K-12 Mathematics, Evidence That Benchmarks Are Not Taught in Isolation Correlation		
Algebra 1, Amplify Desmos Math Florida, Algebra 1		
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 5, Lesson 3: Return of the Globs - In this lesson, students make connections between different representations of exponential growth and decay for bacteria in a petri dish.	MA.912.NSO.1.1 Extend previous understanding of the Laws of Exponents to include rational exponents. Apply the Laws of Exponents to evaluate numerical expressions and generate equivalent numerical expressions involving rational exponents.	MA.912.NSO.1.2, MA.912.AR.1.1, MA.912.AR.5.3, MA.912.AR.5.4
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 5, Lesson 4: Carlos and Corals - In this lesson, students evaluate exponential functions with positive, negative, and zero inputs through the lens of marine biology.	MA.912.NSO.1.1 Extend previous understanding of the Laws of Exponents to include rational exponents. Apply the Laws of Exponents to evaluate numerical expressions and generate equivalent numerical expressions involving rational exponents.	MA.912.NSO.1.2, MA.912.AR.1.1, MA.912.AR.5.3, MA.912.AR.5.4, MA.912.AR.5.6, MA.912.F.1.2
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 5, Lesson 5: Differences and Factors - In this lesson, students generalize how linear and exponential functions change over equal intervals with function tables.	MA.912.NSO.1.1 Extend previous understanding of the Laws of Exponents to include rational exponents. Apply the Laws of Exponents to evaluate numerical expressions and generate equivalent numerical expressions involving rational exponents.	MA.912.NSO.1.2, MA.912.AR.1.1, MA.912.AR.5.3, MA.912.AR.5.4, MA.912.F.1.2, MA.912.F.1.8
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 5, Lesson 6: Growing Mold - In this lesson, students explore how to model situations that change by a percent increase with exponential functions by growing mold.	MA.912.NSO.1.1 Extend previous understanding of the Laws of Exponents to include rational exponents. Apply the Laws of Exponents to evaluate numerical expressions and generate equivalent numerical expressions involving rational exponents.	MA.912.AR.1.1, MA.912.AR.5.4

Lesson	Benchmark of Focus	Connecting Benchmark(s)
Unit 5, Lesson 7: At a Loss - In this lesson, students explore representations of exponential decay functions through the value of phones over time.	MA.912.NSO.1.1 Extend previous understanding of the Laws of Exponents to include rational exponents. Apply the Laws of Exponents to evaluate numerical expressions and generate equivalent numerical expressions involving rational exponents.	MA.912.AR.1.1, MA.912.AR.5.4, MA.912.AR.5.6
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 5, Lesson 8: Thinking Rationally - In this lesson, students write equivalent expressions using radicals and rational exponents as the explore and analyze visuals of student work examples.	MA.912.NSO.1.1 Extend previous understanding of the Laws of Exponents to include rational exponents. Apply the Laws of Exponents to evaluate numerical expressions and generate equivalent numerical expressions involving rational exponents.	MA.912.NSO.1.4
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 5, Lesson 9: Writing Radicals - In this lesson, students explore rational exponents with numerators other than 1 by analyzing visuals of student work examples.	MA.912.NSO.1.1 Extend previous understanding of the Laws of Exponents to include rational exponents. Apply the Laws of Exponents to evaluate numerical expressions and generate equivalent numerical expressions involving rational exponents.	MA.912.NSO.1.4
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 5, Lesson 10: Rule the Roots - In this lesson, students perform multiplication and division with radicals as they analyze visuals of student work and explain their mathematical thinking.	MA.912.NSO.1.1 Extend previous understanding of the Laws of Exponents to include rational exponents. Apply the Laws of Exponents to evaluate numerical expressions and generate equivalent numerical expressions involving rational exponents.	MA.912.NSO.1.2, MA.912.NSO.1.4
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 5, Lesson 11: Tame the Terms - In this lesson, students analyze visual of students work of addition and subtraction with radicals by discussing notices and wonders.	MA.912.NSO.1.1 Extend previous understanding of the Laws of Exponents to include rational exponents. Apply the Laws of Exponents to evaluate numerical expressions and generate equivalent numerical expressions involving rational exponents.	MA.912.NSO.1.2, MA.912.NSO.1.4
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 5, Lesson 13: Payday Loan - In this lesson, students analyze exponential functions that represent different compound interest scenarios through payday loans and credit card offers.	MA.912.NSO.1.1 Extend previous understanding of the Laws of Exponents to include rational exponents. Apply the Laws of Exponents to evaluate numerical expressions and generate equivalent numerical expressions involving rational exponents.	MA.912.NSO.1.2, MA.912.FL.3.2, MA.912.FL.3.4

Lesson	Benchmark of Focus	Connecting Benchmark(s)
Unit 5, Lesson 14: Credit Card Compounding - In this lesson, students explore how credit card debt and its compounding interest demonstrates exponential growth and how it can significantly impact personal finances.	MA.912.NSO.1.1 Extend previous understanding of the Laws of Exponents to include rational exponents. Apply the Laws of Exponents to evaluate numerical expressions and generate equivalent numerical expressions involving rational exponents.	MA.912.NSO.1.2, MA.912.FL.3.2, MA.912.FL.3.4
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 7, Lesson 1: Sums and Differences - In this lesson, students relate their understanding of graphs of systems of equations to combining algebraic expressions. They compare and contrast different strategies for adding and subtracting algebraic expressions.	MA.912.NSO.1.1 Extend previous understanding of the Laws of Exponents to include rational exponents. Apply the Laws of Exponents to evaluate numerical expressions and generate equivalent numerical expressions involving rational exponents.	MA.912.AR.1.3
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 7, Lesson 2: Two-Factor Multiplication - In this lesson, using the area model, students extend their understanding of multiplying algebraic expressions to convert quadratic expressions from factored form to standard form.	MA.912.NSO.1.1 Extend previous understanding of the Laws of Exponents to include rational exponents. Apply the Laws of Exponents to evaluate numerical expressions and generate equivalent numerical expressions involving rational exponents.	MA.912.NSO.1.2, MA.912.AR.1.3

Lesson	Benchmark of Focus	Connecting Benchmark(s)
Unit 7, Lesson 3: Standard Feature - In this lesson, students explore different strategies to rewrite the factored form of quadratic expressions in standard form. In a matching activity, they identify different forms of the same quadratic expression (factored, standard, binomial squared).	MA.912.NSO.1.1 Extend previous understanding of the Laws of Exponents to include rational exponents. Apply the Laws of Exponents to evaluate numerical expressions and generate equivalent numerical expressions involving rational exponents.	MA.912.NSO.1.2, MA.912.AR.1.3
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 7, Lesson 4: X-Factor - In this lesson, students express quadratic expressions in different forms (area model diagram, standard form, factored form) in a puzzle activity. They extend their understanding of finding factors of linear expressions using an area model/diagram to factor quadratic expressions.	MA.912.NSO.1.1 Extend previous understanding of the Laws of Exponents to include rational exponents. Apply the Laws of Exponents to evaluate numerical expressions and generate equivalent numerical expressions involving rational exponents.	MA.912.NSO.1.2, MA.912.AR.1.7
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 7, Lesson 5: Form Up - In this lesson, students continue to build their understanding of factoring quadratic expressions to factor special quadratic expressions, including difference of squares.	MA.912.NSO.1.1 Extend previous understanding of the Laws of Exponents to include rational exponents. Apply the Laws of Exponents to evaluate numerical expressions and generate equivalent numerical expressions involving rational exponents.	MA.912.NSO.1.2, MA.912.AR.1.4, MA.912.AR.1.7
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 7, Lesson 6: Divide and Conquer - In this lesson, in a partner activity, students explore examples and non-examples of polynomials to derive a definition. They extend their understanding of the laws of exponents when dividing polynomials by monomials.	MA.912.NSO.1.1 Extend previous understanding of the Laws of Exponents to include rational exponents. Apply the Laws of Exponents to evaluate numerical expressions and generate equivalent numerical expressions involving rational exponents.	MA.912.NSO.1.2, MA.912.AR.1.4

Lesson	Benchmark of Focus	Connecting Benchmark(s)
Unit 7, Lesson 7: Consider the Factors - In this lesson, students extend their understanding of factoring quadratic expressions to factoring polynomial expressions. They explore patterns when factoring special-case polynomials, such as difference of squares, perfect square trinomials, and four-term polynomials, and discuss their findings.	MA.912.NSO.1.1 Extend previous understanding of the Laws of Exponents to include rational exponents. Apply the Laws of Exponents to evaluate numerical expressions and generate equivalent numerical expressions involving rational exponents.	MA.912.NSO.1.2, MA.912.AR.1.4, MA.912.AR.1.7
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 7, Lesson 8: Shooting Stars - In this lesson, students extend their understanding of the relationship between the factored form of a quadratic function and the intercepts (or zeros) of a parabola as they explore equivalent forms of a factored quadratic function with an a-term greater than 1.	MA.912.NSO.1.1 Extend previous understanding of the Laws of Exponents to include rational exponents. Apply the Laws of Exponents to evaluate numerical expressions and generate equivalent numerical expressions involving rational exponents.	MA.912.NSO.1.2, MA.912.AR.1.7, MA.912.AR.3.6
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 7, Lesson 9: Make it Zero - In this lesson, students relate the factored form of a quadratic expression to solving a quadratic equation using the zero-product property. They critique the thinking of how a quadratic equation is solved and explain their reasoning.	MA.912.NSO.1.1 Extend previous understanding of the Laws of Exponents to include rational exponents. Apply the Laws of Exponents to evaluate numerical expressions and generate equivalent numerical expressions involving rational exponents.	MA.912.NSO.1.2, MA.912.AR.1.2, MA.912.AR.1.7, MA.912.AR.3.1, MA.912.AR.3.6
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 5, Lesson 3: Return of the Globs - In this lesson, students make connections between different representations of exponential growth and decay for bacteria in a petri dish.	MA.912.NSO.1.2 Generate equivalent algebraic expressions using the properties of exponents.	MA.912.NSO.1.1, MA.912.AR.1.1, MA.912.AR.5.3, MA.912.AR.5.4

Lesson	Benchmark of Focus	Connecting Benchmark(s)
Unit 5, Lesson 4: Carlos and Corals - In this lesson, students evaluate exponential functions with positive, negative, and zero inputs through the lens of marine biology.	MA.912.NSO.1.2 Generate equivalent algebraic expressions using the properties of exponents.	MA.912.NSO.1.1, MA.912.AR.1.1, MA.912.AR.5.3, MA.912.AR.5.4, MA.912.AR.5.6, MA.912.F.1.2
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 5, Lesson 5: Differences and Factors - In this lesson, students generalize how linear and exponential functions change over equal intervals with function tables.	MA.912.NSO.1.2 Generate equivalent algebraic expressions using the properties of exponents.	MA.912.NSO.1.1, MA.912.AR.1.1, MA.912.AR.5.3, MA.912.AR.5.4, MA.912.F.1.2, MA.912.F.1.8
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 5, Lesson 10: Rule the Roots - In this lesson, students perform multiplication and division with radicals as they analyze visuals of student work and explain their mathematical thinking.	MA.912.NSO.1.2 Generate equivalent algebraic expressions using the properties of exponents.	MA.912.NSO.1.1, MA.912.NSO.1.4
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 5, Lesson 11: Tame the Terms - In this lesson, students analyze visual of students work of addition and subtraction with radicals by discussing notices and wonders.	MA.912.NSO.1.2 Generate equivalent algebraic expressions using the properties of exponents.	MA.912.NSO.1.1, MA.912.NSO.1.4
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 5, Lesson 13: Payday Loan - In this lesson, students analyze exponential functions that represent different compound interest scenarios through payday loans and credit card offers.	MA.912.NSO.1.2 Generate equivalent algebraic expressions using the properties of exponents.	MA.912.NSO.1.1, MA.912.FL.3.2, MA.912.FL.3.4

Lesson	Benchmark of Focus	Connecting Benchmark(s)
Unit 5, Lesson 14: Credit Card Compounding - In this lesson, students explore how credit card debt and its compounding interest demonstrates exponential growth and how it can significantly impact personal finances.	MA.912.NSO.1.2 Generate equivalent algebraic expressions using the properties of exponents.	MA.912.NSO.1.1, MA.912.FL.3.2, MA.912.FL.3.4
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 7, Lesson 2: Two-Factor Multiplication - In this lesson, using the area model, students extend their understanding of multiplying algebraic expressions to convert quadratic expressions from factored form to standard form.	MA.912.NSO.1.2 Generate equivalent algebraic expressions using the properties of exponents.	MA.912.NSO.1.1, MA.912.AR.1.3
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 7, Lesson 3: Standard Feature - In this lesson, students explore different strategies to rewrite the factored form of quadratic expressions in standard form. In a matching activity, they identify different forms of the same quadratic expression (factored, standard, binomial squared).	MA.912.NSO.1.2 Generate equivalent algebraic expressions using the properties of exponents.	MA.912.NSO.1.1, MA.912.AR.1.3
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 7, Lesson 4: X-Factor - In this lesson, students express quadratic expressions in different forms (area model diagram, standard form, factored form) in a puzzle activity. They extend their understanding of finding factors of linear expressions using an area model/diagram to factor quadratic expressions.	MA.912.NSO.1.2 Generate equivalent algebraic expressions using the properties of exponents.	MA.912.NSO.1.1, MA.912.AR.1.7

Lesson	Benchmark of Focus	Connecting Benchmark(s)
Unit 7, Lesson 5: Form Up - In this lesson, students continue to build their understanding of factoring quadratic expressions to factor special quadratic expressions, including difference of squares.	MA.912.NSO.1.2 Generate equivalent algebraic expressions using the properties of exponents.	MA.912.NSO.1.1, MA.912.AR.1.4, MA.912.AR.1.7
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 7, Lesson 6: Divide and Conquer - In this lesson, in a partner activity, students explore examples and non-examples of polynomials to derive a definition. They extend their understanding of the laws of exponents when dividing polynomials by monomials.	MA.912.NSO.1.2 Generate equivalent algebraic expressions using the properties of exponents.	MA.912.NSO.1.1, MA.912.AR.1.4
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 7, Lesson 7: Consider the Factors - In this lesson, students extend their understanding of factoring quadratic expressions to factoring polynomial expressions. They explore patterns when factoring special-case polynomials, such as difference of squares, perfect square trinomials, and four-term polynomials, and discuss their findings.	MA.912.NSO.1.2 Generate equivalent algebraic expressions using the properties of exponents.	MA.912.NSO.1.1, MA.912.AR.1.4, MA.912.AR.1.7
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 7, Lesson 8: Shooting Stars - In this lesson, students extend their understanding of the relationship between the factored form of a quadratic function and the intercepts (or zeros) of a parabola as they explore equivalent forms of a factored quadratic function with an a-term greater than 1.	MA.912.NSO.1.2 Generate equivalent algebraic expressions using the properties of exponents.	MA.912.NSO.1.1, MA.912.AR.1.7, MA.912.AR.3.6

Lesson	Benchmark of Focus	Connecting Benchmark(s)
Unit 7, Lesson 9: Make it Zero - In this lesson, students relate the factored form of a quadratic expression to solving a quadratic equation using the zero-product property. They critique the thinking of how a quadratic equation is solved and explain their reasoning.	MA.912.NSO.1.2 Generate equivalent algebraic expressions using the properties of exponents.	MA.912.NSO.1.1, MA.912.AR.1.2, MA.912.AR.1.7, MA.912.AR.3.1, MA.912.AR.3.6
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 5, Lesson 8: Thinking Rationally - In this lesson, students write equivalent expressions using radicals and rational exponents as the explore and analyze visuals of student work examples.	MA.912.NSO.1.4 Apply previous understanding of operations with rational numbers to add, subtract, multiply and divide numerical radicals.	MA.912.NSO.1.1
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 5, Lesson 9: Writing Radicals - In this lesson, students explore rational exponents with numerators other than 1 by analyzing visuals of student work examples.	MA.912.NSO.1.4 Apply previous understanding of operations with rational numbers to add, subtract, multiply and divide numerical radicals.	MA.912.NSO.1.1
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 5, Lesson 10: Rule the Roots - In this lesson, students perform multiplication and division with radicals as they analyze visuals of student work and explain their mathematical thinking.	MA.912.NSO.1.4 Apply previous understanding of operations with rational numbers to add, subtract, multiply and divide numerical radicals.	MA.912.NSO.1.1, MA.912.NSO.1.2
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 5, Lesson 11: Tame the Terms - In this lesson, students analyze visual of students work of addition and subtraction with radicals by discussing notices and wonders.	MA.912.NSO.1.4 Apply previous understanding of operations with rational numbers to add, subtract, multiply and divide numerical radicals.	MA.912.NSO.1.1, MA.912.NSO.1.2

Lesson	Benchmark of Focus	Connecting Benchmark(s)
Unit 7, Lesson 12: Couldn't Square Less - In this lesson, students continue to build their understanding of how to solve quadratic equations by taking the square root of each side of the equation. In a partner activity, they solve equivalent forms of a quadratic equation and share their thinking with each other.	MA.912.NSO.1.4 Apply previous understanding of operations with rational numbers to add, subtract, multiply and divide numerical radicals.	MA.912.AR.1.2, MA.912.AR.1.7, MA.912.AR.3.1
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 7, Lesson 14: Square Tactic - In this lesson, students apply their understanding of perfect trinomial squares to solve quadratic equations by completing the square. They compare, contrast, and discuss two different strategies for solving a quadratic equation. They explore how the method of completing the square to solve quadratic equations was shared in an ancient text.	MA.912.NSO.1.4 Apply previous understanding of operations with rational numbers to add, subtract, multiply and divide numerical radicals.	MA.912.AR.1.2, MA.912.AR.1.7, MA.912.AR.3.1
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 7, Lesson 16: Formula Foundations - In this lesson, students apply their understanding of completing the square to derive the quadratic formula through a series of guided activities. They build an understanding and appreciation for formulas as a tool for efficient problem solving.	MA.912.NSO.1.4 Apply previous understanding of operations with rational numbers to add, subtract, multiply and divide numerical radicals.	MA.912.AR.1.2, MA.912.AR.3.1

Lesson	Benchmark of Focus	Connecting Benchmark(s)
Unit 7, Lesson 17: Formula Fluency - In this lesson, students build their fluency with the quadratic formula by solving problems given various equations, including error analysis and predicting error spots in using the formula accurately.	MA.912.NSO.1.4 Apply previous understanding of operations with rational numbers to add, subtract, multiply and divide numerical radicals.	MA.912.AR.3.1
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 7, Lesson 18: Stomp Rockets in Space - In this lesson, students continue to build their fluency with solving quadratic equations using the quadratic formula and make sense of the solutions within each problem context.	MA.912.NSO.1.4 Apply previous understanding of operations with rational numbers to add, subtract, multiply and divide numerical radicals.	MA.912.AR.3.1, MA.912.AR.3.8
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 5, Lesson 1: Growing Globs - In this lesson, students identify and compare two different patterns of growth using a visual representation of a linear function and exponential function.	MA.912.AR.1.1 Identify and interpret parts of an equation or expression that represent a quantity in terms of a mathematical or real-world context, including viewing one or more of its parts as a single entity.	MA.912.F.1.6, MA.912.F.1.8
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 5, Lesson 2: Going Viral - In this lesson, students explore connections between graphs and equations on the number of likes on a meme for every hour after it goes viral.	MA.912.AR.1.1 Identify and interpret parts of an equation or expression that represent a quantity in terms of a mathematical or real-world context, including viewing one or more of its parts as a single entity.	MA.912.AR.5.4, MA.912.F.1.6, MA.912.F.1.8
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 5, Lesson 3: Return of the Globs - In this lesson, students make connections between different representations of exponential growth and decay for bacteria in a petri dish.	MA.912.AR.1.1 Identify and interpret parts of an equation or expression that represent a quantity in terms of a mathematical or real-world context, including viewing one or more of its parts as a single entity.	MA.912.NSO.1.1, MA.912.NSO.1.2, MA.912.AR.5.3, MA.912.AR.5.4

Lesson	Benchmark of Focus	Connecting Benchmark(s)
Unit 5, Lesson 4: Carlos and Corals - In this lesson, students evaluate exponential functions with positive, negative, and zero inputs through the lens of marine biology.	MA.912.AR.1.1 Identify and interpret parts of an equation or expression that represent a quantity in terms of a mathematical or real-world context, including viewing one or more of its parts as a single entity.	MA.912.NSO.1.1, MA.912.NSO.1.2, MA.912.AR.5.3, MA.912.AR.5.4, MA.912.AR.5.6, MA.912.F.1.2
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 5, Lesson 5: Differences and Factors - In this lesson, students generalize how linear and exponential functions change over equal intervals with function tables.	MA.912.AR.1.1 Identify and interpret parts of an equation or expression that represent a quantity in terms of a mathematical or real-world context, including viewing one or more of its parts as a single entity.	MA.912.NSO.1.1, MA.912.NSO.1.2, MA.912.AR.5.3, MA.912.AR.5.4, MA.912.F.1.2, MA.912.F.1.8
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 5, Lesson 6: Growing Mold - In this lesson, students explore how to model situations that change by a percent increase with exponential functions by growing mold.	MA.912.AR.1.1 Identify and interpret parts of an equation or expression that represent a quantity in terms of a mathematical or real-world context, including viewing one or more of its parts as a single entity.	MA.912.NSO.1.1, MA.912.AR.5.4
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 5, Lesson 7: At a Loss - In this lesson, students explore representations of exponential decay functions through the value of phones over time.	MA.912.AR.1.1 Identify and interpret parts of an equation or expression that represent a quantity in terms of a mathematical or real-world context, including viewing one or more of its parts as a single entity.	MA.912.NSO.1.1, MA.912.AR.5.4, MA.912.AR.5.6
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 1, Lesson 4: Subway Seats - In this lesson, students write equivalent forms of two-variable linear equations to redesign subway cars to accommodate more people.	MA.912.AR.1.2 Rearrange equations or formulas to isolate a quantity of interest.	MA.912.AR.2.2, MA.912.AR.2.5, MA.912.AR.2.6

Lesson	Benchmark of Focus	Connecting Benchmark(s)
Unit 1, Lesson 5: Various Variables - In this lesson, students write equivalent forms of two-variable linear equations to determine different seating arrangements at a party.	MA.912.AR.1.2 Rearrange equations or formulas to isolate a quantity of interest.	MA.912.AR.2.2, MA.912.AR.2.5, MA.912.AR.2.6
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 1, Lesson 6: Shelley the Snail - In this lesson, students use linear relationships to determine the number of blocks needed to close a gap between a starting point and a destination, as well as the number of school supplies that can be purchased with a set amount of money.	MA.912.AR.1.2 Rearrange equations or formulas to isolate a quantity of interest.	MA.912.AR.2.2, MA.912.AR.2.4, MA.912.AR.2.5, MA.912.AR.2.6
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 1, Lesson 7: Five Representations - In this lesson, students use linear relationships to determine combinations of items that can be purchased for a certain price.	MA.912.AR.1.2 Rearrange equations or formulas to isolate a quantity of interest.	MA.912.AR.2.2, MA.912.AR.2.4, MA.912.AR.2.5, MA.912.AR.2.6
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 1, Lesson 9: House Design - In this lesson, students use equations in a real-world context as they examine different views of a house and evaluate the costs to hire a contractor.	MA.912.AR.1.2 Rearrange equations or formulas to isolate a quantity of interest.	MA.912.AR.2.2, MA.912.AR.2.3, MA.912.AR.2.4, MA.912.AR.2.5
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 7, Lesson 9: Make it Zero - In this lesson, students relate the factored form of a quadratic expression to solving a quadratic equation using the zero-product property. They critique the thinking of how a quadratic equation is solved and explain their reasoning.	MA.912.AR.1.2 Rearrange equations or formulas to isolate a quantity of interest.	MA.912.NSO.1.1, MA.912.NSO.1.2, MA.912.AR.1.7, MA.912.AR.3.1, MA.912.AR.3.6

Lesson	Benchmark of Focus	Connecting Benchmark(s)
Unit 7, Lesson 12: Couldn't Square Less - In this lesson, students continue to build their understanding of how to solve quadratic equations by taking the square root of each side of the equation. In a partner activity, they solve equivalent forms of a quadratic equation and share their thinking with each other.	MA.912.AR.1.2 Rearrange equations or formulas to isolate a quantity of interest.	MA.912.NSO.1.4, MA.912.AR.1.7, MA.912.AR.3.1
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 7, Lesson 14: Square Tactic - In this lesson, students apply their understanding of perfect trinomial squares to solve quadratic equations by completing the square. They compare, contrast, and discuss two different strategies for solving a quadratic equation. They explore how the method of completing the square to solve quadratic equations was shared in an ancient text.	MA.912.AR.1.2 Rearrange equations or formulas to isolate a quantity of interest.	MA.912.NSO.1.4, MA.912.AR.1.7, MA.912.AR.3.1
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 7, Lesson 16: Formula Foundations - In this lesson, students apply their understanding of completing the square to derive the quadratic formula through a series of guided activities. They build an understanding and appreciation for formulas as a tool for efficient problem solving.	MA.912.AR.1.2 Rearrange equations or formulas to isolate a quantity of interest.	MA.912.NSO.1.4, MA.912.AR.3.1
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 7, Lesson 13: Square Dance - In this lesson, students identify patterns and use tiles to create perfect square trinomials.	MA.912.AR.1.2 Rearrange equations or formulas to isolate a quantity of interest.	MA.912.AR.1.3, MA.912.AR.1.7, MA.912.AR.3.1

Lesson	Benchmark of Focus	Connecting Benchmark(s)
Unit 7, Lesson 15: Back and Forth - In this lesson, students relate the process of completing the square to the vertex form of a quadratic function. They analyze and discuss the thinking of others to make sense of a strategy for rewriting the standard form of a quadratic function in vertex form.	MA.912.AR.1.2 Rearrange equations or formulas to isolate a quantity of interest.	MA.912.AR.1.3, MA.912.AR.1.7, MA.912.AR.3.1, MA.912.AR.3.6
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 7, Lesson 1: Sums and Differences - In this lesson, students relate their understanding of graphs of systems of equations to combining algebraic expressions. They compare and contrast different strategies for adding and subtracting algebraic expressions.	MA.912.AR.1.3 Add, subtract and multiply polynomial expressions with rational number coefficients.	MA.912.NSO.1.1
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 7, Lesson 2: Two-Factor Multiplication - In this lesson, using the area model, students extend their understanding of multiplying algebraic expressions to convert quadratic expressions from factored form to standard form.	MA.912.AR.1.3 Add, subtract and multiply polynomial expressions with rational number coefficients.	MA.912.NSO.1.1, MA.912.NSO.1.2
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 7, Lesson 3: Standard Feature - In this lesson, students explore different strategies to rewrite the factored form of quadratic expressions in standard form. In a matching activity, they identify different forms of the same quadratic expression (factored, standard, binomial squared).	MA.912.AR.1.3 Add, subtract and multiply polynomial expressions with rational number coefficients.	MA.912.NSO.1.1, MA.912.NSO.1.2

Lesson	Benchmark of Focus	Connecting Benchmark(s)
Unit 7, Lesson 13: Square Dance - In this lesson, students identify patterns and use tiles to create perfect square trinomials.	MA.912.AR.1.3 Add, subtract and multiply polynomial expressions with rational number coefficients.	MA.912.AR.1.2, MA.912.AR.1.7, MA.912.AR.3.1
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 7, Lesson 15: Back and Forth - In this lesson, students relate the process of completing the square to the vertex form of a quadratic function. They analyze and discuss the thinking of others to make sense of a strategy for rewriting the standard form of a quadratic function in vertex form.	MA.912.AR.1.3 Add, subtract and multiply polynomial expressions with rational number coefficients.	MA.912.AR.1.2, MA.912.AR.1.7, MA.912.AR.3.1, MA.912.AR.3.6
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 7, Lesson 5: Form Up - In this lesson, students continue to build their understanding of factoring quadratic expressions to factor special quadratic expressions, including difference of squares.	MA.912.AR.1.4 Divide a polynomial expression by a monomial expression with rational number coefficients.	MA.912.NSO.1.1, MA.912.NSO.1.2, MA.912.AR.1.7
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 7, Lesson 6: Divide and Conquer - In this lesson, in a partner activity, students explore examples and non-examples of polynomials to derive a definition. They extend their understanding of the laws of exponents when dividing polynomials by monomials.	MA.912.AR.1.4 Divide a polynomial expression by a monomial expression with rational number coefficients.	MA.912.NSO.1.1, MA.912.NSO.1.2

Lesson	Benchmark of Focus	Connecting Benchmark(s)
Unit 7, Lesson 7: Consider the Factors - In this lesson, students extend their understanding of factoring quadratic expressions to factoring polynomial expressions. They explore patterns when factoring special-case polynomials, such as difference of squares, perfect square trinomials, and four-term polynomials, and discuss their findings.	MA.912.AR.1.4 Divide a polynomial expression by a monomial expression with rational number coefficients.	MA.912.NSO.1.1, MA.912.NSO.1.2,MA.912.AR.1.7
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 7, Lesson 4: X-Factor - In this lesson, students express quadratic expressions in different forms (area model diagram, standard form, factored form) in a puzzle activity. They extend their understanding of finding factors of linear expressions using an area model/diagram to factor quadratic expressions.	MA.912.AR.1.7 Rewrite a polynomial expression as a product of polynomials over the real number system.	MA.912.NSO.1.1, MA.912.NSO.1.2
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 7, Lesson 5: Form Up - In this lesson, students continue to build their understanding of factoring quadratic expressions to factor special quadratic expressions, including difference of squares.	MA.912.AR.1.7 Rewrite a polynomial expression as a product of polynomials over the real number system.	MA.912.NSO.1.1, MA.912.NSO.1.2, MA.912.AR.1.4

Lesson	Benchmark of Focus	Connecting Benchmark(s)
Unit 7, Lesson 7: Consider the Factors - In this lesson, students extend their understanding of factoring quadratic expressions to factoring polynomial expressions. They explore patterns when factoring special-case polynomials, such as difference of squares, perfect square trinomials, and four-term polynomials, and discuss their findings.	MA.912.AR.1.7 Rewrite a polynomial expression as a product of polynomials over the real number system.	MA.912.NSO.1.1, MA.912.NSO.1.2,MA.912.AR.1.4
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 7, Lesson 8: Shooting Stars - In this lesson, students extend their understanding of the relationship between the factored form of a quadratic function and the intercepts (or zeros) of a parabola as they explore equivalent forms of a factored quadratic function with an a-term greater than 1.	MA.912.AR.1.7 Rewrite a polynomial expression as a product of polynomials over the real number system.	MA.912.NSO.1.1, MA.912.NSO.1.2, MA.912.AR.3.6
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 7, Lesson 9: Make it Zero - In this lesson, students relate the factored form of a quadratic expression to solving a quadratic equation using the zero-product property. They critique the thinking of how a quadratic equation is solved and explain their reasoning.	MA.912.AR.1.7 Rewrite a polynomial expression as a product of polynomials over the real number system.	MA.912.NSO.1.1, MA.912.NSO.1.2, MA.912.AR.1.2, MA.912.AR.3.1, MA.912.AR.3.6

Lesson	Benchmark of Focus	Connecting Benchmark(s)
Unit 7, Lesson 12: Couldn't Square Less - In this lesson, students continue to build their understanding of how to solve quadratic equations by taking the square root of each side of the equation. In a partner activity, they solve equivalent forms of a quadratic equation and share their thinking with each other.	MA.912.AR.1.7 Rewrite a polynomial expression as a product of polynomials over the real number system.	MA.912.NSO.1.4, MA.912.AR.1.2, MA.912.AR.3.1
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 7, Lesson 14: Square Tactic - In this lesson, students apply their understanding of perfect trinomial squares to solve quadratic equations by completing the square. They compare, contrast, and discuss two different strategies for solving a quadratic equation. They explore how the method of completing the square to solve quadratic equations was shared in an ancient text.	MA.912.AR.1.7 Rewrite a polynomial expression as a product of polynomials over the real number system.	MA.912.NSO.1.4, MA.912.AR.1.2, MA.912.AR.3.1
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 7, Lesson 13: Square Dance - In this lesson, students identify patterns and use tiles to create perfect square trinomials.	MA.912.AR.1.7 Rewrite a polynomial expression as a product of polynomials over the real number system.	MA.912.AR.1.2, MA.912.AR.1.3, MA.912.AR.3.1
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 7, Lesson 15: Back and Forth - In this lesson, students relate the process of completing the square to the vertex form of a quadratic function. They analyze and discuss the thinking of others to make sense of a strategy for rewriting the standard form of a quadratic function in vertex form.	MA.912.AR.1.7 Rewrite a polynomial expression as a product of polynomials over the real number system.	MA.912.AR.1.2, MA.912.AR.1.3, MA.912.AR.3.1, MA.912.AR.3.6

Lesson	Benchmark of Focus	Connecting Benchmark(s)
Unit 1, Lesson 3: Same Position - In this lesson, students solve linear equations to determine when vehicles will meet on the same road.	MA.912.AR.2.1 Given a real-world context, write and solve one-variable multi-step linear equations.	MA.8.AR.2.1
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 1, Lesson 4: Subway Seats - In this lesson, students write equivalent forms of two-variable linear equations to redesign subway cars to accommodate more people.	MA.912.AR.2.2 Write a linear two-variable equation to represent relationships between quantities from a graph, a written description or a table of values within a mathematical or real-world context.	MA.912.AR.1.2, MA.912.AR.2.5, MA.912.AR.2.6
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 1, Lesson 5: Various Variables - In this lesson, students write equivalent forms of two-variable linear equations to determine different seating arrangements at a party.	MA.912.AR.2.2 Write a linear two-variable equation to represent relationships between quantities from a graph, a written description or a table of values within a mathematical or real-world context.	MA.912.AR.1.2, MA.912.AR.2.5, MA.912.AR.2.6
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 1, Lesson 6: Shelley the Snail - In this lesson, students use linear relationships to determine the number of blocks needed to close a gap between a starting point and a destination, as well as the number of school supplies that can be purchased with a set amount of money.	MA.912.AR.2.2 Write a linear two-variable equation to represent relationships between quantities from a graph, a written description or a table of values within a mathematical or real-world context.	MA.912.AR.1.2, MA.912.AR.2.4, MA.912.AR.2.5, MA.912.AR.2.6
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 1, Lesson 7: Five Representations - In this lesson, students use linear relationships to determine combinations of items that can be purchased for a certain price.	MA.912.AR.2.2 Write a linear two-variable equation to represent relationships between quantities from a graph, a written description or a table of values within a mathematical or real-world context.	MA.912.AR.1.2, MA.912.AR.2.4, MA.912.AR.2.5, MA.912.AR.2.6

Lesson	Benchmark of Focus	Connecting Benchmark(s)
Unit 1, Lesson 9: House Design - In this lesson, students use equations in a real-world context as they examine different views of a house and evaluate the costs to hire a contractor.	MA.912.AR.2.2 Write a linear two-variable equation to represent relationships between quantities from a graph, a written description or a table of values within a mathematical or real-world context.	MA.912.AR.1.2, MA.912.AR.2.3, MA.912.AR.2.4, MA.912.AR.2.5
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 3, Lesson 4: Toy Factory - In this lesson, students use linear functions to determine the price of a pizza as a function of the number of toppings ordered and other real world contexts.	MA.912.AR.2.2 Write a linear two-variable equation to represent relationships between quantities from a graph, a written description or a table of values within a mathematical or real-world context.	MA.912.F.1.2
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 1, Lesson 9: House Design - In this lesson, students use equations in a real-world context as they examine different views of a house and evaluate the costs to hire a contractor.	MA.912.AR.2.3 Write a linear two-variable equation for a line that is parallel or perpendicular to a given line and goes through a given point.	MA.912.AR.1.2, MA.912.AR.2.2, MA.912.AR.2.4, MA.912.AR.2.5
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 1, Lesson 6: Shelley the Snail - In this lesson, students use linear relationships to determine the number of blocks needed to close a gap between a starting point and a destination, as well as the number of school supplies that can be purchased with a set amount of money.	MA.912.AR.2.4 Given a table, equation or written description of a linear function, graph that function, and determine and interpret its key features.	MA.912.AR.1.2, MA.912.AR.2.2, MA.912.AR.2.5, MA.912.AR.2.6
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 1, Lesson 7: Five Representations - In this lesson, students use linear relationships to determine combinations of items that can be purchased for a certain price.	MA.912.AR.2.4 Given a table, equation or written description of a linear function, graph that function, and determine and interpret its key features.	MA.912.AR.1.2, MA.912.AR.2.2, MA.912.AR.2.3, MA.912.AR.2.5, MA.912.AR.2.6

Lesson	Benchmark of Focus	Connecting Benchmark(s)
Unit 1, Lesson 9: House Design - In this lesson, students use equations in a real-world context as they examine different views of a house and evaluate the costs to hire a contractor.	MA.912.AR.2.4 Given a table, equation or written description of a linear function, graph that function, and determine and interpret its key features.	MA.912.AR.1.2, MA.912.AR.2.2, MA.912.AR.2.3, MA.912.AR.2.5
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 1, Lesson 4: Subway Seats - In this lesson, students write equivalent forms of two-variable linear equations to redesign subway cars to accommodate more people.	MA.912.AR.2.5 Solve and graph mathematical and real-world problems that are modeled with linear functions. Interpret key features and determine constraints in terms of the context.	MA.912.AR.1.2, MA.912.AR.2.2, MA.912.AR.2.6
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 1, Lesson 5: Various Variables - In this lesson, students write equivalent forms of two-variable linear equations to determine different seating arrangements at a party.	MA.912.AR.2.5 Solve and graph mathematical and real-world problems that are modeled with linear functions. Interpret key features and determine constraints in terms of the context.	MA.912.AR.1.2, MA.912.AR.2.2, MA.912.AR.2.6
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 1, Lesson 6: Shelley the Snail - In this lesson, students use linear relationships to determine the number of blocks needed to close a gap between a starting point and a destination, as well as the number of school supplies that can be purchased with a set amount of money.	MA.912.AR.2.5 Solve and graph mathematical and real-world problems that are modeled with linear functions. Interpret key features and determine constraints in terms of the context.	MA.912.AR.1.2, MA.912.AR.2.2, MA.912.AR.2.4, MA.912.AR.2.6
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 1, Lesson 7: Five Representations - In this lesson, students use linear relationships to determine combinations of items that can be purchased for a certain price.	MA.912.AR.2.5 Solve and graph mathematical and real-world problems that are modeled with linear functions. Interpret key features and determine constraints in terms of the context.	MA.912.AR.1.2, MA.912.AR.2.2, MA.912.AR.2.4, MA.912.AR.2.6

Lesson	Benchmark of Focus	Connecting Benchmark(s)
Unit 1, Lesson 9: House Design - In this lesson, students use equations in a real-world context as they examine different views of a house and evaluate the costs to hire a contractor.	MA.912.AR.2.5 Solve and graph mathematical and real-world problems that are modeled with linear functions. Interpret key features and determine constraints in terms of the context.	MA.912.AR.1.2, MA.912.AR.2.2, MA.912.AR.2.3, MA.912.AR.2.4
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 1, Lesson 4: Subway Seats - In this lesson, students write equivalent forms of two-variable linear equations to redesign subway cars to accommodate more people.	MA.912.AR.2.6 Given a mathematical or real-world context, write and solve one-variable linear inequalities, including compound inequalities. Represent solutions algebraically or graphically.	MA.912.AR.1.2, MA.912.AR.2.2, MA.912.AR.2.5
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 1, Lesson 5: Various Variables - In this lesson, students write equivalent forms of two-variable linear equations to determine different seating arrangements at a party.	MA.912.AR.2.6 Given a mathematical or real-world context, write and solve one-variable linear inequalities, including compound inequalities. Represent solutions algebraically or graphically.	MA.912.AR.1.2, MA.912.AR.2.2, MA.912.AR.2.5
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 1, Lesson 6: Shelley the Snail - In this lesson, students use linear relationships to determine the number of blocks needed to close a gap between a starting point and a destination, as well as the number of school supplies that can be purchased with a set amount of money.	MA.912.AR.2.6 Given a mathematical or real-world context, write and solve one-variable linear inequalities, including compound inequalities. Represent solutions algebraically or graphically.	MA.912.AR.1.2, MA.912.AR.2.2, MA.912.AR.2.4, MA.912.AR.2.5
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 1, Lesson 7: Five Representations - In this lesson, students use linear relationships to determine combinations of items that can be purchased for a certain price.	MA.912.AR.2.6 Given a mathematical or real-world context, write and solve one-variable linear inequalities, including compound inequalities. Represent solutions algebraically or graphically.	MA.912.AR.1.2, MA.912.AR.2.2, MA.912.AR.2.4, MA.912.AR.2.5

Lesson	Benchmark of Focus	Connecting Benchmark(s)
Unit 1, Lesson 11: Graphing Inequalities - In this lesson, students connect various representations to describe an inequality using symbols and graphs.	MA.912.AR.2.6 Given a mathematical or real-world context, write and solve one-variable linear inequalities, including compound inequalities. Represent solutions algebraically or graphically.	MA.912.AR.2.8
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 1, Lesson 18: Concert Planning - In this lesson, students apply the solution set of two-variable linear inequalities to solve problems involving the planning for a concert within financial constraints.	MA.912.AR.2.7 Write two-variable linear inequalities to represent relationships between quantities from a graph or a written description within a mathematical or realworld context.	MA.912.AR.2.8
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 1, Lesson 11: Graphing Inequalities - In this lesson, students connect various representations to describe an inequality using symbols and graphs.	MA.912.AR.2.8 Given a mathematical or real-world context, graph the solution set to a two-variable linear inequality.	MA.912.AR.2.6
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 1, Lesson 18: Concert Planning - In this lesson, students apply the solution set of two-variable linear inequalities to solve problems involving the planning for a concert within financial constraints.	MA.912.AR.2.8 Given a mathematical or real-world context, graph the solution set to a two-variable linear inequality.	MA.912.AR.2.7
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 7, Lesson 9: Make it Zero - In this lesson, students relate the factored form of a quadratic expression to solving a quadratic equation using the zero-product property. They critique the thinking of how a quadratic equation is solved and explain their reasoning.	MA.912.AR.3.1 Given a mathematical or real-world context, write and solve one-variable quadratic equations over the real number system.	MA.912.NSO.1.1, MA.912.NSO.1.2, MA.912.AR.1.2, MA.912.AR.1.7, MA.912.AR.3.6

Lesson	Benchmark of Focus	Connecting Benchmark(s)
Unit 7, Lesson 11: Graph to Solve - In this lesson, in an exploration activity, students relate the x-intercepts of the graph of a quadratic function to the solutions of a quadratic equation. They compare, contrast, and discuss different strategies for solving a quadratic equation using graphs.	MA.912.AR.3.1 Given a mathematical or real-world context, write and solve one-variable quadratic equations over the real number system.	MA.912.AR.3.6
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 7, Lesson 12: Couldn't Square Less - In this lesson, students continue to build their understanding of how to solve quadratic equations by taking the square root of each side of the equation. In a partner activity, they solve equivalent forms of a quadratic equation and share their thinking with each other.	MA.912.AR.3.1 Given a mathematical or real-world context, write and solve one-variable quadratic equations over the real number system.	MA.912.NSO.1.4, MA.912.AR.1.2, MA.912.AR.1.7
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 7, Lesson 14: Square Tactic - In this lesson, students apply their understanding of perfect trinomial squares to solve quadratic equations by completing the square. They compare, contrast, and discuss two different strategies for solving a quadratic equation. They explore how the method of completing the square to solve quadratic equations was shared in an ancient text.	MA.912.AR.3.1 Given a mathematical or real-world context, write and solve one-variable quadratic equations over the real number system.	MA.912.NSO.1.4, MA.912.AR.1.2, MA.912.AR.1.7
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 7, Lesson 16: Formula Foundations - In this lesson, students apply their understanding of completing the square to derive the quadratic formula through a series of guided activities. They build an understanding and appreciation for formulas as a tool for efficient problem solving.	MA.912.AR.3.1 Given a mathematical or real-world context, write and solve one-variable quadratic equations over the real number system.	MA.912.NSO.1.4, MA.912.AR.1.2

Lesson	Benchmark of Focus	Connecting Benchmark(s)
Unit 7, Lesson 17: Formula Fluency - In this lesson, students build their fluency with the quadratic formula by solving problems given various equations, including error analysis and predicting error spots in using the formula accurately.	MA.912.AR.3.1 Given a mathematical or real-world context, write and solve one-variable quadratic equations over the real number system.	MA.912.NSO.1.4
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 7, Lesson 18: Stomp Rockets in Space - In this lesson, students continue to build their fluency with solving quadratic equations using the quadratic formula and make sense of the solutions within each problem context.	MA.912.AR.3.1 Given a mathematical or real-world context, write and solve one-variable quadratic equations over the real number system.	MA.912.NSO.1.4, MA.912.AR.3.8
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 7, Lesson 13: Square Dance - In this lesson, students identify patterns and use tiles to create perfect square trinomials.	MA.912.AR.3.1 Given a mathematical or real-world context, write and solve one-variable quadratic equations over the real number system.	MA.912.AR.1.2, MA.912.AR.1.3, MA.912.AR.1.7

Lesson	Benchmark of Focus	Connecting Benchmark(s)
Unit 7, Lesson 15: Back and Forth - In this lesson, students relate the process of completing the square to the vertex form of a quadratic function. They analyze and discuss the thinking of others to make sense of a strategy for rewriting the standard form of a quadratic function in vertex form.	MA.912.AR.3.1 Given a mathematical or real-world context, write and solve one-variable quadratic equations over the real number system.	MA.912.AR.1.2, MA.912.AR.1.3, MA.912.AR.1.7, MA.912.AR.3.6
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 6, Lesson 11: Break Through: Parabolas - In this lesson, within the context of a video game scenario, students write quadratic equations in factored form to "break the targets" at the intercepts of a parabola.	MA.912.AR.3.4 Write a quadratic function to represent the relationship between two quantities from a graph, a written description or a table of values within a mathematical or real-world context.	MA.912.AR.3.5, MA.912.AR.3.6, MA.912.AR.3.7, MA.912.F.2.1
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 6, Lesson 13: Vertex Form - In this lesson, students relate the vertex form of a quadratic equation to transformations of the graph of quadratic function. They critique the thinking of another student when writing the equation of a parabola with a given vertex and explain their reasoning.	MA.912.AR.3.4 Write a quadratic function to represent the relationship between two quantities from a graph, a written description or a table of values within a mathematical or real-world context.	MA.912.AR.3.6, MA.912.AR.3.7, MA.912.F.2.1
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 6, Lesson 14: Stretch it Out - In this lesson, students transform quadratic functions using vertical stretches. They relate the leading coefficient of a quadratic function to the behavior of its graph in a matching activity and explain their reasoning.	MA.912.AR.3.4 Write a quadratic function to represent the relationship between two quantities from a graph, a written description or a table of values within a mathematical or real-world context.	MA.912.AR.3.7, MA.912.F.2.1

Lesson	Benchmark of Focus	Connecting Benchmark(s)
Unit 6, Lesson 11: Break Through: Parabolas - In this lesson, within the context of a video game scenario, students write quadratic equations in factored form to "break the targets" at the intercepts of a parabola.	MA.912.AR.3.5 Given the x-intercepts and another point on the graph of a quadratic function, write the equation for the function.	MA.912.AR.3.4, MA.912.AR.3.6, MA.912.AR.3.7, MA.912.F.2.1
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 6, Lesson 10: Interesting Intercepts - In this lesson, students relate the intercepts of the graph of a quadratic function to a specific form of its equation (factored or standard).	MA.912.AR.3.6 Given an expression or equation representing a quadratic function, determine the vertex and zeros and interpret them in terms of a real-world context.	MA.912.AR.3.7, MA.912.F.1.2
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 6, Lesson 11: Break Through: Parabolas - In this lesson, within the context of a video game scenario, students write quadratic equations in factored form to "break the targets" at the intercepts of a parabola.	MA.912.AR.3.6 Given an expression or equation representing a quadratic function, determine the vertex and zeros and interpret them in terms of a real-world context.	MA.912.AR.3.4, MA.912.AR.3.5, MA.912.AR.3.7, MA.912.F.2.1
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 6, Lesson 13: Vertex Form - In this lesson, students relate the vertex form of a quadratic equation to transformations of the graph of quadratic function. They critique the thinking of another student when writing the equation of a parabola with a given vertex and explain their reasoning.	MA.912.AR.3.6 Given an expression or equation representing a quadratic function, determine the vertex and zeros and interpret them in terms of a real-world context.	MA.912.AR.3.4, MA.912.AR.3.7, MA.912.F.2.1

Lesson	Benchmark of Focus	Connecting Benchmark(s)
Unit 6, Lesson 12: Sneaker Drop - In this lesson, within the context of designing and selling a new style of sneaker, students apply their understanding of quadratic equations to compare different companies' revenue models.	MA.912.AR.3.6 Given an expression or equation representing a quadratic function, determine the vertex and zeros and interpret them in terms of a real-world context.	MA.912.AR.3.7, MA.912.AR.3.8, MA.912.F.1.2
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 7, Lesson 8: Shooting Stars - In this lesson, students extend their understanding of the relationship between the factored form of a quadratic function and the intercepts (or zeros) of a parabola as they explore equivalent forms of a factored quadratic function with an a-term greater than 1.	MA.912.AR.3.6 Given an expression or equation representing a quadratic function, determine the vertex and zeros and interpret them in terms of a real-world context.	MA.912.NSO.1.1, MA.912.NSO.1.2, MA.912.AR.1.7
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 7, Lesson 9: Make it Zero - In this lesson, students relate the factored form of a quadratic expression to solving a quadratic equation using the zero-product property. They critique the thinking of how a quadratic equation is solved and explain their reasoning.	MA.912.AR.3.6 Given an expression or equation representing a quadratic function, determine the vertex and zeros and interpret them in terms of a real-world context.	MA.912.NSO.1.1, MA.912.NSO.1.2, MA.912.AR.1.2, MA.912.AR.1.7, MA.912.AR.3.1
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 7, Lesson 11: Graph to Solve - In this lesson, in an exploration activity, students relate the x-intercepts of the graph of a quadratic function to the solutions of a quadratic equation. They compare, contrast, and discuss different strategies for solving a quadratic equation using graphs.	MA.912.AR.3.6 Given an expression or equation representing a quadratic function, determine the vertex and zeros and interpret them in terms of a real-world context.	MA.912.AR.3.1

Lesson	Benchmark of Focus	Connecting Benchmark(s)
Unit 7, Lesson 15: Back and Forth - In this lesson, students relate the process of completing the square to the vertex form of a quadratic function. They analyze and discuss the thinking of others to make sense of a strategy for rewriting the standard form of a quadratic function in vertex form.	MA.912.AR.3.6 Given an expression or equation representing a quadratic function, determine the vertex and zeros and interpret them in terms of a real-world context.	MA.912.AR.1.2, MA.912.AR.1.3, MA.912.AR.1.7, MA.912.AR.3.1
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 6, Lesson 4: On the Fence - In this lesson, within the context of building fences, students explore the symmetry found in quadratic relationships.	MA.912.AR.3.7 Given a table, equation or written description of a quadratic function, graph that function, and determine and interpret its key features.	MA.912.F.1.1, MA.912.F.1.8
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 6, Lesson 5: Stomp Rockets - In this lesson, students use tables and graphs to make predictions about quadratic relationships in the context of launching stomp rockets.	MA.912.AR.3.7 Given a table, equation or written description of a quadratic function, graph that function, and determine and interpret its key features.	MA.912.AR.3.8
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 6, Lesson 7: Robot Launch - In this lesson, students identify features of quadratic functions in multiple representations (tables, graphs, equations) and determine their meaning in the context of different robots launching a ball.	MA.912.AR.3.7 Given a table, equation or written description of a quadratic function, graph that function, and determine and interpret its key features.	MA.912.F.1.2
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 6, Lesson 8: What's My Graph? - In this lesson, students collaborate to explore strategies for graphing quadratic functions by hand using a table of values.	MA.912.AR.3.7 Given a table, equation or written description of a quadratic function, graph that function, and determine and interpret its key features.	MA.912.F.1.2

Lesson	Benchmark of Focus	Connecting Benchmark(s)
Unit 6, Lesson 9: Two for One - In this lesson, in a partner sorting activity, students explore different representations of quadratic functions (equations, tables, and graphs) and discuss the connections between them.	MA.912.AR.3.7 Given a table, equation or written description of a quadratic function, graph that function, and determine and interpret its key features.	MA.912.F.1.2
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 6, Lesson 10: Interesting Intercepts - In this lesson, students relate the intercepts of the graph of a quadratic function to a specific form of its equation (factored or standard).	MA.912.AR.3.7 Given a table, equation or written description of a quadratic function, graph that function, and determine and interpret its key features.	MA.912.AR.3.6, MA.912.F.1.2
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 6, Lesson 11: Break Through: Parabolas - In this lesson, within the context of a video game scenario, students write quadratic equations in factored form to "break the targets" at the intercepts of a parabola.	MA.912.AR.3.7 Given a table, equation or written description of a quadratic function, graph that function, and determine and interpret its key features.	MA.912.AR.3.4, MA.912.AR.3.5, MA.912.AR.3.6, MA.912.F.2.1
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 6, Lesson 13: Vertex Form - In this lesson, students relate the vertex form of a quadratic equation to transformations of the graph of quadratic function. They critique the thinking of another student when writing the equation of a parabola with a given vertex and explain their reasoning.	MA.912.AR.3.7 Given a table, equation or written description of a quadratic function, graph that function, and determine and interpret its key features.	MA.912.AR.3.4, MA.912.AR.3.6, MA.912.F.2.1

Lesson	Benchmark of Focus	Connecting Benchmark(s)
Unit 6, Lesson 14: Stretch it Out - In this lesson, students transform quadratic functions using vertical stretches. They relate the leading coefficient of a quadratic function to the behavior of its graph in a matching activity and explain their reasoning.	MA.912.AR.3.7 Given a table, equation or written description of a quadratic function, graph that function, and determine and interpret its key features.	MA.912.AR.3.4, MA.912.F.2.1
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 6, Lesson 12: Sneaker Drop - In this lesson, within the context of designing and selling a new style of sneaker, students apply their understanding of quadratic equations to compare different companies' revenue models.	MA.912.AR.3.7 Given a table, equation or written description of a quadratic function, graph that function, and determine and interpret its key features.	MA.912.AR.3.6, MA.912.AR.3.8, MA.912.F.1.2
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 6, Lesson 5: Stomp Rockets - In this lesson, students use tables and graphs to make predictions about quadratic relationships in the context of launching stomp rockets.	MA.912.AR.3.8 Solve and graph mathematical and real-world problems that are modeled with quadratic functions. Interpret key features and determine constraints in terms of the context.	MA.912.AR.3.7
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 6, Lesson 12: Sneaker Drop - In this lesson, within the context of designing and selling a new style of sneaker, students apply their understanding of quadratic equations to compare different companies' revenue models.	MA.912.AR.3.8 Solve and graph mathematical and real-world problems that are modeled with quadratic functions. Interpret key features and determine constraints in terms of the context.	MA.912.AR.3.6, MA.912.AR.3.7, MA.912.F.1.2

Lesson	Benchmark of Focus	Connecting Benchmark(s)
Unit 6, Lesson 15: Predicting Sales - In this lesson, within the context of selling a new cell phone model, students use linear, quadratic, and exponential functions to model real world data and make predictions of future sales.	MA.912.AR.3.8 Solve and graph mathematical and real-world problems that are modeled with quadratic functions. Interpret key features and determine constraints in terms of the context.	MA.912.F.1.2, MA.912.F.1.8
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 7, Lesson 18: Stomp Rockets in Space - In this lesson, students continue to build their fluency with solving quadratic equations using the quadratic formula and make sense of the solutions within each problem context.	MA.912.AR.3.8 Solve and graph mathematical and real-world problems that are modeled with quadratic functions. Interpret key features and determine constraints in terms of the context.	MA.912.NSO.1.4, MA.912.AR.3.1
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 5, Lesson 3: Return of the Globs - In this lesson, students make connections between different representations of exponential growth and decay for bacteria in a petri dish.	MA.912.AR.5.3 Given a mathematical or real-world context, classify an exponential function as representing growth or decay.	MA.912.NSO.1.1, MA.912.NSO.1.2, MA.912.AR.1.1, MA.912.AR.5.4
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 5, Lesson 4: Carlos and Corals - In this lesson, students evaluate exponential functions with positive, negative, and zero inputs through the lens of marine biology.	MA.912.AR.5.3 Given a mathematical or real-world context, classify an exponential function as representing growth or decay.	MA.912.NSO.1.1, MA.912.NSO.1.2, MA.912.AR.1.1, MA.912.AR.5.4, MA.912.AR.5.6, MA.912.F.1.2
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 5, Lesson 5: Differences and Factors - In this lesson, students generalize how linear and exponential functions change over equal intervals with function tables.	MA.912.AR.5.3 Given a mathematical or real-world context, classify an exponential function as representing growth or decay.	MA.912.NSO.1.1, MA.912.NSO.1.2, MA.912.AR.1.1, MA.912.AR.5.4, MA.912.F.1.2, MA.912.F.1.8

Lesson	Benchmark of Focus	Connecting Benchmark(s)
Unit 5, Lesson 2: Going Viral - In this lesson, students explore connections between graphs and equations on the number of likes on a meme for every hour after it goes viral.	MA.912.AR.5.4 Write an exponential function to represent a relationship between two quantities from a graph, a written description or a table of values within a mathematical or real-world context.	MA.912.AR.1.1, MA.912.F.1.6, MA.912.F.1.8
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 5, Lesson 3: Return of the Globs - In this lesson, students make connections between different representations of exponential growth and decay for bacteria in a petri dish.	MA.912.AR.5.4 Write an exponential function to represent a relationship between two quantities from a graph, a written description or a table of values within a mathematical or real-world context.	MA.912.NSO.1.1, MA.912.NSO.1.2, MA.912.AR.1.1, MA.912.AR.5.3
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 5, Lesson 4: Carlos and Corals - In this lesson, students evaluate exponential functions with positive, negative, and zero inputs through the lens of marine biology.	MA.912.AR.5.4 Write an exponential function to represent a relationship between two quantities from a graph, a written description or a table of values within a mathematical or real-world context.	MA.912.NSO.1.1, MA.912.NSO.1.2, MA.912.AR.1.1, MA.912.AR.5.3, MA.912.AR.5.6, MA.912.F.1.2
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 5, Lesson 5: Differences and Factors - In this lesson, students generalize how linear and exponential functions change over equal intervals with function tables.	MA.912.AR.5.4 Write an exponential function to represent a relationship between two quantities from a graph, a written description or a table of values within a mathematical or real-world context.	MA.912.NSO.1.1, MA.912.NSO.1.2, MA.912.AR.1.1, MA.912.AR.5.3, MA.912.F.1.2, MA.912.F.1.8
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 5, Lesson 6: Growing Mold - In this lesson, students explore how to model situations that change by a percent increase with exponential functions by growing mold.	MA.912.AR.5.4 Write an exponential function to represent a relationship between two quantities from a graph, a written description or a table of values within a mathematical or real-world context.	MA.912.NSO.1.1, MA.912.AR.1.1

Lesson	Benchmark of Focus	Connecting Benchmark(s)
Unit 5, Lesson 7: At a Loss - In this lesson, students explore representations of exponential decay functions through the value of phones over time.	MA.912.AR.5.4 Write an exponential function to represent a relationship between two quantities from a graph, a written description or a table of values within a mathematical or real-world context.	MA.912.NSO.1.1, MA.912.AR.1.1, MA.912.AR.5.6
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 5, Lesson 4: Carlos and Corals - In this lesson, students evaluate exponential functions with positive, negative, and zero inputs through the lens of marine biology.	MA.912.AR.5.6 Given a table, equation or written description of an exponential function, that function and determine its key features.	MA.912.NSO.1.1, MA.912.NSO.1.2, MA.912.AR.1.1, MA.912.AR.5.3, MA.912.AR.5.4, MA.912.F.1.2
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 5, Lesson 7: At a Loss - In this lesson, students explore representations of exponential decay functions through the value of phones over time.	MA.912.AR.5.6 Given a table, equation or written description of an exponential function, that function and determine its key features.	MA.912.NSO.1.1, MA.912.AR.1.1, MA.912.AR.5.4
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 4, Lesson 5: City Development - In this lesson, students solve systems of equations using multiple methods and interpreting the solution in context of building apartments on unused plots of land.	MA.912.AR.9.1 Given a mathematical or real-world context, write and solve a system of two-variable linear equations algebraically or graphically.	MA.912.AR.9.6
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 4, Lesson 6: Bus Systems - In this lesson, students model real world situations using systems of equations to decide how many seats and handholds will be on new buses for Metropolis Transit Association.	MA.912.AR.9.1 Given a mathematical or real-world context, write and solve a system of two-variable linear equations algebraically or graphically.	MA.912.AR.9.6

Lesson	Benchmark of Focus	Connecting Benchmark(s)
Unit 4, Lesson 8: Seeking Solutions - In this lesson, students explore strategies for determining the solution region for a system of inequalities when interpreting visuals of graphs.	MA.912.AR.9.4 Graph the solution set of a system of two-variable linear inequalities.	MA.912.AR.9.6
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 4, Lesson 9: Boundaries and Shading - In this lesson, students explore visual graphs to write and graph systems of inequalities.	MA.912.AR.9.4 Graph the solution set of a system of two-variable linear inequalities.	MA.912.AR.9.6
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 4, Lesson 10: Restaurant Meals - In this lesson, students use systems of inequalities to model real-world situations in the context of preparing vegetarian meals and non vegetarian meals.	MA.912.AR.9.4 Graph the solution set of a system of two-variable linear inequalities.	MA.912.AR.9.6
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 4, Lesson 5: City Development - In this lesson, students solve systems of equations using multiple methods and interpreting the solution in context of building apartments on unused plots of land.	MA.912.AR.9.6 Given a real-world context, represent constraints as systems of linear equations or inequalities. Interpret solutions to problems as viable or non-viable options.	MA.912.AR.9.1
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 4, Lesson 6: Bus Systems - In this lesson, students model real world situations using systems of equations to decide how many seats and handholds will be on new buses for Metropolis Transit Association.	MA.912.AR.9.6 Given a real-world context, represent constraints as systems of linear equations or inequalities. Interpret solutions to problems as viable or non-viable options.	MA.912.AR.9.1

Lesson	Benchmark of Focus	Connecting Benchmark(s)
Unit 4, Lesson 8: Seeking Solutions - In this lesson, students explore strategies for determining the solution region for a system of inequalities when interpreting visuals of graphs.	MA.912.AR.9.6 Given a real-world context, represent constraints as systems of linear equations or inequalities. Interpret solutions to problems as viable or non-viable options.	MA.912.AR.9.4
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 4, Lesson 9: Boundaries and Shading - In this lesson, students explore visual graphs to write and graph systems of inequalities.	MA.912.AR.9.6 Given a real-world context, represent constraints as systems of linear equations or inequalities. Interpret solutions to problems as viable or non-viable options.	MA.912.AR.9.4
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 4, Lesson 10: Restaurant Meals - In this lesson, students use systems of inequalities to model real-world situations in the context of preparing vegetarian meals and non vegetarian meals.	MA.912.AR.9.6 Given a real-world context, represent constraints as systems of linear equations or inequalities. Interpret solutions to problems as viable or non-viable options.	MA.912.AR.9.4
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 3, Lesson 3: Rule Breakers - In this lesson, students collaborate and use evidence-based reasoning to define a rule to determine if a set of input and output values is a function.	MA.912.F.1.1 Given an equation or graph that defines a function, classify the function type. Given an input-output table, determine a function type that could represent it.	MA.912.F.1.5, MA.912.F.1.6
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 6, Lesson 3: Sorting Relationships - In this lesson, students compare and contrast linear, exponential, and quadratic relationships in tables, patterns, and equations. In a sorting activity, partners determine which type of relationship (linear, exponential, quadratic, or other) is represented by each table and defend their reasoning.	MA.912.F.1.1 Given an equation or graph that defines a function, classify the function type. Given an input-output table, determine a function type that could represent it.	MA.912.F.1.8

Lesson	Benchmark of Focus	Connecting Benchmark(s)
Unit 6, Lesson 4: On the Fence - In this lesson, within the context of building fences, students explore the symmetry found in quadratic relationships.	MA.912.F.1.1 Given an equation or graph that defines a function, classify the function type. Given an input-output table, determine a function type that could represent it.	MA.912.AR.3.7,MA.912.F.1.8
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 3, Lesson 4: Toy Factory - In this lesson, students use linear functions to determine the price of a pizza as a function of the number of toppings ordered and other real world contexts.	MA.912.F.1.2 Given a function represented in function notation, evaluate the function for an input in its domain. For a real-world context, interpret the output.	MA.912.AR.2.2
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 3, Lesson 5: Function Carnival - In this lesson, students create and analyze graphs that represent distance and time relationships of different carnival rides.	MA.912.F.1.2 Given a function represented in function notation, evaluate the function for an input in its domain. For a real-world context, interpret the output.	MA.912.F.1.6
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 3, Lesson 9: Ins and Out - In this lesson, students explore the domain and range of real world situations such as number of hours you can rent a bike and the number of toppings that can be ordered for a pizza.	MA.912.F.1.2 Given a function represented in function notation, evaluate the function for an input in its domain. For a real-world context, interpret the output.	MA.912.F.1.5, MA.8.F.1.1
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 3, Lesson 10: Elevator Stories - In this lesson, students use compound inequalities to represent intervals of the domain and range of an elevator's height above ground as a function of time.	MA.912.F.1.2 Given a function represented in function notation, evaluate the function for an input in its domain. For a real-world context, interpret the output.	MA.912.F.1.5, MA.912.F.1.6

Lesson	Benchmark of Focus	Connecting Benchmark(s)
Unit 5, Lesson 4: Carlos and Corals - In this lesson, students evaluate exponential functions with positive, negative, and zero inputs through the lens of marine biology.	MA.912.F.1.2 Given a function represented in function notation, evaluate the function for an input in its domain. For a real-world context, interpret the output.	MA.912.NSO.1.1, MA.912.NSO.1.2, MA.912.AR.1.1, MA.912.AR.5.3, MA.912.AR.5.4, MA.912.AR.5.6
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 5, Lesson 5: Differences and Factors - In this lesson, students generalize how linear and exponential functions change over equal intervals with function tables.	MA.912.F.1.2 Given a function represented in function notation, evaluate the function for an input in its domain. For a real-world context, interpret the output.	MA.912.NSO.1.1, MA.912.NSO.1.2, MA.912.AR.1.1, MA.912.AR.5.3, MA.912.AR.5.4, MA.912.F.1.8
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 6, Lesson 7: Robot Launch - In this lesson, students identify features of quadratic functions in multiple representations (tables, graphs, equations) and determine their meaning in the context of different robots launching a ball.	MA.912.F.1.2 Given a function represented in function notation, evaluate the function for an input in its domain. For a real-world context, interpret the output.	MA.912.AR.3.7
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 6, Lesson 8: What's My Graph? - In this lesson, students collaborate to explore strategies for graphing quadratic functions by hand using a table of values.	MA.912.F.1.2 Given a function represented in function notation, evaluate the function for an input in its domain. For a real-world context, interpret the output.	MA.912.AR.3.7
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 6, Lesson 9: Two for One - In this lesson, in a partner sorting activity, students explore different representations of quadratic functions (equations, tables, and graphs) and discuss the connections between them.	MA.912.F.1.2 Given a function represented in function notation, evaluate the function for an input in its domain. For a real-world context, interpret the output.	MA.912.AR.3.7

Lesson	Benchmark of Focus	Connecting Benchmark(s)
Unit 6, Lesson 10: Interesting Intercepts - In this lesson, students relate the intercepts of the graph of a quadratic function to a specific form of its equation (factored or standard).	MA.912.F.1.2 Given a function represented in function notation, evaluate the function for an input in its domain. For a real-world context, interpret the output.	MA.912.AR.3.6, MA.912.AR.3.7
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 6, Lesson 12: Sneaker Drop - In this lesson, within the context of designing and selling a new style of sneaker, students apply their understanding of quadratic equations to compare different companies' revenue models.	MA.912.F.1.2 Given a function represented in function notation, evaluate the function for an input in its domain. For a real-world context, interpret the output.	MA.912.AR.3.6, MA.912.AR.3.7, MA.912.AR.3.8
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 6, Lesson 15: Predicting Sales - In this lesson, within the context of selling a new cell phone model, students use linear, quadratic, and exponential functions to model real world data and make predictions of future sales.	MA.912.F.1.2 Given a function represented in function notation, evaluate the function for an input in its domain. For a real-world context, interpret the output.	MA.912.AR.3.8, MA.912.F.1.8
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 3, Lesson 7: Plane, Train, and Automobile - In this lesson, students calculate the average rate of change over a specified intervals of time to compare different modes of transportation in distance-time graphs.	MA.912.F.1.3 Calculate and interpret the average rate of change of a real-world situation represented graphically, algebraically or in a table over a specified interval.	MA.912.F.1.5
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 3, Lesson 3: Rule Breakers - In this lesson, students collaborate and use evidence-based reasoning to define a rule to determine if a set of input and output values is a function.	MA.912.F.1.5 Compare key features of linear functions each represented algebraically, graphically, in tables or written descriptions.	MA.912.F.1.1, MA.912.F.1.6

Lesson	Benchmark of Focus	Connecting Benchmark(s)
Unit 3, Lesson 7: Plane, Train, and Automobile - In this lesson, students calculate the average rate of change over a specified intervals of time to compare different modes of transportation in distance-time graphs.	MA.912.F.1.5 Compare key features of linear functions each represented algebraically, graphically, in tables or written descriptions.	MA.912.F.1.3
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 3, Lesson 8: Space Race - In this lesson, students apply their understanding of function notation and key features on graphs when playing a video game.	MA.912.F.1.5 Compare key features of linear functions each represented algebraically, graphically, in tables or written descriptions.	MA.912.F.1.6
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 3, Lesson 9: Ins and Out - In this lesson, students explore the domain and range of real world situations such as number of hours you can rent a bike and the number of toppings that can be ordered for a pizza.	MA.912.F.1.5 Compare key features of linear functions each represented algebraically, graphically, in tables or written descriptions.	MA.912.F.1.2, MA.8.F.1.1
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 3, Lesson 10: Elevator Stories - In this lesson, students use compound inequalities to represent intervals of the domain and range of an elevator's height above ground as a function of time.	MA.912.F.1.5 Compare key features of linear functions each represented algebraically, graphically, in tables or written descriptions.	MA.912.F.1.2, MA.912.F.1.6
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 3, Lesson 3: Rule Breakers - In this lesson, students collaborate and use evidence-based reasoning to define a rule to determine if a set of input and output values is a function.	MA.912.F.1.6 Compare key features of linear and nonlinear functions each represented algebraically, graphically, in tables or written descriptions.	MA.912.F.1.1, MA.912.F.1.5

Lesson	Benchmark of Focus	Connecting Benchmark(s)
Unit 3, Lesson 5: Function Carnival - In this lesson, students create and analyze graphs that represent distance and time relationships of different carnival rides.	MA.912.F.1.6 Compare key features of linear and nonlinear functions each represented algebraically, graphically, in tables or written descriptions.	MA.912.F.1.2
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 3, Lesson 8: Space Race - In this lesson, students apply their understanding of function notation and key features on graphs when playing a video game.	MA.912.F.1.6 Compare key features of linear and nonlinear functions each represented algebraically, graphically, in tables or written descriptions.	MA.912.F.1.5
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 3, Lesson 10: Elevator Stories - In this lesson, students use compound inequalities to represent intervals of the domain and range of an elevator's height above ground as a function of time.	MA.912.F.1.6 Compare key features of linear and nonlinear functions each represented algebraically, graphically, in tables or written descriptions.	MA.912.F.1.2, MA.912.F.1.5
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 5, Lesson 1: Growing Globs - In this lesson, students identify and compare two different patterns of growth using a visual representation of a linear function and exponential function.	MA.912.F.1.6 Compare key features of linear and nonlinear functions each represented algebraically, graphically, in tables or written descriptions.	MA.912.AR.1.1, MA.912.F.1.8
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 5, Lesson 2: Going Viral - In this lesson, students explore connections between graphs and equations on the number of likes on a meme for every hour after it goes viral.	MA.912.F.1.6 Compare key features of linear and nonlinear functions each represented algebraically, graphically, in tables or written descriptions.	MA.912.AR.1.1, MA.912.AR.5.4, MA.912.F.1.8

Lesson	Benchmark of Focus	Connecting Benchmark(s)
Unit 5, Lesson 12: Bank Accounts - In this lesson, students model situations involving simple and compound interest through visual representations for two accounts earning interest.	MA.912.F.1.6 Compare key features of linear and nonlinear functions each represented algebraically, graphically, in tables or written descriptions.	MA.912.F.1.8, MA.912.FL.3.2, MA.912.FL.3.4
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 5, Lesson 1: Growing Globs - In this lesson, students identify and compare two different patterns of growth using a visual representation of a linear function and exponential function.	MA.912.F.1.8 Determine whether a linear, quadratic or exponential function best models a given real-world situation.	MA.912.AR.1.1, MA.912.F.1.6
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 5, Lesson 2: Going Viral - In this lesson, students explore connections between graphs and equations on the number of likes on a meme for every hour after it goes viral.	MA.912.F.1.8 Determine whether a linear, quadratic or exponential function best models a given real-world situation.	MA.912.AR.1.1, MA.912.AR.5.4, MA.912.F.1.6
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 5, Lesson 5: Differences and Factors - In this lesson, students generalize how linear and exponential functions change over equal intervals with function tables.	MA.912.F.1.8 Determine whether a linear, quadratic or exponential function best models a given real-world situation.	MA.912.NSO.1.1, MA.912.NSO.1.2, MA.912.AR.1.1, MA.912.AR.5.3, MA.912.AR.5.4, MA.912.F.1.2
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 5, Lesson 12: Bank Accounts - In this lesson, students model situations involving simple and compound interest through visual representations for two accounts earning interest.	MA.912.F.1.8 Determine whether a linear, quadratic or exponential function best models a given real-world situation.	MA.912.F.1.6, MA.912.FL.3.2, MA.912.FL.3.4
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**

Unit 6, Lesson 3: Sorting Relationships - In this lesson, students compare and contrast linear, exponential, and quadratic relationships in tables, patterns, and equations. In a sorting activity, partners determine which type of relationship (linear, exponential, quadratic, or other) is represented by each table and defend their reasoning.	MA.912.F.1.8 Determine whether a linear, quadratic or exponential function best models a given real-world situation.	MA.912.F.1.1
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 6, Lesson 4: On the Fence - In this lesson, within the context of building fences, students explore the symmetry found in quadratic relationships.	MA.912.F.1.8 Determine whether a linear, quadratic or exponential function best models a given real-world situation.	MA.912.AR.3.7, MA.912.F.1.1
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 6, Lesson 15: Predicting Sales - In this lesson, within the context of selling a new cell phone model, students use linear, quadratic, and exponential functions to model real world data and make predictions of future sales.	MA.912.F.1.8 Determine whether a linear, quadratic or exponential function best models a given real-world situation.	MA.912.AR.3.8, MA.912.F.1.2
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 6, Lesson 11: Break Through: Parabolas - In this lesson, within the context of a video game scenario, students write quadratic equations in factored form to "break the targets" at the intercepts of a parabola.	MA.912.F.2.1 Identify the effect on the graph or table of a given function after replacing $f(x)$ by $f(x) + k$, $kf(x)$, $f(kx)$ and $f(x + k)$ for specific values of k.	MA.912.AR.3.4, MA.912.AR.3.5, MA.912.AR.3.6, MA.912.AR.3.7
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 6, Lesson 13: Vertex Form - In this lesson, students relate the vertex form of a quadratic equation to transformations of the graph of quadratic function. They critique the thinking of another student when writing the equation of a parabola with a given vertex and explain their reasoning.	MA.912.F.2.1 Identify the effect on the graph or table of a given function after replacing $f(x)$ by $f(x) + k$, $kf(x)$, $f(kx)$ and $f(x + k)$ for specific values of k.	MA.912.AR.3.4, MA.912.AR.3.6, MA.912.AR.3.7

Lesson	Benchmark of Focus	Connecting Benchmark(s)
Unit 6, Lesson 14: Stretch it Out - In this lesson, students transform quadratic functions using vertical stretches. They relate the leading coefficient of a quadratic function to the behavior of its graph in a matching activity and explain their reasoning.	MA.912.F.2.1 Identify the effect on the graph or table of a given function after replacing $f(x)$ by $f(x) + k$, $kf(x)$, $f(kx)$ and $f(x + k)$ for specific values of k.	MA.912.AR.3.4, MA.912.AR.3.7
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 5, Lesson 12: Bank Accounts - In this lesson, students model situations involving simple and compound interest through visual representations for two accounts earning interest.	MA.912.FL.3.2 Solve real-world problems involving simple, compound and continuously compounded interest.	MA.912.F.1.6, MA.912.F.1.8, MA.912.FL.3.4
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 5, Lesson 13: Payday Loan - In this lesson, students analyze exponential functions that represent different compound interest scenarios through payday loans and credit card offers.	MA.912.FL.3.2 Solve real-world problems involving simple, compound and continuously compounded interest.	MA.912.NSO.1.1, MA.912.NSO.1.2, MA.912.FL.3.4
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 5, Lesson 14: Credit Card Compounding - In this lesson, students explore how credit card debt and its compounding interest demonstrates exponential growth and how it can significantly impact personal finances.	MA.912.FL.3.2 Solve real-world problems involving simple, compound and continuously compounded interest.	MA.912.NSO.1.1, MA.912.NSO.1.2, MA.912.FL.3.4
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 5, Lesson 12: Bank Accounts - In this lesson, students model situations involving simple and compound interest through visual representations for two accounts earning interest.	MA.912.FL.3.4 Explain the relationship between simple interest and linear growth. Explain the relationship between compound interest and exponential growth and the relationship between continuously compounded interest and exponential growth.	MA.912.F.1.6, MA.912.F.1.8, MA.912.FL.3.2
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**

Unit 5, Lesson 13: Payday Loan - In this lesson, students analyze exponential functions that represent different compound interest scenarios through payday loans and credit card offers.	MA.912.FL.3.4 Explain the relationship between simple interest and linear growth. Explain the relationship between compound interest and exponential growth and the relationship between continuously compounded interest and exponential growth.	MA.912.NSO.1.1, MA.912.NSO.1.2, MA.912.FL.3.2
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 5, Lesson 14: Credit Card Compounding - In this lesson, students explore how credit card debt and its compounding interest demonstrates exponential growth and how it can significantly impact personal finances.	MA.912.FL.3.4 Explain the relationship between simple interest and linear growth. Explain the relationship between compound interest and exponential growth and the relationship between continuously compounded interest and exponential growth.	MA.912.NSO.1.1, MA.912.NSO.1.2, MA.912.FL.3.2
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 2, Lesson 1: Survey Says - In this lesson, students explore different kinds of data that can be collected and how to write a good survey questions to produce qualitative data to learn more about their classmates.	MA.912.DP.1.1 Given a set of data, select an appropriate method to represent the data, depending on whether it is numerical or categorical data and on whether it is univariate or bivariate.	MA.912.DP.1.2
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 2, Lesson 6: Far Out - In this lesson, students explore outliers in a data set and their impact on deciding which measure of central tendency to apply to a situation such as typical test score, number of texts received, and ages of people in a bike shop.	MA.912.DP.1.1 Given a set of data, select an appropriate method to represent the data, depending on whether it is numerical or categorical data and on whether it is univariate or bivariate.	MA.912.DP.1.2
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 2, Lesson 7: Dynamic Decades - In this lesson, students use measures of center and spread to describe how aspects of the United States have changed over time, such as postal rates.	MA.912.DP.1.1 Given a set of data, select an appropriate method to represent the data, depending on whether it is numerical or categorical data and on whether it is univariate or bivariate.	MA.912.DP.1.2
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**

Unit 2, Lesson 13: Connecting the Dots - In this lesson, students identify trends and analyze relationships between speed and reaction time of different animals using line graphs, as well as other real world contexts.	MA.912.DP.1.1 Given a set of data, select an appropriate method to represent the data, depending on whether it is numerical or categorical data and on whether it is univariate or bivariate.	MA.912.DP.1.2
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 2, Lesson 1: Survey Says - In this lesson, students explore different kinds of data that can be collected and how to write a good survey questions to produce qualitative data to learn more about their classmates.	MA.912.DP.1.2 Interpret data distributions represented in various ways. State whether the data is numerical or categorical, whether it is univariate or bivariate and interpret the different components and quantities in the display.	MA.912.DP.1.1
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 2, Lesson 6: Far Out - In this lesson, students explore outliers in a data set and their impact on deciding which measure of central tendency to apply to a situation such as typical test score, number of texts received, and ages of people in a bike shop.	MA.912.DP.1.2 Interpret data distributions represented in various ways. State whether the data is numerical or categorical, whether it is univariate or bivariate and interpret the different components and quantities in the display.	MA.912.DP.1.1
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 2, Lesson 7: Dynamic Decades - In this lesson, students use measures of center and spread to describe how aspects of the United States have changed over time, such as postal rates.	MA.912.DP.1.2 Interpret data distributions represented in various ways. State whether the data is numerical or categorical, whether it is univariate or bivariate and interpret the different components and quantities in the display.	MA.912.DP.1.1
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 2, Lesson 13: Connecting the Dots - In this lesson, students identify trends and analyze relationships between speed and reaction time of different animals using line graphs, as well as other real world contexts.	MA.912.DP.1.2 Interpret data distributions represented in various ways. State whether the data is numerical or categorical, whether it is univariate or bivariate and interpret the different components and quantities in the display.	MA.912.DP.1.1
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**

Unit 2, Lesson 14: City Slopes - In this lesson, students extend their understanding of interpreting the slope and y-intercept of a linear function to make predictions about temperatures in different cities.	MA.912.DP.2.4 Fit a linear function to bivariate numerical data that suggests a linear association and interpret the slope and y-intercept of the model. Use the model to solve real-world problems in terms of the context of the data.	MA.912.DP.2.6
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 2, Lesson 15: Residual Fruit - In this lesson, students interpret residual plots to determine how well a line fits data regarding different weights of shipped fruit and the number of floors of a building and its height.	MA.912.DP.2.4 Fit a linear function to bivariate numerical data that suggests a linear association and interpret the slope and y-intercept of the model. Use the model to solve real-world problems in terms of the context of the data.	MA.912.DP.2.6
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 2, Lesson 16: Penguin Populations - In this lesson, students generate and analyze best fit lines to explore how penguin populations have changed over time.	MA.912.DP.2.4 Fit a linear function to bivariate numerical data that suggests a linear association and interpret the slope and y-intercept of the model. Use the model to solve real-world problems in terms of the context of the data.	MA.912.DP.2.6
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 2, Lesson 14: City Slopes - In this lesson, students extend their understanding of interpreting the slope and y-intercept of a linear function to make predictions about temperatures in different cities.	MA.912.DP.2.6 Given a scatter plot with a line of fit and residuals, determine the strength and direction of the correlation. Interpret strength and direction within a real-world context.	MA.912.DP.2.4
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**
Unit 2, Lesson 15: Residual Fruit - In this lesson, students interpret residual plots to determine how well a line fits data regarding different weights of shipped fruit and the number of floors of a building and its height.	MA.912.DP.2.6 Given a scatter plot with a line of fit and residuals, determine the strength and direction of the correlation. Interpret strength and direction within a real-world context.	MA.912.DP.2.4
Lesson	**Benchmark of Focus**	**Connecting Benchmark(s)**

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