

MATHEMATICS III, SEMESTER A

COURSE OVERVIEW

Mathematics III incorporates advanced functions, trigonometry, and probability and statistics as students synthesize their prior knowledge and solve increasingly challenging problems. 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 formulating inferences and conclusions from data; polynomial, rational, and radical relationships; trigonometry of general triangles and trigonometric functions; and mathematical modeling.

This course supports all students as they simultaneously develop computational fluency, deepen conceptual understanding, and apply mathematical practice skills. 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. Throughout the course, students are evaluated through a diversity of assessments specifically designed to prepare them for the content, form, and depth of state assessments.

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. 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.	5	0%
Practice. 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.	5	10%

Course Components	Count	Weight
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>	5	5%
Project. <i>A project is a hands-on investigation that extends over several weeks.</i>	1	5%
Mastery Test. <i>A mastery test is a computer-scored lesson-level summative assessment.</i>	42	40%
Posttest. <i>A posttest appears at the end of each unit.</i>	5	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>	5	15%
Total	69	100%

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

UNIT 1: STATISTICAL ANALYSIS

Lesson and Duration	Description
Pretest: Statistical Analysis <i>40 minutes</i>	Complete the pretest (optional).
Statistical Analysis: Unit Overview <i>1 minute</i>	Read the unit overview.
LESSON 1 Review of Graphical Analysis of Data: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
Review of Graphical Analysis of Data: Study <i>35 minutes</i>	Learn about the different ways to express data graphically and the various shapes or properties these representations have.
Practice Problems: Checkup <i>25 minutes</i>	Complete a set of practice problems to check your understanding of the lesson.
Review of Graphical Analysis of Data: Mastery Test <i>20 minutes</i>	Take a quiz to check your understanding of what you have learned.

Lesson and Duration	Description
LESSON 2 Review of Numerical Analysis of Data: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
Review of Numerical Analysis of Data: Study <i>35 minutes</i>	Learn about the numerical analysis of data as it relates to means, medians, modes, IQR, outliers, test quartiles, box plots, variance, and standard deviation.
Practice Problems: Checkup <i>25 minutes</i>	Complete a set of practice problems to check your understanding of the lesson.
Review of Numerical Analysis of Data: Mastery Test <i>20 minutes</i>	Take a quiz to check your understanding of what you have learned.
LESSON 3 Data Gathering and Inferential Statistics: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
Data Gathering and Inferential Statistics: Study <i>35 minutes</i>	Investigate techniques for gathering data and explore how probability is used in statistical inference.
Practice Problems: Checkup <i>25 minutes</i>	Complete a set of practice problems to check your understanding of the lesson.
Data Gathering and Inference: Mastery Test <i>20 minutes</i>	Take a quiz to check your understanding of what you have learned.
LESSON 4 Random Variables: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
Random Variables: Study <i>35 minutes</i>	Explore random variable concepts such as discrete continuous variables, histograms, density curves, mean, standard deviation of discrete random variables, normal curve, and z-score percentiles.

Lesson and Duration	Description
Practice Problems: Checkup <i>25 minutes</i>	Complete a set of practice problems to check your understanding of the lesson.
Random Variables: Mastery Test <i>20 minutes</i>	Take a quiz to check your understanding of what you have learned.
Journal: Cell Phone Battery Life <i>30 minutes</i>	Evaluate the design and results of an experiment with a peer.
LESSON 5 Experimental Design: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
Experimental Design: Study <i>35 minutes</i>	Learn how to design and carry out an experiment employing the basic principles of experimental design.
Practice Problems: Checkup <i>25 minutes</i>	Complete a set of practice problems to check your understanding of the lesson.
Experimental Design: Mastery Test <i>20 minutes</i>	Take a quiz to check your understanding of what you have learned.
LESSON 6 Evaluating Published Reports: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
Evaluating Published Reports: Study <i>35 minutes</i>	Learn how to evaluate the design of a study, the appropriateness of its analysis, and the validity of its conclusions.
Practice Problems: Checkup <i>25 minutes</i>	Complete a set of practice problems to check your understanding of the lesson.
Evaluating Published Reports: Mastery Test <i>20 minutes</i>	Take a quiz to assess your understanding of the material.

Lesson and Duration	Description
LESSON 7	
Applications of Statistical Techniques: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
Applications of Statistical Techniques: Study <i>35 minutes</i>	Learn how statistical techniques are used to analyze real-world observational studies and experimental designs.
Practice Problems: Checkup <i>25 minutes</i>	Complete a set of practice problems to check your understanding of the lesson.
Applications of Statistical Techniques: Mastery Test <i>20 minutes</i>	Take a quiz to assess your understanding of the material.
Practice: Statistical Truth or Fiction? <i>30 minutes</i>	Evaluate gathered data and make a prediction using statistical techniques.
Statistical Analysis: Checkup <i>25 minutes</i>	Submit your work for a set of 20 practice problems.
UNIT 1 WRAP-UP	
Statistical Analysis: Review <i>20 minutes</i>	Get ready for the unit test by reviewing important ideas and skills.
Posttest: Statistical Analysis <i>40 minutes</i>	Take a computer-scored test to check what you have learned in this unit.
Teacher-Graded Posttest: Statistical Analysis <i>30 minutes</i>	Take a teacher-scored test to check what you have learned in this unit.

UNIT 2: FUNCTIONS

Lesson and Duration	Description
Pretest: Functions <i>40 minutes</i>	Complete the pretest (optional).
Functions: Unit Overview <i>1 minute</i>	Read the unit overview.

Lesson and Duration	Description
LESSON 1	
What Is a Function?: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
Relating to Functions: Study <i>35 minutes</i>	Learn about functions, their graphs, and some special functions.
Practice Problems: Checkup <i>25 minutes</i>	Complete a set of practice problems on functions.
What Is a Function?: Mastery Test <i>20 minutes</i>	Take a quiz to assess your understanding of the material.
LESSON 2	
Graphing Functions: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
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 and Duration	Description
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>30 minutes</i>	Work through a real-world problem involving linear equations and inequalities.
LESSON 5 Solving Literal Equations and Formulas: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
Solving Literal Equations and Formulas: Study <i>35 minutes</i>	Learn how to solve literal equations for one variable.
Practice Problems: Checkup <i>25 minutes</i>	Check your understanding of the lesson.
Solving Literal Equations and Formulas: Mastery Test <i>20 minutes</i>	Take a quiz to check your understanding of what you have learned.
LESSON 6 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.

Lesson and Duration	Description
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.
LESSON 7 Quadratic Functions: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
Quadratic Functions: Study <i>35 minutes</i>	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. Use the discriminant of the quadratic formula to identify the number and types of solutions to a given quadratic equation, as well as to visualize its corresponding graph.
Practice Problems: Checkup <i>25 minutes</i>	Complete a set of practice problems to check your understanding of the lesson.
Quadratic Functions: Mastery Test <i>20 minutes</i>	Take a quiz to check your understanding of what you have learned.
Practice: Modeling: Pumpkin Launch <i>30 minutes</i>	Model a graph with real world data.
LESSON 8 Nonlinear Systems of Equations: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.

Lesson and Duration	Description
Nonlinear Systems of Equations: Study <i>35 minutes</i>	Learn about solution sets for nonlinear systems of equations, solving nonlinear systems of equations using the substitution method, choosing which variable to isolate, substituting a squared variable, and determining the number of solutions. Explore a human-cannonball case study.
Practice Problems: Checkup <i>25 minutes</i>	Complete a set of practice problems to 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 9 Nonlinear Systems of Inequalities: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
Nonlinear Systems of Inequalities: Study <i>35 minutes</i>	Learn about solution sets for and graphs of nonlinear inequalities; boundaries of parabolas; three steps to graphing nonlinear inequalities; and nonlinear systems of inequalities.
Practice Problems: Checkup <i>25 minutes</i>	Complete a set of practice problems to check your understanding of the lesson.
Nonlinear Inequalities: Mastery Test <i>20 minutes</i>	Take a quiz to check your understanding of what you have learned.
Functions: Checkup <i>25 minutes</i>	Check your understanding of the unit.
UNIT 2 WRAP-UP Functions: Review <i>20 minutes</i>	Get ready for the unit test by reviewing important ideas and skills.
Posttest: 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: Functions <i>30 minutes</i>	Take a teacher-scored test to check what you have learned in this unit.

UNIT 3: TRANSFORMING FUNCTIONS

Lesson and Duration	Description
Pretest: Transforming Functions <i>40 minutes</i>	Complete the pretest (optional).
Transforming Functions: Unit Overview <i>1 minute</i>	Read the unit overview.
LESSON 1 Inverses: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
Inverses: Study <i>35 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>	Complete a set of practice problems to check your understanding of the lesson.
Inverses: Mastery Test <i>20 minutes</i>	Take a quiz to check your understanding of what you have learned.
LESSON 2 Graphs of Inverses: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
Graphs of Inverses: Study <i>35 minutes</i>	Learn how to convert the graph of a given function to the graph of its inverse by swapping coordinates of all ordered pairs. Use mapping diagrams, horizontal line tests, and the concept of symmetry across the line $y = x$ to determine if the inverse of a given function is also a function.
Practice Problems: Checkup <i>25 minutes</i>	Complete a set of practice problems to check your understanding of the lesson.

Lesson and Duration	Description
Graphs of Inverses: Mastery Test <i>20 minutes</i>	Take a quiz to check your understanding of what you have learned.
Journal: Inverting Time and Temperature <i>30 minutes</i>	Model the rate of melting ice using a graph, and experiment with inverting the axes.
LESSON 3 Parent Functions: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
Parent Functions: Study <i>35 minutes</i>	Learn about the properties and graphs of linear parent functions, quadratic parent functions, absolute value parent functions, and reciprocal parent functions.
Practice Problems: Checkup <i>25 minutes</i>	Complete a set of practice problems to 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>35 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>	Complete a set of practice problems to 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.

Lesson and Duration	Description
LESSON 5 Stretching Functions Vertically: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
Stretching Functions Vertically: Study <i>35 minutes</i>	Learn about vertically stretching or compressing a function's graph by multiplying by a constant; flipping the graph by multiplying by a negative constant; and combining vertical stretches with vertical or horizontal shifts.
Practice Problems: Checkup <i>25 minutes</i>	Complete a set of practice problems to check your understanding of the lesson.
Stretching Functions Vertically: Mastery Test <i>20 minutes</i>	Take a quiz to check your understanding of what you have learned.
LESSON 6 Transformation of Parent Functions: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
Transformation of Parent Functions: Study <i>35 minutes</i>	Learn how to perform vertical shifts, horizontal shifts, vertical stretches and compressions, horizontal stretches and compressions, and any combination of these transformations on parent functions.
Practice Problems: Checkup <i>25 minutes</i>	Complete a set of practice problems to check your understanding of the lesson.
Transformation of Parent Functions: Mastery Test <i>20 minutes</i>	Take a quiz to check your understanding of what you have learned.
Practice: Transformations of Parent Functions <i>30 minutes</i>	Use the modeling tool to transform a function.
LESSON 7 Arithmetic of Functions: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.

Lesson and Duration	Description
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.
LESSON 8 Performance Task: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
Solving the Ball-Tossing Problem: Study <i>35 minutes</i>	Create an equation using data from a table, and graph the result.
Project: Performance Task: 3-D Printer Business <i>2 hours</i>	Create an equation using data from a table, and graph the result.
Transforming Functions: Checkup <i>25 minutes</i>	Submit your work for a set of 20 practice problems.
UNIT 3 WRAP-UP Transforming Functions: Review <i>20 minutes</i>	Get ready for the unit test by reviewing important ideas and skills.
Posttest: Transforming Functions <i>40 minutes</i>	Take a computer-scored test to check what you have learned in this unit.
Teacher-Graded Posttest: Transforming Functions <i>30 minutes</i>	Take a teacher-scored test to check what you have learned in this unit.

UNIT 4: POLYNOMIAL FUNCTIONS

Lesson and Duration	Description
Pretest: Polynomial Functions <i>40 minutes</i>	Complete the pretest (optional).
Polynomial Functions: Unit Overview <i>1 minute</i>	Read the unit overview.
LESSON 1 Polynomial Basics: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
Polynomial Basics: Study <i>35 minutes</i>	Learn that polynomials form a system analogous to the integers, namely, they are closed under the operations of addition, subtraction, and multiplication; add, subtract, and multiply polynomials.
Practice Problems: Checkup <i>25 minutes</i>	Check your understanding of the lesson.
Polynomial Basics: Mastery Test <i>20 minutes</i>	Take a quiz to check your understanding of what you have learned.
Practice: Multiplying Polynomials <i>30 minutes</i>	Use tiles to model the multiplication of binomials and solve a real-world problem.
LESSON 2 Polynomial Functions: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
Polynomial Functions: Study <i>35 minutes</i>	Learn to identify, classify, evaluate, and graph polynomial functions and expressions. Practice writing polynomials in descending order, as well as using the degree of a given polynomial function to predict the general shape of its graph.
Practice Problems: Checkup <i>25 minutes</i>	Complete a set of practice problems to check your understanding of the lesson.

Lesson and Duration	Description
Polynomial Functions: Mastery Test <i>20 minutes</i>	Take a quiz to check your understanding of what you have learned.
LESSON 3 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 4 Synthetic Division: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
Synthetic Division: Study <i>35 minutes</i>	Learn two methods for dividing polynomials — long division and synthetic division. Use synthetic division to expedite the process of finding factors and roots of polynomial expressions.
Practice Problems: Checkup <i>25 minutes</i>	Complete a set of practice problems to check your understanding of the lesson.
Synthetic Division: Mastery Test <i>20 minutes</i>	Take a quiz to check your understanding of what you have learned.
LESSON 5 Factoring Polynomials Completely: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.

Lesson and Duration	Description
Factoring Polynomials Completely: Study <i>35 minutes</i>	Learn about the remainder-factor theorem, rational-roots theorem, complex-conjugate theorem, and conjugate-radical theorem. Learn to use synthetic division to factor higher-order polynomials.
Practice Problems: Checkup <i>25 minutes</i>	Complete a set of practice problems to check your understanding of the lesson.
Factoring Polynomials Completely: Mastery Test <i>20 minutes</i>	Take a quiz to check your understanding of what you have learned.
LESSON 6 Solving Polynomial Equations: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
Solving Polynomial Equations: Study <i>35 minutes</i>	Find all solutions to polynomial equations.
Practice Problems: Checkup <i>25 minutes</i>	Complete a set of practice problems on solving polynomial equations.
Solving Polynomial Equations: Mastery Test <i>20 minutes</i>	Take a quiz to assess your understanding of the material.
LESSON 7 Graphing Polynomial Functions: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
Graphing Polynomial Functions: Study <i>35 minutes</i>	Learn to graph polynomial functions, identify zeros and write a polynomial function from its zeros.
Practice Problems: Checkup <i>25 minutes</i>	Check your understanding of the lesson.
Graphing Polynomial Functions: Mastery Test <i>20 minutes</i>	Take a quiz to check your understanding of what you have learned.

Lesson and Duration	Description
Journal: Designing a Mountain Landscape <i>30 minutes</i>	Discuss with a peer the process for using binomials to design a curved mountain landscape.
LESSON 8 Polynomial Identities: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
Polynomial Identities: Study <i>35 minutes</i>	Prove polynomial identities and use them to describe numerical relationships.
Practice Problems: Checkup <i>25 minutes</i>	Check your understanding of the lesson.
Polynomial Identities: Mastery Test <i>20 minutes</i>	Take a quiz to check your understanding of what you have learned.
LESSON 9 Binomial Theorem: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
Binomial Theorem: Study <i>35 minutes</i>	Learn and apply the binomial theorem.
Practice Problems: Checkup <i>25 minutes</i>	Check your understanding of the lesson.
Binomial Theorem: Mastery Test <i>20 minutes</i>	Take a quiz to check your understanding of what you have learned.
LESSON 10 Transformations of Polynomial Functions: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
Transformations of Polynomial Functions: Study <i>35 minutes</i>	Transform polynomial functions.
Practice Problems: Checkup <i>25 minutes</i>	Check your understanding of the lesson.

Lesson and Duration	Description
Transformations of Polynomial Functions: Mastery Test <i>20 minutes</i>	Take a quiz to check your understanding of what you have learned.
Polynomial Functions: Checkup <i>25 minutes</i>	Complete a set of practice problems to check your understanding of the lesson.
UNIT 4 WRAP-UP Polynomial Functions: Review <i>20 minutes</i>	Get ready for the unit test by reviewing important ideas and skills.
Posttest: Polynomial Functions <i>40 minutes</i>	Take a computer-scored test to check what you have learned in this unit.
Teacher-Graded Posttest: Polynomial Functions <i>30 minutes</i>	Take a teacher-scored test to check what you have learned in this unit.

UNIT 5: RATIONAL EXPRESSIONS AND FUNCTIONS

Lesson and Duration	Description
Pretest: Rational Expressions and Functions <i>40 minutes</i>	Complete the pretest (optional).
Rational Expressions and Functions: Unit Overview <i>1 minute</i>	Read the unit overview.
LESSON 1 Proportions: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
Proportions: Study <i>35 minutes</i>	Learn the definition of a rational expression and about using proportional reasoning to solve problems. Explore real-world examples of proportional reasoning.
Practice Problems: Checkup <i>25 minutes</i>	Complete a set of practice problems to check your understanding of the lesson.
Proportions: Mastery Test <i>20 minutes</i>	Take a quiz to check your understanding of what you have learned.

Lesson and Duration	Description
LESSON 2 Rational Expressions: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
Rational Expressions: Study <i>35 minutes</i>	Learn about finding the value of a rational expression and about undefined rational expressions.
Practice Problems: Checkup <i>25 minutes</i>	Complete a set of practice problems to check your understanding of the lesson.
Rational Expressions: Mastery Test <i>20 minutes</i>	Take a quiz to check your understanding of what you have learned.
LESSON 3 Simplifying Rational Expressions: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
Simplifying Rational Expressions: Study <i>35 minutes</i>	Practice finding and dividing out common factors in numerators and denominators of rational expressions. Explore the crucial difference between common factors and terms.
Practice Problems: Checkup <i>25 minutes</i>	Complete a set of practice problems to check your understanding of the lesson.
Simplifying Rational Expressions: Mastery Test <i>20 minutes</i>	Take a quiz to check your understanding of what you have learned.
LESSON 4 Multiplying and Dividing Rational Expressions: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
Multiplying and Dividing Rational Expressions: Study <i>35 minutes</i>	Review multiplying and dividing numerical fractions, multiplying rational expressions, dividing rational expressions, and simplifying the results.

Lesson and Duration	Description
Practice Problems: Checkup <i>25 minutes</i>	Complete a set of practice problems to check your understanding of the lesson.
Multiplying and Dividing Rational Expressions: Mastery Test <i>20 minutes</i>	Take a quiz to check your understanding of what you have learned.
LESSON 5 Adding and Subtracting Rational Expressions: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
Adding and Subtracting Rational Expressions: Study <i>35 minutes</i>	Review adding and subtracting numerical fractions, adding and subtracting rational expressions with like denominators, finding least common denominators, finding multiples of rational expressions, and adding and subtracting rational expressions with unlike denominators.
Practice Problems: Checkup <i>25 minutes</i>	Complete a set of practice problems to check your understanding of the lesson.
Adding and Subtracting Rational Expressions: Mastery Test <i>20 minutes</i>	Take a quiz to check your understanding of what you have learned.
LESSON 6 Inverse Variation: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
Inverse Variation: Study <i>35 minutes</i>	Review direct variation and how increasing input leads to proportionally increasing output. Review inverse variation and how increasing input leads to proportionally decreasing output. Review finding the constant of variation.
Practice Problems: Checkup <i>25 minutes</i>	Complete a set of practice problems to check your understanding of the lesson.
Inverse Variation: Mastery Test <i>20 minutes</i>	Take a quiz to check your understanding of what you have learned.

Lesson and Duration	Description
Practice: Finding the Constant in Inverse Variation <i>30 minutes</i>	Create a graph using a table of inverse variation data, and determine a constant value to create an approximate functional model.
LESSON 7 Solving Rational Functions: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
Solving Rational Functions: Study <i>35 minutes</i>	Learn the definition of a rational function and how to find the domain of a given function. Explore the horizontal and vertical asymptotes of rational functions.
Practice Problems: Checkup <i>25 minutes</i>	Complete a set of practice problems to check your understanding of the lesson.
Solving Rational Functions: Mastery Test <i>20 minutes</i>	Take a quiz to check your understanding of what you have learned.
LESSON 8 Vertical Asymptotes: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
Vertical Asymptotes: Study <i>35 minutes</i>	Learn about graphs of rational functions, about finding vertical asymptotes, and about graphing rational functions with more than one vertical asymptote.
Practice Problems: Checkup <i>25 minutes</i>	Complete a set of practice problems to check your understanding of the lesson.
Vertical Asymptotes: Mastery Test <i>20 minutes</i>	Take a quiz to check your understanding of what you have learned.
Journal: Rural Wireless Internet <i>30 minutes</i>	Formulate and evaluate an approach to increasing rural internet access, and discuss conclusions with a peer.
LESSON 9 Graphing Rational Functions: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.

Lesson and Duration	Description
Graphing Rational Functions: Study <i>35 minutes</i>	Learn about graphing rational functions with variables in the numerator, constructing a sign chart, and picking test numbers. Learn about rational functions with a singular point.
Practice Problems: Checkup <i>25 minutes</i>	Complete a set of practice problems to check your understanding of the lesson.
Graphing Rational Functions: Mastery Test <i>20 minutes</i>	Take a quiz to check your understanding of what you have learned.
Rational Expressions and Functions: Checkup <i>25 minutes</i>	Submit your work for a set of 20 practice problems.
UNIT 5 WRAP-UP Rational Expressions and Functions: Review <i>20 minutes</i>	Get ready for the unit test by reviewing important ideas and skills.
Posttest: Rational Expressions and Functions <i>40 minutes</i>	Take a computer-scored test to check what you have learned in this unit.
Teacher-Graded Posttest: Rational Expressions and Functions <i>30 minutes</i>	Take a teacher-scored test to check what you have learned in this unit.

SEMESTER WRAP-UP

Lesson and Duration	Description
Semester Review: Review <i>30 minutes</i>	Get ready for the semester exam by reviewing important ideas and skills.
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.