

MATHEMATICS II, SEMESTER A

COURSE OVERVIEW

Mathematics II extends students' geometric knowledge and introduces them to quadratic expressions, equations, and functions, exploring the relationships among these and their linear and exponential counterparts. Students learn through discovery and application, developing the skills they need to break down complex challenges and demonstrate their knowledge in new situations.

Course topics include extending the number system; quadratic functions and modeling; expressions and equations; applications of probability; similarity, right-triangle trigonometry, and proofs; and circles with and without coordinates.

This course supports all students as they develop computational fluency and deepen conceptual understanding. Students begin each lesson by discovering new concepts through guided instruction, and then confirm their understanding in an interactive, feedback-rich environment. Modeling activities equip students with tools for analyzing a variety of real-world scenarios and mathematical ideas. Journaling activities allow students to reason abstractly and quantitatively, construct arguments, critique reasoning, and communicate precisely. Performance tasks prepare students to synthesize their knowledge in novel, real-world scenarios and require that they make sense of multifaceted problems and persevere in solving them.

This course is built to state standards.

COURSE COMPONENTS AND GRADING RUBRIC

The table gives a breakdown of the weight for each component in the course. Weight represents the percentage of the total score coming from each activity.

Course Components	Count	Weight
Pretest. <i>A pretest is an optional assessment, typically designed for credit recovery. If a student shows mastery of a lesson objective, the student may be automatically exempted from the upcoming activities associated with the mastered objective. Each passing pretest grade is entered into the gradebook.</i>	7	0%
Practice. <i>A practice activity provides instruction similar to that found in a study so that students can practice or review skills necessary to complete their assignment with mastery.</i>	7	10%
Journal. <i>A journal is a short reflective writing exercise that encourages students to connect historical events and ideas to their own lives and circumstances.</i>	7	5%
Project. <i>A project is a hands-on investigation that extends over several weeks.</i>	1	5%

Course Components	Count	Weight
Mastery Test. <i>A mastery test is a computer-scored lesson-level summative assessment.</i>	43	40%
Posttest. <i>A posttest appears at the end of each unit.</i>	7	15%
End-of-Semester Test. <i>An end-of-semester test (EOS) appears at the end of each course.</i>	1	10%
Teacher-Graded Posttest. <i>A posttest that prompts students for written responses appears at the end of each unit.</i>	7	15%
Total	80	100%

*Teachers may manually adjust these weights if desired, per district grading requirements.

UNIT 1: FUNCTIONS

Lesson and Duration	Description
Pretest: Functions 40 minutes	Complete the pretest (optional).
Functions: Unit Overview 1 minute	Read the unit overview.
LESSON 1 What Is a Function?: Lesson Overview 5 minutes	Read the lesson objectives.
Relating to Functions: Study 35 minutes	Learn about functions, their graphs, and some special functions.
Practice Problems: Checkup 25 minutes	Complete a set of practice problems on functions.
What Is a Function?: Mastery Test 20 minutes	Take a quiz to assess your understanding of the material.
LESSON 2 Graphing Functions: Lesson Overview 5 minutes	Read the lesson objectives.

Lesson and Duration	Description
Graphing Functions: Study <i>35 minutes</i>	Learn the vertical line and horizontal line tests for evaluating a function. Evaluate a function for given values and explore special functions.
Practice Problems: Checkup <i>25 minutes</i>	Complete a set of practice problems on graphing functions.
Graphing Functions: Mastery Test <i>20 minutes</i>	Take a quiz to assess your understanding of the material.
LESSON 3 Linear Functions: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
Linear Functions: Study <i>35 minutes</i>	Learn about slope and the three main forms of linear functions.
Practice Problems: Checkup <i>25 minutes</i>	Complete a set of practice problems on linear functions.
Linear Functions: Mastery Test <i>20 minutes</i>	Take a quiz to assess your understanding of the material.
LESSON 4 Linear Equations and Inequalities: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
Linear Equations and Inequalities: Study <i>35 minutes</i>	Learn how to solve linear equations and inequalities.
Practice Problems: Checkup <i>25 minutes</i>	Complete a set of practice problems on linear equations and inequalities.
Linear Equations and Inequalities: Mastery Test <i>20 minutes</i>	Take a quiz to assess your understanding of the material.
Journal: The Summer Job <i>45 minutes</i>	Work through a real-world problem involving linear equations and inequalities.

Lesson and Duration	Description
LESSON 5	
Linear Systems: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
Finding the Point of Intersection: Study <i>35 minutes</i>	Find the point of intersection of linear systems using algebra, graphing, and matrices.
Connection to Business: Linear Programming: Study <i>35 minutes</i>	Learn how businesses solve problems using linear programming.
Practice Problems: Checkup <i>25 minutes</i>	Complete a set of practice problems on linear systems.
Linear Systems: Mastery Test <i>20 minutes</i>	Take a quiz to assess your understanding of the material.
Practice: Modeling: Best Ticket Deal <i>45 minutes</i>	Model ticket pricing using an equation.
LESSON 6	
Linear and Nonlinear Functions: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
Linear and Nonlinear Functions: Study <i>35 minutes</i>	Learn about linear and nonlinear functions.
Practice Problems: Checkup <i>25 minutes</i>	Check your understanding of the lesson.
Linear and Nonlinear Functions: Mastery Test <i>20 minutes</i>	Take a quiz to check your understanding of what you have learned.
LESSON 7	
Linear and Exponential Growth: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.

Lesson and Duration	Description
Linear and Exponential Growth: Study <i>35 minutes</i>	Learn to identify the graphs of linear and nonlinear functions, use the horizontal line test to evaluate functions, and explore special functions.
Practice Problems: Checkup <i>25 minutes</i>	Check your understanding of the lesson.
Linear and Exponential Growth: Mastery Test <i>20 minutes</i>	Take a quiz to check your understanding of what you have learned.
LESSON 8 Arithmetic of Functions: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
Arithmetic of Functions: Study <i>35 minutes</i>	Learn how to add, subtract, multiply, divide, and compose functions.
Practice Problems: Checkup <i>25 minutes</i>	Complete a set of practice problems on the arithmetic of functions.
Arithmetic of Functions: Mastery Test <i>20 minutes</i>	Take a quiz to assess your understanding of the material.
UNIT 1 WRAP-UP Functions: Review <i>30 minutes</i>	Check your understanding of the unit.
Posttest: Functions <i>40 minutes</i>	Take a computer-scored test to check what you have learned in this unit.
Teacher-Graded Posttest: Functions <i>50 minutes</i>	Take a teacher-scored test to check what you have learned in this unit.

UNIT 2: EXPONENTIAL FUNCTIONS

Lesson and Duration	Description
Pretest: Exponential Functions <i>40 minutes</i>	Complete the pretest (optional).

Lesson and Duration	Description
Exponential Functions: Unit Overview <i>1 minute</i>	Read the unit overview.
LESSON 1 Types of Numbers: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
Types of Numbers: Study <i>35 minutes</i>	Learn about different types of real numbers, including exponents decimals and percents. Compare numbers of different types and formats using a number line.
Practice Problems: Checkup <i>25 minutes</i>	Complete a set of practice problems to hone your calculation skills.
Types of Numbers: Mastery Test <i>20 minutes</i>	Take a quiz to assess your understanding of the material.
LESSON 2 Exponents: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
Exponents: Study <i>45 minutes</i>	Evaluate exponential expressions. Use properties to rewrite exponential expressions, including those with rational exponents, and to rewrite radicals using fractional exponents.
Practice Problems: Checkup <i>25 minutes</i>	Check your understanding of the lesson.
Exponents: Mastery Test <i>20 minutes</i>	Take a quiz to check your understanding of what you have learned.
LESSON 3 Exponential Functions: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
Exponential Functions: Study <i>45 minutes</i>	Define an exponential function and explore applications of exponential functions, such as exponential growth and decay. Interpret the parts of an exponential expression that represents a real-world context.

Lesson and Duration	Description
Practice Problems: Checkup <i>25 minutes</i>	Check your understanding of the lesson.
Exponential Functions: Mastery Test <i>20 minutes</i>	Take a quiz to check your understanding of what you have learned.
Simple and Compound Interest: Study <i>35 minutes</i>	Learn about simple and compound interest.
Practice: Modeling: Exponential Functions <i>45 minutes</i>	Model and solve a real-world problem.
LESSON 4 Graphs of Exponential Functions: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
Graphs of Exponential Functions: Study <i>45 minutes</i>	Learn about graphs of exponential functions with different bases. Identify the domain, range and y-intercept of an exponential function from its equation and from its graph. Use graphs to evaluate exponential functions for given x-values.
Practice Problems: Checkup <i>25 minutes</i>	Check your understanding of the lesson.
Graphs of Exponential Functions: Mastery Test <i>20 minutes</i>	Take a quiz to check your understanding of what you have learned.
Journal: Graphs of Exponential Functions <i>45 minutes</i>	Construct arguments and critique the reasoning of others as you write about topics in algebra.
UNIT 2 WRAP-UP Exponential Functions: Review <i>30 minutes</i>	Check your understanding of the topics in this unit.
Posttest: Exponential Functions <i>40 minutes</i>	Take a computer-scored test to check what you have learned in this unit.

Lesson and Duration	Description
Teacher-Graded Posttest: Exponential Functions <i>50 minutes</i>	Take a teacher-scored test to check what you have learned in this unit.

UNIT 3: POLYNOMIALS

Lesson and Duration	Description
Pretest: Polynomials <i>40 minutes</i>	Complete the pretest (optional).
Polynomials: Unit Overview <i>1 minute</i>	Read the unit overview.
LESSON 1 What Is a Polynomial?: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
What Is a Polynomial?: Study <i>45 minutes</i>	Learn the definitions for monomials, polynomials, constants, terms, coefficients, binomials, trinomials, and degree. Learn how to find the degree of polynomials.
Practice Problems: Checkup <i>25 minutes</i>	Check your understanding of the lesson.
What Is a Polynomial?: Mastery Test <i>20 minutes</i>	Take a quiz to check your understanding of what you have learned.
LESSON 2 Adding and Subtracting Polynomials: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
Adding and Subtracting Polynomials: Study <i>45 minutes</i>	Learn how to add and subtract polynomials by collecting like terms. Practice adding and subtracting polynomials both vertically and horizontally.
Practice Problems: Checkup <i>25 minutes</i>	Check your understanding of the lesson.

Lesson and Duration	Description
Adding and Subtracting Polynomials: Mastery Test <i>20 minutes</i>	Take a quiz to check your understanding of what you have learned.
LESSON 3 Multiplying Binomials: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
Multiplying Binomials: Study <i>45 minutes</i>	Learn how to multiply binomials using the distributive property. Use the FOIL mnemonic to help you multiply binomials.
Practice Problems: Checkup <i>25 minutes</i>	Check your understanding of the lesson.
Multiplying Binomials: Mastery Test <i>20 minutes</i>	Take a quiz to check your understanding of what you have learned.
Practice: Modeling: Multiplying Binomials <i>45 minutes</i>	Model and solve a real-world problem.
LESSON 4 Multiplying Polynomials: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
Multiplying Polynomials: Study <i>45 minutes</i>	Extend the use of the distributive property to multiply polynomials with more than two terms. Use a table to organize the multiplication of polynomials. Practice multiplying polynomials horizontally and vertically.
Practice Problems: Checkup <i>25 minutes</i>	Check your understanding of the lesson.
Multiplying Polynomials: Mastery Test <i>20 minutes</i>	Take a quiz to check your understanding of what you have learned.
Journal: Multiplying Polynomials <i>45 minutes</i>	Construct arguments and critique the reasoning of others as you write about topics in algebra.

Lesson and Duration	Description
LESSON 5 Dividing Polynomials: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
Dividing Polynomials: Study <i>35 minutes</i>	Learn how to do long division with polynomials. Find out how to divide polynomials with missing terms and divide polynomials with remainders.
Practice Problems: Checkup <i>25 minutes</i>	Check your understanding of the lesson.
Dividing Polynomials: Mastery Test <i>20 minutes</i>	Take a quiz to check your understanding of what you have learned.
UNIT 3 WRAP-UP Polynomials: Review <i>30 minutes</i>	Check your understanding of the topics in this unit.
Posttest: Polynomials <i>40 minutes</i>	Take a computer-scored test to check what you have learned in this unit.
Teacher-Graded Posttest: Polynomials <i>50 minutes</i>	Take a teacher-scored test to check what you have learned in this unit.

UNIT 4: FACTORING POLYNOMIALS

Lesson and Duration	Description
Pretest: Factoring Polynomials <i>40 minutes</i>	Complete the pretest (optional).
Factoring Polynomials: Unit Overview <i>1 minute</i>	Read the unit overview.
LESSON 1 GCF and Factoring by Grouping: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.

Lesson and Duration	Description
GCF and Factoring by Grouping: Study <i>45 minutes</i>	Explore the similarities between factoring numbers and polynomials. Learn how to identify the greatest common factor (GCF) of the terms of a polynomial, and how to use grouping to factor polynomials.
Practice Problems: Checkup <i>25 minutes</i>	Check your understanding of the lesson.
GCF and Factoring by Grouping: Mastery Test <i>20 minutes</i>	Take a quiz to check your understanding of what you have learned.
LESSON 2 Factoring Trinomials, Part 1: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
Factoring Trinomials, Part 1: Study <i>45 minutes</i>	Learn the definition of a quadratic trinomial. Learn how to factor quadratic trinomials when the coefficient of the x -squared term is 1.
Practice Problems: Checkup <i>25 minutes</i>	Check your understanding of the lesson.
Factoring Trinomials, Part 1: Mastery Test <i>20 minutes</i>	Take a quiz to check your understanding of what you have learned.
LESSON 3 Factoring Trinomials, Part 2: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
Factoring Trinomials, Part 2: Study <i>45 minutes</i>	Learn how to factor quadratic trinomials with leading coefficients other than 1.
Practice Problems: Checkup <i>25 minutes</i>	Check your understanding of the lesson.
Factoring Trinomials, Part 2: Mastery Test <i>20 minutes</i>	Take a quiz to check your understanding of what you have learned.

Lesson and Duration	Description
Practice: Modeling: Factoring Trinomials <i>45 minutes</i>	Model and solve a real-world problem.
LESSON 4 Special Cases: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
Special Cases: Study <i>45 minutes</i>	Learn how to work with special cases of factoring. Learn definitions for a perfect square trinomial and a difference of two squares. Practice using strategies that will help you factor each of these special cases.
Practice Problems: Checkout <i>25 minutes</i>	Check your understanding of the lesson.
Special Cases: Mastery Test <i>20 minutes</i>	Take a quiz to check your understanding of what you have learned.
LESSON 5 Factoring and Graphing: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
Factoring and Graphing: Study <i>45 minutes</i>	Compare x-intercepts, zeros, roots, and linear factors. Identify the roots of a polynomial. Use the intercepts of the graph of a function to identify the roots and factors of a related equation and vice versa. Understand that a quadratic function may have 0, 1, or 2 real zeros.
Practice Problems: Checkout <i>25 minutes</i>	Check your understanding of the lesson.
Factoring and Graphing: Mastery Test <i>20 minutes</i>	Take a quiz to check your understanding of what you have learned.
Journal: Factoring and Graphing <i>45 minutes</i>	Construct arguments and critique the reasoning of others as you write about topics in algebra.
UNIT 4 WRAP-UP Factoring Polynomials: Review <i>30 minutes</i>	Check your understanding of the topics in this unit.

Lesson and Duration	Description
Posttest: Factoring Polynomials <i>40 minutes</i>	Take a computer-scored test to check what you have learned in this unit.
Teacher-Graded Posttest: Factoring Polynomials <i>50 minutes</i>	Take a teacher-scored test to check what you have learned in this unit.

UNIT 5: QUADRATIC EQUATIONS AND FUNCTIONS

Lesson and Duration	Description
Pretest: Quadratic Equations and Functions <i>40 minutes</i>	Complete the pretest (optional).
Quadratic Equations and Functions: Unit Overview <i>1 minute</i>	Read the unit overview.
LESSON 1 Solving Quadratic Equations: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
Solving Quadratic Equations: Study <i>45 minutes</i>	Learn to solve quadratics in the form $x^2 = b$ by taking square roots. Use the zero product property to solve quadratic equations by factoring. Learn about standard form and rewrite quadratic equations in that form.
Practice Problems: Checkup <i>25 minutes</i>	Check your understanding of the lesson.
Solving Quadratic Equations: Mastery Test <i>20 minutes</i>	Take a quiz to check your understanding of what you have learned.
LESSON 2 Completing the Square: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.

Lesson and Duration	Description
Completing the Square: Study 45 minutes	Learn the definition for a special case of factoring called completing the square. Explore the steps to complete a square and practice solving quadratic equations by using this way of factoring.
Practice Problems: Checkup 25 minutes	Check your understanding of the lesson.
Completing the Square: Mastery Test 20 minutes	Take a quiz to check your understanding of what you have learned.
Journal: Completing the Square 45 minutes	Construct arguments and critique the reasoning of others as you write about topics in algebra.
LESSON 3 The Quadratic Formula: Lesson Overview 5 minutes	Read the lesson objectives.
The Quadratic Formula: Study 45 minutes	Learn the derivation of the quadratic formula and see how it can be used to solve quadratic equations. Understand that the discriminant can be used to determine whether a quadratic equation has 0, 1, or 2 real solutions.
Practice Problems: Checkup 25 minutes	Check your understanding of the lesson.
The Quadratic Formula: Mastery Test 20 minutes	Take a quiz to check your understanding of what you have learned.
LESSON 4 Graphs of Quadratic Functions: Lesson Overview 5 minutes	Read the lesson objectives.
Graphs of Quadratic Functions: Study 45 minutes	Relate factors of a quadratic function to the graph of a parabola and its corresponding x-intercepts. Locate the vertex of a quadratic function graphically and algebraically. Understand vertex form and use it to identify the vertex of a quadratic function.

Lesson and Duration	Description
Practice Problems: Checkup <i>25 minutes</i>	Check your understanding of the lesson.
Graphs of Quadratic Functions: Mastery Test <i>20 minutes</i>	Take a quiz to check your understanding of what you have learned.
LESSON 5 Working with Complex Numbers: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
Working with Complex Numbers: Study <i>35 minutes</i>	Learn about imaginary and complex numbers, perform basic arithmetic operations on complex numbers, and solve equations with imaginary and complex numbers.
Practice Problems: Checkup <i>25 minutes</i>	Complete a set of practice problems to check your understanding of the lesson.
Working with Complex Numbers: Mastery Test <i>20 minutes</i>	Take a quiz to check your understanding of what you have learned.
LESSON 6 Nonlinear Systems of Equations: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
Nonlinear Systems of Equations: Study <i>45 minutes</i>	Learn about solution sets for nonlinear systems of equations. Practice solving nonlinear systems of equations by graphing and by using the substitution method. Explore a human-cannonball case study.
Practice Problems: Checkup <i>25 minutes</i>	Check your understanding of the lesson.
Nonlinear Systems of Equations: Mastery Test <i>20 minutes</i>	Take a quiz to check your understanding of what you have learned.

Lesson and Duration	Description
LESSON 7 Linear, Quadratic, and Exponential Functions: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
Linear, Quadratic, and Exponential Functions: Study <i>45 minutes</i>	Identify and compare linear, quadratic, and exponential functions and write functions that model real-world situations.
Practice Problems: Checkup <i>25 minutes</i>	Check your understanding of the lesson.
Linear, Quadratic, and Exponential Functions: Mastery Test <i>20 minutes</i>	Take a quiz to check your understanding of what you have learned.
Practice: Modeling: Linear, Quadratic, and Exponential Functions <i>45 minutes</i>	Model and solve a real-world problem.
LESSON 8 Performance Task: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
The Headphones Problem: Study <i>45 minutes</i>	Use what you have learned about graphing polynomials to solve a real-world business problem.
Project: Your Dog-Walking Business <i>2 hours</i>	Use your knowledge, skills, and resources to make sense of and persevere in solving a real-world problem.
UNIT 5 WRAP-UP Quadratic Equations and Functions: Review <i>30 minutes</i>	Check your understanding of the topics in this unit.
Posttest: Quadratic Equations and Functions <i>40 minutes</i>	Take a computer-scored test to check what you have learned in this unit.

Lesson and Duration	Description
Teacher-Graded Posttest: Quadratic Equations and Functions <i>50 minutes</i>	Take a teacher-scored test to check what you have learned in this unit.

UNIT 6: UNDOING FUNCTIONS AND MOVING THEM AROUND

Lesson and Duration	Description
Pretest: Undoing Functions and Moving Them Around <i>40 minutes</i>	Complete the pretest (optional).
Undoing Functions and Moving Them Around: Unit Overview <i>1 minute</i>	Read the unit overview.
LESSON 1 Literal Equations: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
Literal Equations: Study <i>45 minutes</i>	Learn how to solve literal equations, including formulas, for a particular variable.
Practice Problems: Checkup <i>25 minutes</i>	Check your understanding of the lesson.
Literal Equations: Mastery Test <i>20 minutes</i>	Take a quiz to check your understanding of what you have learned.
LESSON 2 Inverses: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
Inverses: Study <i>45 minutes</i>	Learn about undoing functions, mapping diagrams of inverse functions, and finding the equations for inverse functions.
Practice Problems: Checkup <i>25 minutes</i>	Check your understanding of the lesson.

Lesson and Duration	Description
Inverses: Mastery Test <i>20 minutes</i>	Take a quiz to check your understanding of what you have learned.
LESSON 3 Parent Functions: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
Parent Functions: Study <i>45 minutes</i>	Learn about the properties and graphs of linear parent functions, quadratic parent functions, absolute value parent functions, and step functions.
Practice Problems: Checkup <i>25 minutes</i>	Check your understanding of the lesson.
Parent Functions: Mastery Test <i>20 minutes</i>	Take a quiz to check your understanding of what you have learned.
LESSON 4 Shifting Functions: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
Shifting Functions: Study <i>45 minutes</i>	Learn about shifting graphs of functions up/down and left/right by changing the coordinates of each ordered pair. Learn about changing the equation of a function to shift its graph vertically or horizontally and about combining vertical and horizontal shifts.
Practice Problems: Checkup <i>25 minutes</i>	Check your understanding of the lesson.
Shifting Functions: Mastery Test <i>20 minutes</i>	Take a quiz to check your understanding of what you have learned.
Journal: Shifting Functions <i>45 minutes</i>	Construct arguments and critique the reasoning of others as you write about topics in algebra.
LESSON 5 Stretching and Compressing Functions: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.

Lesson and Duration	Description
Stretching and Compressing Functions: Study <i>45 minutes</i>	Learn about stretching or compressing a function's graph by multiplying by a constant, flipping the graph by multiplying by a negative constant, and combining stretches with shifts.
Practice Problems: Checkup <i>25 minutes</i>	Check your understanding of the lesson.
Stretching and Compressing Functions: Mastery Test <i>20 minutes</i>	Take a quiz to check your understanding of what you have learned.
Practice: Modeling: Stretching and Compressing Functions <i>45 minutes</i>	Model and solve a real-world problem.
LESSON 6 Transformations of Parent Functions: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
Transformations of Parent Functions: Study <i>45 minutes</i>	Learn how to perform vertical and horizontal shifts, stretches, and compressions, and any combination of these transformations, on parent functions.
Practice Problems: Checkup <i>25 minutes</i>	Check your understanding of the lesson.
Transformations of Parent Functions: Mastery Test <i>20 minutes</i>	Take a quiz to check your understanding of what you have learned.
UNIT 6 WRAP-UP Undoing Functions and Moving Them Around: Review <i>30 minutes</i>	Check your understanding of the topics in this unit.
Posttest: Undoing Functions and Moving Them Around <i>40 minutes</i>	Take a computer-scored test to check what you have learned in this unit.

Lesson and Duration	Description
Teacher-Graded Posttest: Undoing Functions and Moving Them Around <i>50 minutes</i>	Take a teacher-scored test to check what you have learned in this unit.

UNIT 7: APPLICATIONS OF PROBABILITY

Lesson and Duration	Description
Pretest: Applications of Probability <i>40 minutes</i>	Complete the pretest (optional).
Applications of Probability: Unit Overview <i>1 minute</i>	Read the unit overview.
LESSON 1 What Is Probability?: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
What Is Probability?: Study <i>35 minutes</i>	Learn the definition for probability and explore its different forms.
Practice Problems: Checkup <i>25 minutes</i>	Check your understanding of the lesson.
What Is Probability?: Mastery Test <i>20 minutes</i>	Take a quiz to check your understanding of what you have learned.
Organizing What Is Possible: Study <i>35 minutes</i>	Explore the numbers of possible outcomes from a brown bag containing gum balls of different colors.
LESSON 2 Counting Principles: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.

Lesson and Duration	Description
Counting Principles: Study <i>35 minutes</i>	Learn about counting strategies and the multiplication principle. Practice using tree diagrams and Venn diagrams in probability problems.
Practice Problems: Checkup <i>25 minutes</i>	Check your understanding of the lesson.
Counting Principles: Mastery Test <i>20 minutes</i>	Take a quiz to check your understanding of what you have learned.
LESSON 3 Permutations and Combinations: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
Permutations and Combinations: Study <i>35 minutes</i>	Learn the definitions for permutation and combination. Distinguish which situations require permutations and which require combinations. Determine probabilities using permutation and combinations.
Practice Problems: Checkup <i>25 minutes</i>	Check your understanding of the lesson.
Permutations and Combinations: Mastery Test <i>20 minutes</i>	Take a quiz to check your understanding of what you have learned.
LESSON 4 Basic Rules of Probability: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
Basic Rules of Probability: Study <i>35 minutes</i>	Learn four rules of probability, as well as the addition rule for disjoint events and the multiplication rule for independent events.
Practice Problems: Checkup <i>25 minutes</i>	Check your understanding of the lesson.
Basic Rules of Probability: Mastery Test <i>20 minutes</i>	Take a quiz to check your understanding of what you have learned.

Lesson and Duration	Description
LESSON 5	
Geometric Models for Probability: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
Geometric Models for Probability: Study <i>50 minutes</i>	Use area models to connect geometry to probability and statistics.
Practice Problems: Checkup <i>25 minutes</i>	Complete a set of practice problems to check your understanding of the lesson.
Geometric Models for Probability: Mastery Test <i>20 minutes</i>	Take a quiz to assess your understanding of the material.
LESSON 6	
Conditional Probability: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
Conditional Probability: Study <i>35 minutes</i>	Learn how to identify and solve conditional probability problems using correct notation, formulas, and tables.
Practice Problems: Checkup <i>25 minutes</i>	Complete a set of practice problems to check your understanding of the lesson.
Conditional Probability: Mastery Test <i>20 minutes</i>	Take a quiz to assess your understanding of the material.
Practice: Modeling: A Student Survey <i>45 minutes</i>	Use your knowledge of conditional probability to analyze the results of a student survey.
LESSON 7	
Independence: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
Independence: Study <i>35 minutes</i>	Learn how to show if two events are independent, and solve probability problems for both independent and dependent events using the multiplication rule and tree diagrams.

Lesson and Duration	Description
Practice Problems: Checkup <i>25 minutes</i>	Complete a set of practice problems to check your understanding of the lesson.
Independence: Mastery Test <i>20 minutes</i>	Take a quiz to assess your understanding of the material.
Journal: Smoking and Lung Cancer <i>45 minutes</i>	Use what you know about conditional probability and independence to critique the reasoning of others.
LESSON 8	
Simulations: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
Simulations: Study <i>35 minutes</i>	Learn how to simulate a random event using random number generators and rows of random digits and use results to estimate probabilities empirically.
Practice Problems: Checkup <i>25 minutes</i>	Complete a set of practice problems to check your understanding of the lesson.
Simulations: Mastery Test <i>20 minutes</i>	Take a quiz to assess your understanding of the material.
UNIT 7 WRAP-UP	
Applications of Probability: Review <i>30 minutes</i>	Check your understanding of the topics in this unit.
Posttest: Applications of Probability <i>40 minutes</i>	Take a computer-scored test to assess what you have learned in this unit.
Teacher-Graded Posttest: Applications of Probability <i>50 minutes</i>	Take a teacher-scored test to assess what you have learned in this unit.

SEMESTER WRAP-UP

Lesson and Duration	Description
Semester Review: Review <i>30 minutes</i>	Prepare for the final exam by reviewing key concepts and skills.

Lesson and Duration	Description
End-of-Semester Test: Semester Exam <i>50 minutes</i>	Take a computer-scored exam to demonstrate your mastery of concepts and skills covered in this semester.