

MATHEMATICS III, SEMESTER B

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>	44	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	71	100%

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

UNIT 1: RADICAL EXPRESSIONS AND FUNCTIONS

Lesson and Duration	Description
Pretest: Radical Expressions and Functions 40 minutes	Complete the pretest (optional).
Radical Expressions and Functions: Unit Overview 1 minute	Read the unit overview.
LESSON 1 Basics of Radicals: Lesson Overview 5 minutes	Read the lesson objectives.
Basics of Radicals: Study 35 minutes	Learn the definition of radical expression. Explore simplifying the product and quotient of radicals and simplifying individual radicals.
Practice Problems: Checkup 25 minutes	Complete a set of practice problems to check your understanding of the lesson.
Basics of Radicals: Mastery Test 20 minutes	Take a quiz to check your understanding of what you have learned.

Lesson and Duration	Description
LESSON 2 Multiplying and Dividing Radicals: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
Multiplying and Dividing Radicals: Study <i>35 minutes</i>	Learn about multiplying and dividing radical expressions that include variables and about using the FOIL (first inner outer last) method to simplify radical expressions.
Practice Problems: Checkup <i>25 minutes</i>	Complete a set of practice problems to check your understanding of the lesson.
Multiplying and Dividing Radicals: Mastery Test <i>20 minutes</i>	Take a quiz to check your understanding of what you have learned.
LESSON 3 Adding and Subtracting Radicals: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
Adding and Subtracting Radicals: Study <i>35 minutes</i>	Learn about adding and subtracting radical expressions by combining like terms and about simplifying terms to get the same radicand.
Practice Problems: Checkup <i>25 minutes</i>	Complete a set of practice problems to check your understanding of the lesson.
Adding and Subtracting Radicals: Mastery Test <i>20 minutes</i>	Take a quiz to check your understanding of what you have learned.
LESSON 4 Rationalizing Denominators: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
Rationalizing Denominators: Study <i>35 minutes</i>	Learn about rationalizing a denominator in order to simplify a fraction with a radical expression in the denominator. Learn about multiplying by the conjugate of a denominator.

Lesson and Duration	Description
Practice Problems: Checkup <i>25 minutes</i>	Complete a set of practice problems to check your understanding of the lesson.
Rationalizing Denominators: Mastery Test <i>20 minutes</i>	Take a quiz to check your understanding of what you have learned.
Journal: Rationalizing Denominators <i>30 minutes</i>	Discuss rationalizing denominators with a peer.
LESSON 5 Solving Radical Functions: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
Solving Radical Functions: Study <i>35 minutes</i>	Learn how to solve equations with radical expressions by isolating the radical and squaring both sides.
Practice Problems: Checkup <i>25 minutes</i>	Complete a set of practice problems to check your understanding of the lesson.
Solving Radical Functions: Mastery Test <i>20 minutes</i>	Take a quiz to check your understanding of what you have learned.
LESSON 6 Applications of Radical Equations: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
Applications of Radical Equations: Study <i>35 minutes</i>	Explore case studies in order to practice methods of solving radical equations in applied settings.
Practice Problems: Checkup <i>25 minutes</i>	Check your understanding of the lesson.
Applications of Radical Equations: Mastery Test <i>20 minutes</i>	Take a quiz to check your understanding of what you have learned.
Practice: Pendulums and Bridges <i>30 minutes</i>	Create an equation to model pendulums and bridges.

Lesson and Duration	Description
LESSON 7 Rational Exponents: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
Rational Exponents: Study <i>35 minutes</i>	Learn about fractional exponents and n roots, odd and even indices of radicals, the method of notation for writing an n root, the use of fractional exponents, and exponential expressions with decimal powers.
Practice Problems: Checkup <i>25 minutes</i>	Complete a set of practice problems to check your understanding of the lesson.
Rational Exponents: Mastery Test <i>20 minutes</i>	Take a quiz to check your understanding of what you have learned.
LESSON 8 Review of Complex Numbers: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
Review of Complex Numbers: Study <i>35 minutes</i>	Learn about square roots of negative numbers; imaginary units; parts of a complex number; adding and subtracting complex numbers by collecting like terms and simplifying; multiplying two complex numbers using the FOIL method; and dividing complex numbers using complex conjugates.
Practice Problems: Checkup <i>25 minutes</i>	Complete a set of practice problems to check your understanding of the lesson.
Review of Complex Numbers: Mastery Test <i>20 minutes</i>	Take a quiz to check your understanding of what you have learned.
LESSON 9 Performance Task: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.

Lesson and Duration	Description
The Skid Distance Problem: Study <i>35 minutes</i>	Learn how the length of skid marks left by a vehicle is an application of square root functions. Use the skid distance equation to solve for drag factor of various road surfaces, as well as skid mark lengths and original speed of a variety of vehicles.
Project: Solving the Skid Distance Problem <i>2 hours</i>	Assume the role of investigator and take on a skid distance problem.
Radical Expressions and Functions: Checkup <i>25 minutes</i>	Submit your work for a set of 20 practice problems.
UNIT 1 WRAP-UP Radical Expressions and Functions: Review <i>20 minutes</i>	Get ready for the unit test by reviewing important ideas and skills.
Posttest: Radical Expressions and Functions <i>40 minutes</i>	Take a computer-scored test to check what you have learned in this unit.
Teacher-Graded Posttest: Radical Expressions and Functions <i>30 minutes</i>	Take a teacher-scored test to check what you have learned in this unit.

UNIT 2: EXPONENTIAL AND LOGARITHMIC FUNCTIONS

Lesson and Duration	Description
Pretest: Exponential and Logarithmic Functions <i>40 minutes</i>	Complete the pretest (optional).
Exponential and Logarithmic Functions: Unit Overview <i>1 minute</i>	Read the unit overview.
LESSON 1 Geometric Sequences: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.

Lesson and Duration	Description
Geometric Sequences: Study <i>35 minutes</i>	Learn about geometric sequences and series.
Practice Problems: Checkup <i>25 minutes</i>	Complete a set of practice problems on geometric sequences.
Geometric Sequences: Mastery Test <i>20 minutes</i>	Take a quiz to assess your understanding of the material.
Practice: Modeling: Viral Videos <i>30 minutes</i>	Model the growth of a viral video using geometric sequences.
LESSON 2 Exponential Functions: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
Exponential Functions: Study <i>35 minutes</i>	Define the standard form of an exponential function and explore a variety of its applications, such as exponential growth and decay (in the forms of doubling time and half-life), as well as compound interest. Compare compound interest to continuously compounded interest using the irrational number e .
Practice Problems: Checkup <i>25 minutes</i>	Complete a set of practice problems to 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.
LESSON 3 Examples and Applications of Exponential Functions: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
Examples and Applications of Exponential Functions: Study <i>35 minutes</i>	Explore case studies in exponential growth and decay and logarithmic growth.

Lesson and Duration	Description
Practice Problems: Checkup <i>25 minutes</i>	Check your understanding of the lesson.
Examples and Applications of Exponential Functions: Mastery Test <i>20 minutes</i>	Take a quiz to check your understanding of what you have learned.
LESSON 4 Graphs of Exponential Functions: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
Graphs of Exponential Functions: Study <i>35 minutes</i>	Learn about the shape of graphs of exponential functions with various bases and about finding the domain and range of exponential functions.
Practice Problems: Checkup <i>25 minutes</i>	Complete a set of practice problems to 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: Exponential vs. Quadratic <i>30 minutes</i>	Interpret a table of cell growth data, and discuss with a peer.
LESSON 5 Logarithmic Functions: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
Logarithmic Functions: Study <i>35 minutes</i>	Learn about undoing exponential functions, graphing the inverse of an exponential or logarithmic function, and using the common and natural logarithm.
Practice Problems: Checkup <i>25 minutes</i>	Complete a set of practice problems to check your understanding of the lesson.
Logarithmic Functions: Mastery Test <i>20 minutes</i>	Take a quiz to check your understanding of what you have learned.

Lesson and Duration	Description
LESSON 6 Graphs of Logarithmic Functions: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
Graphs of Logarithmic Functions: Study <i>35 minutes</i>	Learn about the shape of graphs of logarithmic functions with various bases and about the domain and range of logarithmic functions.
Practice Problems: Checkup <i>25 minutes</i>	Complete a set of practice problems to check your understanding of the lesson.
Graphs of Logarithmic Functions: Mastery Test <i>20 minutes</i>	Take a quiz to check your understanding of what you have learned.
LESSON 7 Properties of Exponents and Logarithms: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
Properties of Exponents and Logarithms: Study <i>35 minutes</i>	Learn about product, quotient, and power laws of exponents; rewriting the log of a product as the sum of two logs; rewriting the log of a quotient as the difference of two logs; simplifying the log of a power; and using the change-of-base formula to rewrite logarithms.
Practice Problems: Checkup <i>25 minutes</i>	Complete a set of practice problems to check your understanding of the lesson.
Properties of Exponents and Logarithms: Mastery Test <i>20 minutes</i>	Take a quiz to check your understanding of what you have learned.
LESSON 8 Solving Exponential Equations: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
Solving Exponential Equations: Study <i>35 minutes</i>	Learn about using ordinary algebra and the properties of logarithms to solve exponential equations. Answer questions inspired by the classic chessboard problem.

Lesson and Duration	Description
Practice Problems: Checkup <i>25 minutes</i>	Complete a set of practice problems to check your understanding of the lesson.
Solving Exponential Equations: Mastery Test <i>20 minutes</i>	Take a quiz to check your understanding of what you have learned.
LESSON 9 Solving Logarithmic Equations: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
Solving Logarithmic Equations: Study <i>35 minutes</i>	Learn about using ordinary algebra and the definition of a logarithm to solve logarithmic equations. Answer questions about energy in earthquakes.
Practice Problems: Checkup <i>25 minutes</i>	Complete a set of practice problems to check your understanding of the lesson.
Solving Logarithmic Equations: Mastery Test <i>20 minutes</i>	Take a quiz to check your understanding of what you have learned.
LESSON 10 Applications of Logarithms: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
Applications of Logarithms: Study <i>35 minutes</i>	Solve application problems involving exponential and logarithmic expressions.
Practice Problems: Checkup <i>25 minutes</i>	Complete a set of practice problems on applications of logarithms.
Applications of Logarithms: Mastery Test <i>20 minutes</i>	Take a quiz to check your understanding of what you have learned.
LESSON 11 Comparing and Analyzing Function Types: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.

Lesson and Duration	Description
Comparing and Analyzing Function Types: Study <i>35 minutes</i>	Apply transformations to a variety of function families.
Practice Problems: Checkup <i>25 minutes</i>	Check your understanding of the lesson.
Comparing and Analyzing Function Types: Mastery Test <i>20 minutes</i>	Take a quiz to check your understanding of what you have learned.
Exponential and Logarithmic Functions: Checkup <i>25 minutes</i>	Submit your work for a set of 20 practice problems.
UNIT 2 WRAP-UP Exponential and Logarithmic Functions: Review <i>20 minutes</i>	Get ready for the unit test by reviewing important ideas and skills.
Posttest: Exponential and Logarithmic Functions <i>40 minutes</i>	Take a computer-scored test to check what you have learned in this unit.
Teacher-Graded Posttest: Exponential and Logarithmic Functions <i>30 minutes</i>	Take a teacher-scored test to check what you have learned in this unit.

UNIT 3: RIGHT TRIANGLES AND TRIGONOMETRY

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

Lesson and Duration	Description
LESSON 1 The Pythagorean Theorem: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
The Pythagorean Theorem: Study <i>35 minutes</i>	Learn how the Pythagorean theorem applies only to right triangles and discover one proof of it. Learn about the converse of the Pythagorean theorem, Pythagorean triples, and applying the theorem to the problem of fitting a baseball bat into a rectangular trunk.
Practice Problems: Checkup <i>25 minutes</i>	Check your understanding of the lesson.
The Pythagorean Theorem: Mastery Test <i>20 minutes</i>	Take a quiz to check your understanding of what you have learned.
LESSON 2 Proving Congruence of Right Triangles: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
Proving Congruence of Right Triangles: Study <i>35 minutes</i>	Learn about the HL, LL, HA, LA, and perpendicular bisector theorems. Learn about the angle bisector theorem and its converse.
Practice Problems: Checkup <i>25 minutes</i>	Check your understanding of the lesson.
Proving Congruence of Right Triangles: Mastery Test <i>20 minutes</i>	Take a quiz to check your understanding of what you have learned.
LESSON 3 Similar Right Triangles: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.

Lesson and Duration	Description
Similar Right Triangles: Study 35 minutes	Explore the properties of similar right triangles. Prove that if an altitude is drawn from the right-angle vertex of a right triangle to its hypotenuse, then three similar triangles are formed. Calculate the missing sides of similar right triangles by using proportions and apply concepts learned to a miniature-golf problem.
Practice Problems: Checkup 25 minutes	Check your understanding of the lesson.
Similar Right Triangles: Mastery Test 20 minutes	Take a quiz to check your understanding of what you have learned.
LESSON 4 Special Right Triangles: Lesson Overview 5 minutes	Read the lesson objectives.
Special Right Triangles: Study 35 minutes	Explore 45-45-90 and 30-60-90 triangles as special cases of right triangles and learn how to apply the ratios of their side lengths.
Practice Problems: Checkup 25 minutes	Check your understanding of the lesson.
Special Right Triangles: Mastery Test 20 minutes	Take a quiz to check your understanding of what you have learned.
LESSON 5 Trigonometric Ratios: Lesson Overview 5 minutes	Read the lesson objectives.
Trigonometric Ratios: Study 35 minutes	Learn the definitions of <i>sine</i> , <i>cosine</i> , and <i>tangent</i> . Memorize the shortcut "soh-cah-toa" as a way to relate these ratios. Explore the use of trigonometric ratios in the solution of a real-world problem involving the construction of a cable car.
Practice Problems: Checkup 25 minutes	Check your understanding of the lesson.

Lesson and Duration	Description
Trigonometric Ratios: Mastery Test <i>20 minutes</i>	Take a quiz to check your understanding of what you have learned.
Practice: Modeling: Leaning Towers <i>30 minutes</i>	Use your knowledge of right triangles, trigonometric ratios, and the Pythagorean Theorem to model and solve a real-world problem.
LESSON 6 Area of a Triangle with Coordinate Geometry: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
Area of a Triangle with Coordinate Geometry: Study <i>35 minutes</i>	Learn about the area of a polygon, square units, and the triangle area formula and theorem.
Practice Problems: Checkup <i>25 minutes</i>	Check your understanding of the lesson.
Area of a Triangle with Coordinate Geometry: Mastery Test <i>20 minutes</i>	Take a quiz to check your understanding of what you have learned.
LESSON 7 Law of Cosines and Proofs: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
Law of Cosines and Proofs: Study <i>35 minutes</i>	Use the law of cosines to solve triangles.
Practice Problems: Checkup <i>25 minutes</i>	Complete a set of practice problems using the law of cosines.
Law of Cosines and Proofs: Mastery Test <i>20 minutes</i>	Take a quiz to assess your understanding of the material.

Lesson and Duration	Description
LESSON 8	
Law of Sines and Proofs: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
Law of Sines and Proofs: Study <i>35 minutes</i>	Use the law of sines to solve triangles and to explore the ambiguous case.
Practice Problems: Checkup <i>25 minutes</i>	Complete a set of practice problems using the law of sines.
Law of Sines and Proofs: Mastery Test <i>20 minutes</i>	Take a quiz to assess your understanding of the material.
Journal: Law of Sines and Proofs <i>30 minutes</i>	Use what you know about triangles and trigonometric ratios to prove the law of sines.
Right Triangles and Trigonometry: Checkup <i>25 minutes</i>	Check your understanding of the topics in this unit.
UNIT 3 WRAP-UP	
Right Triangles and Trigonometry: Review <i>30 minutes</i>	Get ready for the unit test by reviewing important ideas and skills.
Posttest: Right Triangles and Trigonometry <i>40 minutes</i>	Take a computer-scored test to check what you have learned in this unit.
Teacher-Graded Posttest: Right Triangles and Trigonometry <i>30 minutes</i>	Take a teacher-scored test to assess what you have learned in this unit.

UNIT 4: TRIGONOMETRY

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

Lesson and Duration	Description
LESSON 1 Right Triangle Trigonometry: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
Right Triangle Trigonometry: Study <i>35 minutes</i>	Review right triangles and get an introduction to trigonometric ratios.
Practice Problems: Checkup <i>25 minutes</i>	Complete a set of practice problems on trigonometry.
Right Triangle Trigonometry: Mastery Test <i>20 minutes</i>	Take a quiz to assess your understanding of the material.
LESSON 2 Angles and Radians: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
Angles and Radians: Study <i>35 minutes</i>	Learn about angles expressed in degrees and radians.
Practice Problems: Checkup <i>25 minutes</i>	Complete a set of practice problems on angles and radians.
Angles and Radians: Mastery Test <i>20 minutes</i>	Take a quiz to assess your understanding of the material.
LESSON 3 Trigonometric Ratios and the Unit Circle: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
Trigonometric Ratios and the Unit Circle: Study <i>35 minutes</i>	Learn the six trigonometric ratios and how the unit circle defines them.
Pythagorean Theorem: Study <i>35 minutes</i>	Review the Pythagorean theorem.

Lesson and Duration	Description
Practice Problems: Checkup <i>25 minutes</i>	Complete a set of practice problems on trigonometric functions and the unit circle.
Trigonometric Functions and the Unit Circle: Mastery Test <i>20 minutes</i>	Take a quiz to assess your understanding of the material.
Journal: A Better Way? <i>30 minutes</i>	Discuss a trigonometric “shortcut”, and explain when it will and will not work.
LESSON 4 Graphs of Sine and Cosine: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
Graphs of Sine and Cosine: Study <i>35 minutes</i>	Learn to build the graphs of sine and cosine.
Practice Problems: Checkup <i>25 minutes</i>	Complete a set of practice problems on graphs of sine and cosine.
Graphs of Sine and Cosine: Mastery Test <i>20 minutes</i>	Take a quiz to assess your understanding of the material.
LESSON 5 Graphs of Other Functions: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
Graphs of Other Functions: Study <i>35 minutes</i>	Learn the graphs of the other four trigonometric functions.
Practice Problems: Checkup <i>25 minutes</i>	Complete a set of practice problems on graphs of other functions.
Graphs of Other Functions: Mastery Test <i>20 minutes</i>	Take a quiz to assess your understanding of the material.
LESSON 6 Simple Transformations of Sinusoids: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.

Lesson and Duration	Description
Simple Transformations of Sinusoids: Study <i>35 minutes</i>	Learn how to transform trigonometric graphs with reflections, shifts, and stretches.
Practice Problems: Checkup <i>25 minutes</i>	Complete a set of practice problems on transformations of periodic graphs.
Simple Transformations of Sinusoids: Mastery Test <i>20 minutes</i>	Take a quiz to assess your understanding of the material.
LESSON 7 General Transformations of Periodic Graphs: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
General Transformations of Periodic Graphs: Study <i>35 minutes</i>	Learn how to transform trigonometric graphs with reflections, shifts, and stretches.
Practice Problems: Checkup <i>25 minutes</i>	Complete a set of practice problems on transformations of trigonometric functions.
General Transformations of Periodic Graphs: Mastery Test <i>20 minutes</i>	Take a quiz to assess your understanding of the material.
Practice: Modeling: Riding the Circular Wave <i>30 minutes</i>	Model real world data using a periodic function.
LESSON 8 Identities and Proof: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
Identities and Proof: Study <i>35 minutes</i>	Learn how to prove identities.
Practice Problems: Checkup <i>25 minutes</i>	Complete a set of practice problems on identities and proof.

Lesson and Duration	Description
Identities and Proof: Mastery Test <i>20 minutes</i>	Take a quiz to assess your understanding of the material.
LESSON 9 Trigonometric Identities: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
Trigonometric Identities: Study <i>35 minutes</i>	Learn the key trigonometric identities.
Lessons Learned: Checkup <i>25 minutes</i>	Complete a set of practice problems on trigonometric identities.
Trigonometric Identities: Mastery Test <i>20 minutes</i>	Take a quiz to assess your understanding of the material.
Trigonometry: Checkup <i>25 minutes</i>	Check your understanding of the unit.
UNIT 4 WRAP-UP Trigonometry: Review <i>20 minutes</i>	Get ready for the unit test by reviewing important ideas and skills.
Posttest: Trigonometry <i>40 minutes</i>	Take a computer-scored test to check what you have learned in this unit.
Teacher-Graded Posttest: Trigonometry <i>30 minutes</i>	Take a teacher-scored test to check what you have learned in this unit.

UNIT 5: THREE-DIMENSIONAL SOLIDS

Lesson and Duration	Description
Pretest: Three-Dimensional Solids <i>40 minutes</i>	Complete the pretest (optional).

Lesson and Duration	Description
Three-Dimensional Solids: Unit Overview <i>1 minute</i>	Read the unit overview.
LESSON 1 Three Dimensions: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
Three Dimensions: Study <i>35 minutes</i>	Learn about measuring three-dimensional figures.
Three Dimensions: Mastery Test <i>20 minutes</i>	Take a quiz to check your understanding of what you have learned.
LESSON 2 What Is a Polyhedron?: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
What Is a Polyhedron?: Study <i>35 minutes</i>	Learn about the definition and elements of a polyhedron, prisms and their components, triangular and rectangular prisms, cubes, and regular and irregular pyramids.
What Is a Polyhedron?: Mastery Test <i>20 minutes</i>	Take a quiz to check your understanding of what you have learned.
LESSON 3 Cylinders and Cones: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
Cylinders and Cones: Study <i>35 minutes</i>	Learn about the definition, components, and properties of a cylinder; the definition and components of a cone; and the similarities between cones and pyramids.
Cylinders and Cones: Mastery Test <i>20 minutes</i>	Take a quiz to check your understanding of what you have learned.

Lesson and Duration	Description
LESSON 4	
Platonic Solids: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
Platonic Solids: Study <i>35 minutes</i>	Learn about polygonal numbers, regularity of Platonic solids, and building your own Platonic solids.
Platonic Solids: Mastery Test <i>20 minutes</i>	Take a quiz to check your understanding of what you have learned.
Practice: Modeling: Solids <i>30 minutes</i>	Practice with a real-world solid modeling application.
LESSON 5	
Surface Area: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
Surface Area: Study <i>35 minutes</i>	Learn about perimeter and surface area; base and lateral area; slant height versus altitude; and the formulas for surface area of a right prism, an oblique prism, a regular pyramid, an oblique cylinder, a right cone, and an oblique cone. Explore sample problems dealing with these subjects.
Practice Problems: Checkup <i>25 minutes</i>	Check your understanding of the lesson.
Surface Area: Mastery Test <i>20 minutes</i>	Take a quiz to check your understanding of what you have learned.
LESSON 6	
Volume: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
Volume: Study <i>35 minutes</i>	Learn about area and volume, the formulas for volume of a cube and a rectangular prism, and Bonaventura Francesco Cavalieri's principle. Learn about the formulas for volume of a cylinder, a pyramid, and a cone; explore sample problems dealing with these formulas. Learn about cross-sectional area.
Practice Problems: Checkup <i>25 minutes</i>	Check your understanding of the lesson.

Lesson and Duration	Description
Volume: Mastery Test <i>20 minutes</i>	Take a quiz to check your understanding of what you have learned.
Journal: Volume <i>30 minutes</i>	Think about and discuss how changing one dimension of a given shape changes its volume and surface area.
LESSON 7 Spheres: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
Spheres: Study <i>35 minutes</i>	Learn about the definition of a sphere; the formulas for surface area and volume of a sphere; comparing the surface area and volume of a sphere, cube, cylinder, and cone; and using Cavalieri's principle to derive the formula for volume of a sphere.
Practice Problems: Checkup <i>25 minutes</i>	Check your understanding of the lesson.
Spheres: Mastery Test <i>20 minutes</i>	Take a quiz to check your understanding of what you have learned.
LESSON 8 Similar Solids: Lesson Overview <i>5 minutes</i>	Read the lesson objectives.
Similar Solids: Study <i>35 minutes</i>	Learn about similar prisms, pyramids, cylinders, cones, and spheres; the constant ratio between corresponding parts of similar solids; and the ratio of volumes of similar solids.
Practice Problems: Checkup <i>25 minutes</i>	Check your understanding of the lesson.
Similar Solids: Mastery Test <i>20 minutes</i>	Take a quiz to check your understanding of what you have learned.
Three-Dimensional Solids: Checkup <i>25 minutes</i>	Check your understanding of the topics in this unit.

Lesson and Duration	Description
UNIT 5 WRAP-UP	
Three-Dimensional Solids: Review <i>30 minutes</i>	Get ready for the unit test by reviewing important ideas and skills.
Posttest: Three-Dimensional Solids <i>40 minutes</i>	Take a computer-scored test to check what you have learned in this unit.
Teacher-Graded Posttest: Three-Dimensional Solids <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>20 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.