch a Graph of a Polynomial
		3: Developing Structural Similarities	1: Relating Factors and Zeros	1: Satisfactory Factoring			
		4: Inverses of Functions	4: Applications of Growth Modeling	2: Paint By Numbers			

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ACE.1	Create and solve equations and inequalities in one variable that model real-world problems involving linear, quadratic, simple rational, and exponential relationships. Interpret the solutions and determine whether they are reasonable.	1: Exploring Relationships	2: Exploring and Analyzing Patterns	1: Patterns: They're Growing: Observing Patterns 2: The Cat's Out of the Bag: Generating Algebraic Expressions 3: Samesies: Comparing Multiple Representations of Functions 4: True to Form: Forms of Quadratic Functions	3: Developing Structural Similarities	2: Solving Polynomials	3: Solving Polynomial Inequalities
			3: Applications of Quadratics	1: Ahead of the Curve: Solving Quadratic Inequalities			
		3: Developing Structural Similarities	1: Relating Factors and Zeros	4: Unequal Equals: Solving Polynomial Inequalities	3: Developing Structural Similarities	5: Rational Models	2: Using Rational Models 3: Solving Work, Mixture and Distance Problems 4: Modeling and Solving with Rational Functions
			3: Rational Functions	5: Thunder. Thun- Thun-Thunder: Solving Problems with Rational Equations 6: 16 Tons and What Do You Get?: Solving Work, Mixture, Distance and Cost Problems			
ACE.2	Create equations in two or more variables to represent relationships between quantities. Graph the equations on coordinate axes using appropriate labels, units, and scales.	1: Exploring Relationships	2: Exploring and Analyzing Patterns	4: True to Form: Forms of a Quadratic Function			
			3: Applications of Quadratics	1: Ahead of the Curve: Solving Quadratic Inequalities 2: All Systems are Go!: Systems of Quadratic Equations			

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ACE.3	Use systems of equations and inequalities to represent constraints arising in real-world situations. Solve such systems using graphical and analytical methods, including linear programming. Interpret the solution within the context of the situation. (Limit to linear programming.)	1: Exploring Relationships	1: Applying Linear Expressions and Equations	2: Take it to the Max... or Min: Linear Programming			
			3: Applications of Quadratics	1: Ahead of the Curve: Solving Quadratic Inequalities 2: All Systems are Go! : Systems of Quadratic Equations			
		2: Analyzing Structure	2: Characteristics of Polynomial Functions	5: Level Up: Analyzing Polynomial Functions			
		3: Developing Structural Similarities	1: Relating Factors and Zeros	4: Unequal Equals: Solving Polynomial Inequalities			
			2: Polynomial Models	3: Modeling Gig: Modeling with Polynomial Data			
ACE.4	Solve literal equations and formulas for a specified variable including equations and formulas that arise in a variety of disciplines.	1: Exploring Relationships	1: Applying Linear Expressions and Equations	2: It's Literally About Literal Equations: Literal Equations			
		4: Inverses of Functions	1: Radical Functions	5: Into the Unknown			
AREI.2	Solve simple rational and radical equations in one variable and understand how extraneous solutions may arise.	3: Developing Structural Similarities	3: Rational Functions	5: Thunder. Thun- Thun- Thunder: Solving Problems with Rational Equations 6: 16 Tons and What Do You Get?: Solving Work, Mixture, Distance and Cost Problems	3: Developing Structural Similarities	3: Rational Functions	1: Modeling Ratios as Rational Functions
				4: Inverses of Functions		1: Radical Functions	5: Into the Unknown: Solving Radical Equations
AREI.4	Solve mathematical and real-world problems involving quadratic equations in one variable.	1: Extending Linear Relationships	2: Exploring and Analyzing Patterns	5: The Root of the Problem: Solving Quadratic Equations			
			3: Applications of Quadratics	1: Ahead of the Curve: Solving Quadratic Inequalities	(Algebra I) 1: Exploring Relationships	6: Solving Quadratic Equations	1: Solving Quadratic Equations by Factoring 2: Solving Quadratic Equations

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AREI.4.b	Solve quadratic equations by inspection, taking square roots, completing the square, the quadratic formula and factoring, as appropriate to the initial form of the equation. Recognize when the quadratic formula gives complex solutions and write them as $a + bi$ for real numbers a and b .	1: Exploring Relationships	2: Exploring and Analyzing Patterns	5: The Root of the Problem	1: Exploring Relationships	7: Forms of Quadratic Functions	2: Quadratic Modeling 3: Quadratic Equation Solving
			3: Applications of Quadratics	1: Ahead of the Curve: Solving Quadratic Inequalities			
AREI.7	Solve a simple system consisting of a linear equation and a quadratic equation in two variables algebraically and graphically. Understand that such systems may have zero, one, two, or infinitely many solutions.	1: Exploring Relationships	2: Exploring and Analyzing Patterns	5: The Root of the Problem: Solving Quadratic Equations			
			3: Applications of Quadratics	2: All Systems are Go!: Systems of Quadratic Equations			
AREI.11	Solve an equation of the form $f(x) = g(x)$ graphically by identifying the x -coordinate(s) of the point(s) of intersection of the graphs of $y = f(x)$ and $y = g(x)$.	1: Exploring Relationships	1: Applying Linear Expressions and Equations	2: Take it to the Max... or Min: Linear Programming			
			3: Applications of Quadratics	2: All Systems Go			
		2: Analyzing Structure	1: Composing and Decomposing Figures and Functions	1: Blame it on the Rain: Modeling with Functions			
			3: Characteristics of Polynomial Functions	5: Level Up: Analyzing Polynomial Functions			
		4: Inverses of Functions	2: Exponential and Logarithmic Functions	1: Half-Life			
			3: Exponential and Logarithmic Equations	2: Pert and Nert			
				3: More Than One Way to Crack an Egg			

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ASE.1	Interpret the meanings of coefficients, factors, terms, and expressions based on their real-world contexts. Interpret complicated expressions as being composed of simpler expressions.	1: Exploring Relationships	2: Exploring and Analyzing Patterns	1: Patterns: They're Growing: Observing Patterns 2: The Cat's Out of the Bag: Generating Algebraic Expressions 3: Samesies: Comparing Multiple Representations of Functions 4: True to Form: Forms of Quadratic Functions	1: Exploring Relationships	3: Searching For Patterns	1: Exploring and Analyzing Patterns 2: Comparing Familiar Function Representations
		2: Analyzing Structure	1: Composing and Decomposing Figures and Functions	1: Blame it on the Rain: Modeling with Functions			
		3: Developing Structural Similarities	1: Relating Factors and Zeros	2: Divide and Conquer: Polynomial Division	1: Exploring Relationships	5: Graphs of Functions	2: Transforming Functions
					1: Exploring Relationships	7: Forms of Quadratic Functions	1: Examining the Shape and Structure of Quadratic Functions
		4: Inverses of Functions	4: Applications of Growth Modeling	1: Series Are Sums: Geometric Series			
ASE.2	Analyze the structure of binomials, trinomials, and other polynomials in order to rewrite equivalent expressions.	1: Exploring Relationships	2: Exploring and Analyzing Patterns	4: True to Form			
		3: Developing Structural Similarities	1: Relating Factors and Zeros	1: Satisfactory Factoring 2: Divide and Conquer			
			3: Rational Functions	4: Must Be a Rational Explanation: Operations With Rational Expressions 5: Thunder. Thun- Thun- Thunder. : Solving Problems with Rational Equations			
ASE.3.b	Determine the maximum or minimum value of a quadratic function by completing the square.				(Algebra I) 5: Maximizing and Minimizing	5: Quadratic Expression Factoring	7: Completing the Square
						6: Forms of Quadratics	2: Converting Quadratics to General Form 3: Converting Quadratics to Factored Form 4: Converting Quadratics to Vertex Form

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ASE.3.c	Use the properties of exponents to transform expressions for exponential functions.	4: Inverses of Functions	2: Exponential and Logarithmic Functions	4: I Like to Move it: Transformations of Exponential and Logarithmic Functions			
FBF.1.a	Write a function that describes a relationship between two quantities. a. Write a function that models a relationship between two quantities using both explicit expressions and a recursive process and by combining standard forms using addition, subtraction, multiplication and division to build new functions.	1: Exploring Relationships	1: Applying Linear Expressions and Equations	2: Did you Mean: Recursion?			
			2: Exploring and Analyzing Patterns	2: The Cat's Out of the Bag: Generating Algebraic Expressions 4: True to Form			
		3: Developing Structural Similarities	2: Polynomial Models	3: Modeling Gig			
		4: Inverses of Functions	4: Applications of Growth Modeling	3: This Is the Title of This Lesson: Fractals			
FBF.1.b	Write a function that describes a relationship between two quantities. b. Combine functions using the operations addition, subtraction, multiplication, and division to build new functions that describe the relationship between two quantities in mathematical and real-world situations.	2: Analyzing Structure	1: Composing and Decomposing Figures and Functions	1: Blame It on the Rain			
			2: Characteristics of Polynomial Functions	4: Function Construction			
		3: Developing Structural Similarities	2: Polynomial Models	3: Modeling Gig: Modeling Polynomial Functions and Data	2: Analyzing Structure	1: Graphs of Polynomial Functions	2: Analyzing Polynomial Functions
		4: Inverses of Functions	4: Applications of Growth Modeling	3: This Is the Title of This Lesson			
FBF.2	Write arithmetic and geometric sequences both recursively and with an explicit formula, use them to model situations, and translate between the two forms.	4: Inverses of Functions	4: Applications of Growth Modeling	1: Series Are Sums: Geometric Series 3: This Is the Title of This Lesson: Fractals	(Algebra I) 1: Searching for Patterns	2: Sequences	2: Writing Recursive Formulas 3: Writing Explicit Formulas

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FBF.3	Describe the effect of the transformations $kf(x)$, $f(x) + k$, $f(x + k)$, and combinations of such transformations on the graph of $y = f(x)$ for any real number k . Find the value of k given the graphs and write the equation of a transformed parent function given its graph.	2: Analyzing Structure	1: Composing and Decomposing Figures and Functions	2: Folds, Turns, and Zeros: Transforming Function Shapes	1: Function Overview	2: Graphs of Functions	2: Transforming Functions
			2: Characteristics of Polynomial Functions	1: So Odd, I Can't Even: Power Functions 2: Math Class Needs a Makeover			
		3: Developing Structural Similarities	3: Rational Functions	2: Approaching Infinity: Transformations of Rational Functions	1: Exploring Relationships	7: Forms of Quadratic Functions	4: Quadratic Transformations
		4: Inverses of Functions	1: Radical Functions	3: Making Waves: Transformations of Radical Functions			
			2: Exponential and Logarithmic Functions	4: I Like to Move it: Transformations of Exponential and Logarithmic Functions			

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FIF.4	Interpret key features of a function that models the relationship between two quantities when given in graphical or tabular form. Sketch the graph of a function from a verbal description showing key features. Key features include intercepts; intervals where the function is increasing, decreasing, constant, positive, or negative; relative maximums and minimums; symmetries; end behavior and periodicity.	1: Exploring Relationships	2: Exploring and Analyzing Patterns	2: The Cat's Out of the Bag!	1: Exploring Relationships	5: Graphs of Functions	1: Identifying Key Characteristics of Graphs of Functions
				4: True to Form: Forms of a Quadratic Function			
		2: Analyzing Structure	1: Composing and Decomposing Figures and Functions	3: Planting Seeds: Exploring Cubic Functions	2: Analyzing Structure	1: Graphs of Polynomial Functions	3: Classifying Polynomial Functions 4: Identifying Key Characteristics of Graphs in Terms of Quantities
				2: Characteristics of Polynomial Functions			
		3: Developing Structural Similarities	2: Polynomial Models	3: Modeling Gig: Modeling with Polynomial Functions and Data	2: Characteristics of Polynomial Functions	1: Identifying Key Characteristics of Polynomial Functions	
		4: Inverses of Functions	1: Radical Functions	1: Strike That, Invert It: Inverses of Power Functions 2: Such a Rad Lesson: Radical Functions			
			2: Exponential and Logarithmic Functions	1: Half-Life: Comparing Linear and Exponential Functions 2: Pert and Nert: Properties of Exponential Graphs 3: Return of the Inverse: Logarithmic Functions			
			4: Applications of Growth Modeling	3: This Is the Title of This Lesson			

SCCCR	Description	Textbook Module	Textbook Topic	Textbook Lesson	MATHia Module	MATHia Unit	MATHia Workspace
FIF.5	Relate the domain and range of a function to its graph and, where applicable, to the quantitative relationship it describes.	2: Analyzing Structure	1: Composing and Decomposing Figures and Functions	3: Planting Seeds: Exploring Cubic Functions			
		3: Developing Structural Similarities	2: Polynomial Models	3: Modeling Gig: Modeling with Polynomial Functions and Data	2: Analyzing Structure	1: Graphs of Polynomial Functions	1: Modeling Polynomial Functions
			3: Rational Functions	5: Thunder. Thun- Thun- Thunder: Solving Problems with Rational Equations			
		4: Inverses of Functions	1: Radical Functions	2: Such a Rad Lesson: Radical Functions 3: Making Waves: Transformations of Radical Functions			
			2: Exponential and Logarithmic Functions	3: Return of the Inverse: Logarithmic Functions			
FIF.6	Given a function in graphical, symbolic, or tabular form, determine the average rate of change of the function over a specified interval. Interpret the meaning of the average rate of change in a given context	2: Analyzing Structure	2: Characteristics of Polynomial Functions	5: Level Up			

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FIF.7	Graph functions from their symbolic representations. Indicate key features including intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior and periodicity. Graph simple cases by hand and use technology for complicated cases.	1: Exploring Relationships	3: Applications of Quadratics	3: Model Behavior: Using Quadratic Functions to Model Data			
		2: Analyzing Structure	1: Composing and Decomposing Figures and Functions	2: Folds, Turns, and Zeros: Transforming Function Shapes 3: Planting the Seeds: Exploring Cubic Functions 4: The Zero's the Hero: Decomposing Cubic Functions	3: Developing Structural Similarities	3: Rational Functions	1: Introduction to Rational Functions
			2: Characteristics of Polynomial Functions	4: Function Construction: Building Cubic and Quartic Functions	4: Inverses of Functions	1: Inverses of Functions	1: Investigating Inverses of Functions 2: Graphing Square Root Functions
					4: Inverses of Functions	4: Exponential and Logarithmic Functions	1: Properties of Exponential Graphs 2: Introduction to Logarithmic Functions
FIF.8	Translate between different but equivalent forms of a function equation to reveal and explain different properties of the function.	1: Exploring Relationships	2: Exploring and Analyzing Patterns	1: Patterns: They're Growing: Observing Patterns 2: The Cat's Out of the Bag: Generating Algebraic Expressions 3: Samesies: Comparing Multiple Representations of Functions			
FIF.8.b	Interpret expressions for exponential functions by using the properties of exponents	4: Inverses Of Functions	2: Exponential and Logarithmic Functions	1: Half-Life: Comparing Linear and Exponential Functions			
FIF.9	Compare properties of two functions given in different representations such as algebraic, graphical, tabular, or verbal.	1: Exploring Relationships	2: Exploring and Analyzing Patterns	3: Samesies 4: True to Form: Forms of a Quadratic Function			
		2: Analyzing Structure	2: Characteristics of Polynomial Functions	6: To a Greater or Lesser Degree	3: Developing Structural Similarities	2: Solving Polynomial Functions	4: Comparing Polynomial Functions in Different Forms
		4: Inverses of Functions	1: Radical Functions	3: Making Waves: Transformations of Radical Functions			
			2: Exponential and Logarithmic Functions	2: Pert and Nert: Properties of Exponential Graphs			

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FLQE.1	Distinguish between situations that can be modeled with linear functions or exponential functions by recognizing situations in which one quantity changes at a constant rate per unit interval as opposed to those in which a quantity changes by a constant percent rate per unit interval.	4: Inverses of Functions	2: Exponential and Logarithmic Functions	1: Half-Life: Comparing Linear and Exponential Functions	(Algebra I) 3: Investigating Growth and Decay	3: Compare Linear and Exponential Models	2: Recognizing Growth and Decay
FLQE.1.b	Recognize situations in which a quantity grows or decays by a constant percent rate per unit interval relative to another.				(Algebra I) 3: Investigating Growth and Decay	3: Compare Linear and Exponential Models	2: Recognizing Growth and Decay
FLQE.2	Create symbolic representations of linear and exponential functions, including arithmetic and geometric sequences, given graphs, verbal descriptions, and tables.	4: Inverses of Functions	2: Exponential and Logarithmic Functions	1: Half-Life: Comparing Linear and Exponential Functions 2: Pert and Nert: Properties of Exponential Graphs			
			3: Exponential and Logarithmic Equations	5: What's the Use?			
FLQE.5	Interpret the parameters in a linear or exponential function in terms of the context.	4: Inverses of Functions	2: Exponential and Logarithmic Functions	1: Half-Life: Comparing Linear and Exponential Functions 2: Pert and Nert: Properties of Exponential Graphs			
NCNS.1	Know there is a complex number i such that $i^2 = -1$, and every complex number has the form $a + bi$ with a and b real.	1: Exploring Relationships	2: Exploring and Analyzing Patterns	6: i Want to Believe: Imaginary and Complex Numbers	1: Exploring Relationships	8: Operations with Complex Numbers	1: Introduction to Complex Numbers 2: Simplifying Radicals with Negative Radicands 3: Simplifying Powers of i
NCNS.7	Solve quadratic equations in one variable that have complex solutions.	1: Exploring Relationships	2: Exploring and Analyzing Patterns	6: i Want to Believe: Imaginary and Complex Numbers	1: Exploring Relationships	8: Operations with Complex Numbers	6: Solving Quadratic Equations with Complex Roots