

Introductory Algebra provides a curriculum focused on foundational concepts that prepare students for success in Algebra I. Through a "Discovery-Confirmation-Practice"-based exploration of basic concepts, students are challenged to work toward a mastery of computational skills, to deepen their understanding of key ideas and solution strategies, and to extend their knowledge through a variety of problem-solving applications.

Course topics include integers; the language of algebra; solving equations with addition, subtraction, multiplication, and division; fractions and decimals; measurement; exponents; solving equations with roots and powers; multi-step equations; and linear equations.

Within each Introductory Algebra lesson, students are supplied with a scaffolded note-taking guide, called a Study Sheet, as well as a post-study Checkup activity that provides them the opportunity to hone their computational skills by working through a low-stakes, 10-question problem set before starting formal assessment. Unit-level Introductory Algebra assessments include a computer-scored test and a scaffolded, teacher-scored test.

The course is built to state standards and informed by the National Council of Teachers of Mathematics (NCTM).

Length: Two semesters

UNIT 1: INTEGERS

LESSON 1: WHOLE NUMBERS

Study: Whole Numbers

Learn about aspects of whole numbers, including place value, natural numbers, sets, elements, and set notation. Duration: 0 hrs 40 mins Scoring: 0 points

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 30 mins

Quiz: Whole Numbers

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 16 points

LESSON 2: NUMBER LINES AND INEQUALITIES

Study: Number Lines and Inequalities

Define and use a number line. Represent relationships between numbers with inequality symbols.

Duration: 0 hrs 40 mins

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 20 mins

Quiz: Number Lines and Inequalities

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 16 points

LESSON 3: ROUNDING WHOLE NUMBERS

Study: Rounding Whole Numbers

Explore rounding and estimating numbers with and without a number line.

Duration: 0 hrs 40 mins

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 20 mins

Quiz: Rounding with a Number Line

Take a guiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 22 points

Quiz: Rounding without a Number Line

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 16 points

LESSON 4: OPERATIONS AND NUMERICAL EXPRESSIONS

Study: Operations and Numerical Expressions

Learn about forming and evaluating numerical expressions, the order of operations, and grouping symbols.

Duration: 0 hrs 40 mins

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 20 mins

Quiz: Operations and Numerical Expressions

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 20 points

LESSON 5: PROPERTIES OF OPERATIONS

Study: Properties of Operations

Learn about the associative, commutative, and distributive properties of addition and multiplication.

Duration: 0 hrs 40 mins

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 20 mins

Quiz: The Associative Property

Take a guiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 18 points

Quiz: The Commutative and Distributive Properties

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 18 points

LESSON 6: THE OPERATIONS ON A NUMBER LINE

Study: The Operations on a Number Line

Explore using a number line to evaluate numerical expressions.

Duration: 0 hrs 40 mins

LESSON 7: REVERSE OPERATIONS

Study: Reverse Operations

Learn about addition, subtraction, multiplication, and division as reverse operations.

Duration: 0 hrs 40 mins

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 20 mins

Quiz: Reverse Operations

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 20 points

LESSON 8: NEGATIVE NUMBERS

Study: Negative Numbers

Learn about positive, negative, and opposite numbers, as well as integers and signs.

Duration: 0 hrs 40 mins

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 20 mins

Quiz: Negative Numbers

Take a guiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 18 points

LESSON 9: ABSOLUTE VALUE

Study: Absolute Value

Learn about the absolute value of integers, the definition symbol, and the absolute value of expressions.

Duration: 0 hrs 40 mins

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 20 mins

Quiz: Absolute Value

Take a guiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 20 points

LESSON 10: ADDING INT EGERS

Study: Adding Integers

Learn about adding integers with and without a number line.

Duration: 0 hrs 40 mins

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 20 mins

Quiz: Adding Integers (Basic)

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 20 points

Quiz: Adding Integers (Advanced)

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 18 points

LESSON 11: SUBTRACTING INTEGERS

Study: Subtracting Integers

Learn about subtracting negative integers by using a number line and by adding the opposite number (calculating).

Duration: 0 hrs 40 mins

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 20 mins

Quiz: Subtracting Integers

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 20 points

LESSON 12: MULT IPLYING INT EGERS

Study: Multiplying Integers

Learn the rules for multiplying a positive and negative integer and for multiplying two negative integers.

Duration: 0 hrs 40 mins

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 20 mins

Quiz: Multiplying Integers

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 20 points

LESSON 13: DIVIDING INT EGERS

Study: Dividing Integers

Learn the rules for dividing a positive and negative integer and for dividing two negative integers.

Duration: 0 hrs 40 mins

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 20 mins

Quiz: Dividing Integers

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 20 points

LESSON 14: WRAP-UP

Practice: Assignment

Submit your work for a set of 20 practice problems.

Duration: 0 hrs 40 mins Scoring: 20 points

Review: Review Exercises

Take part in interactive games to review unit material in preparation for upcoming assessments.

Duration: 0 hrs 30 mins

Discuss: Consistency is Key

Take part in a three- to five-question discussion about applying methods learned in this unit.

Duration: 0 hrs 20 mins Scoring: 30 points

Test (CS): Integers

Take a computer-scored test to assess what you have learned in this unit.

Duration: 0 hrs 40 mins Scoring: 75 points

Test (TS): Integers

Take a teacher-scored test to assess what you have learned in this unit.

Duration: 0 hrs 30 mins Scoring: 50 points

UNIT 2: THE LANGUAGE OF ALGEBRA

LESSON 1: WHAT IS A VARIABLE?

Study: What is a Variable?

Learn the definition and explore examples of variables.

Duration: 0 hrs 40 mins

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 20 mins

Quiz: What is a Variable?

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 16 points

LESSON 2: FINDING AND NAMING VARIABLES

Study: Finding and Naming Variables

Select relevant variables and name them.

Duration: 0 hrs 40 mins

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 20 mins

Quiz: Finding and Naming Variables

Take a guiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 16 points

LESSON 3: UNITS AND REASONABLE VALUES

Study: Units and Reasonable Values

Learn to recognize units of measure and determine reasonable values.

Duration: 0 hrs 40 mins

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 20 mins

Quiz: Units and Reasonable Values

Take a guiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 16 points

LESSON 4: GRAPHS TABLES AND EQUATIONS

Study: Graphs, Tables, and Equations

Find the value of a variable using graphs, tables, and equations. Learn to organize information and find patterns. Explore examples and advantages of each problem-solving method.

Duration: 0 hrs 40 mins

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 20 mins

Quiz: Graphs, Tables, and Equations

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 16 points

LESSON 5: SOLVING PROBLEMS WITH TABLES AND GRAPHS

Study: Solving Problems with Tables and Graphs

Set up tables and graphs and use them to organize information. Determine when to use tables and graphs to solve problems.

Duration: 0 hrs 40 mins

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 20 mins

Quiz: Solving Problems with Tables and Graphs

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 16 points

LESSON 6: VARIABLE EXPRESSIONS

Study: Variable Expressions

Define and form variable expressions by performing operations.

Duration: 0 hrs 40 mins

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 20 mins

Quiz: Variable Expressions

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 18 points

LESSON 7: SIMPLIFYING AND EVALUATING EXPRESSIONS

Study: Simplifying and Evaluating Expressions

Simplify variable expressions by evaluating their numerical parts. Evaluate variable expressions by substituting values for

Duration: 0 hrs 40 mins

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 20 mins

Quiz: Simplifying and Evaluating Expressions

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 14 points

LESSON 8: MATHEMATICAL SENTENCES

Study: Mathematical Sentences

Learn about the types and parts of mathematical sentences. Learn about translating word problems into mathematical sentences.

Duration: 0 hrs 40 mins

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 20 mins

Quiz: Mathematical Sentences

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 20 points

LESSON 9: SOLVING MATHEMATICAL SENTENCES

Study: Solving Mathematical Sentences

Solve equations using the "guess-and-check" method. Define a solution set and compare solution sets of equations and inequalities.

Duration: 0 hrs 40 mins

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 20 mins

Quiz: Solving Mathematical Sentences

Take a guiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 16 points

LESSON 10: SOME GUIDELINES FOR PROBLEM SOLVING

Study: Some Guidelines for Problem Solving

Use problem-solving tips to solve a problem. Develop a general strategy for solving problems.

Duration: 0 hrs 40 mins

Quiz: Some Guidelines for Problem Solving

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 16 points

LESSON 11: WRAP-UP

Practice: Assignment

Submit your work for a set of 20 practice problems.

Duration: 0 hrs 40 mins Scoring: 20 points

Review: Review Exercise

Take part in interactive games to review unit material in preparation for upcoming assessments.

Duration: 0 hrs 30 mins

Discuss: Using X to Mark the Spot

Take part in a three- to five-question discussion about applying methods learned in this unit.

Duration: 0 hrs 20 mins Scoring: 30 points

Test (CS): The Language of Algebra

Take a computer-scored test to assess what you have learned in this unit.

Duration: 0 hrs 40 mins Scoring: 75 points

Test (TS): The Language of Algebra

Take a teacher-scored test to assess what you have learned in this unit.

Duration: 0 hrs 30 mins Scoring: 50 points

UNIT 3: SOLVING EQUATIONS WITH ADDITION AND SUBTRACTION

LESSON 1: SOLVING EQUATIONS GRAPHICALLY

Study: Solving Equations Graphically

Begin solving basic equations using an interactive scale tool. Discover problem-solving strategies such as isolating a variable in an equation and using tiles on a scale to represent values in word problems.

Duration: 0 hrs 40 mins

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 20 mins

Quiz: Solving Equations Graphically

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 18 points

LESSON 2: SOLVING EQUATIONS WITH LARGER NUMBERS

Study: Solving Equations with Larger Numbers

Translate a word problem involving large numbers into a mathematical sentence (or equation) and use an interactive scale tool to solve for the variable.

Duration: 0 hrs 40 mins

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 20 mins

Quiz: Solving Equations with Larger Numbers

Take a guiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 18 points

LESSON 3: SOLVING X + A = B

Study: Solving x + a = b

Practice solving equations in the form x + a = b by isolating the variable x on one side of the equation. Learn how to solve this type of equation when the value of a is positive or negative.

Duration: 0 hrs 40 mins

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Quiz: Solving x + a = b

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 20 points

Quiz: Solving x - a = b

Take a guiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 12 points

LESSON 4: SOLVING WITH A NUMBER LINE

Study: Solving with a Number Line

Plot points on a number line, moving to the left or right to solve equations.

Duration: 0 hrs 40 mins

LESSON 5: SOLVING INEQUALITIES

Study: Solving Inequalities

Develop strategies to solve various forms of inequalities and display their solution set on a number line.

Duration: 0 hrs 40 mins

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 20 mins

Quiz: Solving Inequalities

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 16 points

LESSON 6: VARIATIONS OF EQUATIONS AND INEQUALITIES

Study: Variations of Equations and Inequalities

Explore problems that take different forms, rearranging equations into x + a = b form (standard form) and solving inequalities in nonstandard form.

Duration: 0 hrs 40 mins

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 20 mins

Quiz: Equations in Non-Standard Form

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 20 points

Quiz: Inequalities in Non-Standard Form

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 20 points

LESSON 7: DENSITY

Study: Density

Learn about Archimedes' problem, the definition of density, and the density formula.

Duration: 0 hrs 40 mins

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 20 mins

Quiz: Density

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 16 points

LESSON 8: THE KING'S CROWN PROBLEM

Study: The King's Crown Problem

Learn how to choose a strategy in order to solve a problem and how to determine what you know and what you need to find out. Explore using displacement to determine volume.

Duration: 0 hrs 40 mins

LESSON 9: WRAP-UP

Practice: Assignment

Submit your work for a set of 20 practice problems.

Duration: 0 hrs 40 mins Scoring: 20 points

Review: Review Exercise

Take part in interactive games to review unit material in preparation for upcoming assessments.

Duration: 0 hrs 30 mins

Discuss: Math -- The Ultimate Balancing Act

Take part in a three- to five-question discussion about applying methods learned in this unit.

Duration: 0 hrs 20 mins Scoring: 30 points

Test (CS): Solving Equations with Addition and Subtraction

Take a computer-scored test to assess what you have learned in this unit.

Duration: 0 hrs 40 mins Scoring: 75 points

Test (TS): Solving Equations with Addition and Subtraction

Take a teacher-scored test to assess what you have learned in this unit.

Duration: 0 hrs 30 mins Scoring: 50 points

UNIT 4: FRACTIONS AND DECIMALS

LESSON 1: FRACTION FUNDAMENTALS

Study: Fraction Fundamentals

Learn about fractions, numerators, denominators, and equivalent fractions.

Duration: 0 hrs 40 mins

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 20 mins

Quiz: Fractional Amounts

Take a guiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 16 points

Quiz: Equivalent Fractions

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 16 points

LESSON 2: INTRODUCTION TO FRACTION ARITHMETIC

Study: Introduction to Fraction Arithmetic

Learn about adding and subtracting fractions with like denominators, multiplying a fraction by an integer, and multiplying fractions.

Duration: 0 hrs 40 mins

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 20 mins

Quiz: Adding and Subtracting Like Fractions

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 20 points

Quiz: Multiplying Fractions

Take a guiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 20 points

LESSON 3: EQUIVALENT FRACTIONS

Study: Equivalent Fractions

Learn about building equivalent fractions in order to add and subtract fractions with unlike denominators. Learn about comparing equivalent fractions.

Duration: 0 hrs 40 mins

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 20 mins

Quiz: Adding and Subtracting Unlike Fractions

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 18 points

Quiz: Comparing Unlike Fractions

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 16 points

LESSON 4: SIMPLIFYING FRACTIONS

Study: Simplifying Fractions

Learn about finding common factors; dividing numerators and denominators by a common factor in order to simplify a fraction; putting a fraction in lowest terms; prime and composite numbers; and using a factor tree to find prime factorization.

Duration: 0 hrs 40 mins

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 20 mins

Quiz: Finding Common Denominators

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 16 points

Quiz: Dividing by Common Factors

Take a guiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 16 points

Quiz: Simplifying Fractions

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 16 points

Quiz: Prime and Composite Numbers

Take a guiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 16 points

Quiz: Prime Factorization

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 16 points

LESSON 5: MIXED NUMBERS

Study: Mixed Numbers

Learn about proper and improper fractions, writing improper fractions as mixed numbers, and converting mixed numbers to improper fractions.

Duration: 0 hrs 40 mins

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 20 mins

Quiz: Converting Improper Fractions

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 16 points

Quiz: Converting Mixed Numbers

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 16 points

LESSON 6: DIVIDING FRACTIONS

Study: Dividing Fractions

Learn the definition of reciprocals. Learn about finding reciprocals of fractions in order to divide them.

Duration: 0 hrs 40 mins

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 20 mins

Quiz: Finding Reciprocals

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 16 points

Quiz: Dividing Fractions

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 16 points

LESSON 7: ADDING AND SUBTRACTING FRACTIONS

Study: Adding and Subtracting Fractions

Learn about the smallest common denominator (the least common multiple of denominators) and about using prime factorization to find the least common multiple.

Duration: 0 hrs 40 mins

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 20 mins

Quiz: Adding and Subtracting Unlike Fractions

Take a guiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 16 points

Quiz: Solving Equations with Fractions

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 16 points

LESSON 8: DECIMALS AND PERCENTS

Study: Decimals and Percents

Learn about place value in integers and decimals, terminating and repeating decimals, finding decimal equivalents of fractions, and converting decimals to percents. Explore real-world examples of how to use percentages.

Duration: 0 hrs 40 mins

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 20 mins

Quiz: Converting Fractions to Decimals

Take a quiz to assess your understanding of the material.

Quiz: Converting Percents to Decimals

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 16 points

LESSON 9: THE SET OF RATIONAL NUMBERS

Study: The Set of Rational Numbers

Learn about rational and irrational numbers and pi.

Duration: 0 hrs 40 mins

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 20 mins

Quiz: Rational Numbers

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 16 points

LESSON 10: WRAP-UP

Practice: Assignment

Submit your work for a set of 20 practice problems.

Duration: 0 hrs 40 mins Scoring: 20 points

Review: Review Exercises

Take part in interactive games to review unit material in preparation for upcoming assessments.

Duration: 0 hrs 30 mins

Discuss: Pieces of a Whole

Take part in a three- to five-question discussion about applying methods learned in this unit.

Duration: 0 hrs 20 mins Scoring: 30 points

Test (CS): Fractions and Decimals

Take a computer-scored test to assess what you have learned in this unit.

Duration: 0 hrs 40 mins Scoring: 75 points

Test (TS): Fractions and Decimals

Take a teacher-scored test to assess what you have learned in this unit.

Duration: 0 hrs 30 mins Scoring: 50 points

UNIT 5: MEASUREMENT

LESSON 1: METRIC AND CUSTOMARY UNITS

Study: Metric and Customary Units

Explore the history of measurement in the forms of the metric system and the British/U.S. System of Units. Create derived units from more basic components, such as "kilometers per hour."

Duration: 0 hrs 40 mins

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 20 mins

Quiz: Customary Units

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 16 points

Quiz: Metric System

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 16 points

LESSON 2: CONVERTING UNITS

Study: Converting Units

Learn about converting between units from different systems, multiplication by one, and canceling units.

Duration: 0 hrs 40 mins

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 20 mins

Quiz: Canceling Units

Take a guiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 30 points

Quiz: Converting Units

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 30 points

LESSON 3: ESTIMATION AND SCALE

Study: Estimation and Scale

Learn about scale of numbers, order of magnitude, powers of 10, estimating large numbers, and Fermi problems.

Duration: 0 hrs 40 mins

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 20 mins

Quiz: Estimation and Scale

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 30 points

LESSON 4: PRECISION IN MEASUREMENT

Study: Precision in Measurement

Learn about precision, accuracy, significant figures, multiplication, and addition.

Duration: 0 hrs 40 mins

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 20 mins

Quiz: Precision and Accuracy

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 30 points

Quiz: Significant Figures

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 30 points

LESSON 5: APPLICATIONS OF MEASUREMENT

Study: Applications of Measurement

Learn about applications of units, unit conversions, estimation and scale, order of magnitude, precision, accuracy, and significant figures.

Duration: 0 hrs 40 mins

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 20 mins

Quiz: Applications of Measurement

Take a quiz to assess your understanding of the material.

LESSON 6: WRAP-UP

Practice: Assignment

Submit your work for a set of 20 practice problems.

Duration: 0 hrs 40 mins Scoring: 20 points

Review: Review Exercises

Take part in interactive games to review unit material in preparation for upcoming assessments.

Duration: 0 hrs 30 mins

Discuss: To Convert or Not to Convert ...

Take part in a three- to five-question discussion about applying methods learned in this unit.

Duration: 0 hrs 20 mins Scoring: 30 points

Test (CS): Measurement

Take a computer-scored test to assess what you have learned in this unit.

Duration: 0 hrs 40 mins Scoring: 75 points

Test (TS): Measurement

Take a teacher-scored test to assess what you have learned in this unit.

Duration: 0 hrs 30 mins Scoring: 50 points

UNIT 6: SEMESTER 1 REVIEW AND EXAM

LESSON 1: PREPARING FOR THE SEMESTER EXAM

Review: Semester Review

Prepare for the semester exam by reviewing key concepts covered in this semester.

Duration: 1 hr

Exam: Semester Exam

Take a computer-scored exam to demonstrate your mastery of concepts and skills covered in this semester.

Duration: 0 hrs 50 mins Scoring: 250 points

UNIT 7: SOLVING EQUATIONS WITH MULTIPLICATION AND DIVISION

LESSON 1: SOLVING AX = B

Study: Solving ax = b

Learn about setting up a table; writing an equation to express a pattern; isolating a variable; dividing by the coefficient of a variable; and using a number line to solve equations in standard form.

Duration: 0 hrs 50 mins

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 30 mins

Quiz: Solving ax = b

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 30 points

LESSON 2: THE LIGHT NING PROBLEM

Study: The Lightning Problem

Apply the rate formula for distance to determine how far away a thunder storm is based on the time delay between seeing lightning and hearing thunder.

Duration: 0 hrs 50 mins

LESSON 3: SOLVING X/A = B

Study: Solving x/a = b

Learn about solving division problems using multiplication.

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 30 mins

Quiz: Solving x/a = b

Take a guiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 30 points

LESSON 4: INEQUALITIES

Study: Inequalities

Learn about solving inequalities by dividing by the coefficient of a variable. Learn about multiplying and dividing inequalities by negative numbers.

Duration: 0 hrs 50 mins

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 30 mins

Quiz: Solving Inequalities with Division

Take a guiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 30 points

Quiz: Solving Inequalities with Multiplication

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 18 points

LESSON 5: WRAP-UP

Practice: Assignment

Submit your work for a set of 20 practice problems.

Duration: 1 hr Scoring: 20 points

Review: Review Exercise

Take part in interactive games to review unit material in preparation for upcoming assessments.

Duration: 1 hr

Discuss: Looking Back in Time

Take part in a three- to five-question discussion about applying methods learned in this unit.

Duration: 0 hrs 20 mins Scoring: 30 points

Test (CS): Solving Equations with Multiplication and Division

Take a computer-scored test to assess what you have learned in this unit.

Duration: 0 hrs 40 mins Scoring: 75 points

Test (TS): Solving Equations with Multiplication and Division

Take a teacher-scored test to assess what you have learned in this unit.

Duration: 0 hrs 30 mins Scoring: 50 points

UNIT 8: EXPONENTS

LESSON 1: DEFINITIONS AND EXAMPLES OF EXPONENTS

Study: Definitions and Examples of Exponents

Learn the definitions of base, exponent, power, and exponential expression. Learn to use a table to illustrate real-world applications of exponents.

Duration: 0 hrs 50 mins

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Quiz: Definitions and Examples of Exponents

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 30 points

LESSON 2: EXPONENTS AND THE ORDER OF OPERATIONS

Study: Exponents and the Order of Operations

Learn about evaluating expressions with exponents using the order of operations.

Duration: 0 hrs 50 mins

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 30 mins

Quiz: Exponents and the Order of Operations

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 30 points

LESSON 3: LAWS OF EXPONENTS

Study: Laws of Exponents

Learn about the multiplication law of exponents with positive and negative exponents; the rule for negative exponents; the division law of exponents; raising products and fractions to a power; and the power rule of exponents.

Duration: 0 hrs 50 mins

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 30 mins

Quiz: The Multiplication Law of Exponents

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 26 points

Quiz: Zero and Negative Exponents

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 28 points

Quiz: The Division Law of Exponents

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 24 points

Quiz: Raising Products and Fractions to a Power

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 26 points

Quiz: The Power Rule of Exponents

Take a guiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 12 points

LESSON 4: SCIENT IFIC NOTATION

Study: Scientific Notation

Learn about expressing large numbers using scientific notation and about the form of scientific notation. Explore examples from elementary science.

Duration: 0 hrs 50 mins

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 30 mins

Quiz: Scientific Notation

Take a guiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 30 points

LESSON 5: EXPONENTS IN GEOMETRY

Study: Exponents in Geometry

Learn about using exponents to represent area and volume formulae. Explore units of area and volume.

Duration: 0 hrs 50 mins

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 30 mins

Quiz: Exponents in Geometry

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 30 points

LESSON 6: SQUARE ROOTS

Study: Square Roots

Learn about fractional exponents; principal square roots; square roots of positive numbers; perfect squares; and negative square roots vs. square roots of negative numbers.

Duration: 0 hrs 50 mins

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 30 mins

Quiz: Square Roots

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 30 points

LESSON 7: RADICAL NOTATION

Study: Radical Notation

Learn about radical signs and radicands. Explore laws of exponents that apply to radicals.

Duration: 0 hrs 50 mins

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 30 mins

Quiz: Radical Notation

Take a guiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 30 points

LESSON 8: WRAP-UP

Practice: Assignment

Submit your work for a set of 20 practice problems.

Duration: 1 hr Scoring: 20 points

Review: Review Exercise

Take part in interactive games to review unit material in preparation for upcoming assessments.

Duration: 1 hr

Discuss: Thinking Big with Exponents

Take part in a three- to five-question discussion about applying methods learned in this unit.

Duration: 0 hrs 20 mins Scoring: 30 points

Test (CS): Exponents

Take a computer-scored test to assess what you have learned in this unit.

Test (TS): Exponents

Take a teacher-scored test to assess what you have learned in this unit.

Duration: 0 hrs 30 mins Scoring: 50 points

UNIT 9: SOLVING EQUATIONS WITH ROOTS AND POWERS

LESSON 1: SOLVING |X| = B

Study: Solving |x| = b

Learn about finding solution sets for absolute values using a number line.

Duration: 0 hrs 50 mins

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 30 mins

Quiz: Solving |x| = b

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 22 points

LESSON 2: SOLVING $X^2 = B$

Study: Solving $x^2 = b$

Learn about evaluating expressions with exponents by isolating the variable and finding the principal square root of both sides

Duration: 0 hrs 50 mins

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 30 mins

Quiz: Solving $x^2 = b$

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 24 points

LESSON 3: SOLVING & RADIC; X = B

Study: Solving $\sqrt{x} = b$

Learn to solve equations involving square roots.

Duration: 0 hrs 50 mins

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 30 mins

Quiz: Solving $\sqrt{x} = b$

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 24 points

LESSON 4: INEQUALITIES AND ABSOLUTE VALUE

Study: Inequalities and Absolute Value

Learn about using a number line to find solution sets of equations with absolute values.

Duration: 0 hrs 50 mins

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 30 mins

Quiz: Inequalities and Absolute Value

Take a quiz to assess your understanding of the material.

LESSON 5: INEQUALITIES AND X2

Study: Inequalities and x^2

Learn about solving inequalities with exponents.

Duration: 0 hrs 50 mins

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 30 mins

Quiz: Inequalities and x^2

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 16 points

LESSON 6: INEQUALITIES AND & RADIC;X

Study: Inequalities and \sqrt{x}

Learn about solving inequalities with square roots by squaring both sides and plotting solution sets on a number line.

Duration: 0 hrs 50 mins

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 30 mins

Quiz: Inequalities and \sqrt{x}

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 16 points

LESSON 7: THE PYTHAGOREAN THEOREM

Study: The Pythagorean Theorem

Learn the definition of right angles and triangles. Explore the formula for the Pythagorean theorem by using the theorem to solve a real-world problem.

Duration: 0 hrs 50 mins

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 30 mins

Quiz: The Pythagorean Theorem

Take a guiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 16 points

LESSON 8: WRAP-UP

Practice: Assignment

Submit your work for a set of 20 practice problems.

Duration: 1 hr Scoring: 20 points

Review: Review Exercise

Take part in interactive games to review unit material in preparation for upcoming assessments.

Duration: 1 hr

Discuss: Square Roots in the Real World

Take part in a three- to five-question discussion about applying methods learned in this unit.

Duration: 0 hrs 20 mins Scoring: 30 points

Test (CS): Solving Equations with Roots and Powers

Take a computer-scored test to assess what you have learned in this unit.

Duration: 0 hrs 40 mins Scoring: 75 points

Test (TS): Solving Equations with Roots and Powers

Take a teacher-scored test to assess what you have learned in this unit.

Duration: 0 hrs 30 mins Scoring: 50 points

UNIT 10: MULTI-STEP EQUATIONS

LESSON 1: SOLVING AX + B = C

Study: Solving ax + b = c

Identify the strategy for solving one-step equations and apply it to multi-step equations. Perform the reverse of two or more operations on an equation. Build a variable expression to determine how to isolate the variable.

Duration: 0 hrs 50 mins

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 30 mins

Quiz: Solving ax + b = c

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 28 points

LESSON 2: COLLECTING LIKE TERMS

Study: Collecting Like Terms

Learn definitions of like terms and constants. Learn about collecting like terms, adding and subtracting coefficients of like terms, and solving equations with unlike terms.

Duration: 0 hrs 50 mins

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 30 mins

Quiz: Identifying Like Terms

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 30 points

Quiz: Collecting Like Terms

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 30 points

LESSON 3: USING THE DISTRIBUTIVE PROPERTY

Study: Using the Distributive Property

Learn about using the distributive property with variable expressions then collecting like terms.

Duration: 0 hrs 50 mins

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 30 mins

Quiz: Using the Distributive Property

Take a guiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 30 points

LESSON 4: VARIABLES ON BOTH SIDES OF THE EQUATION

Study: Variables on Both Sides of the Equation

Learn about adding or subtracting variable expressions from both sides of an equation and about collecting variable terms on one side of an equation. Learn about equations with no solution.

Duration: 0 hrs 50 mins

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Quiz: Variables on Both Sides of the Equation - Basic

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 28 points

Quiz: Variables on Both Sides of the Equation - Advanced

Take a guiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 22 points

LESSON 5: THE PROFIT PROBLEM

Study: The Profit Problem

Apply methods from this unit to the real-world problem of calculating profit.

Duration: 0 hrs 50 mins

LESSON 6: WRAP-UP

Practice: Assignment

Submit your work for a set of 20 practice problems.

Duration: 1 hr Scoring: 20 points

Review: Review Exercise

Take part in interactive games to review unit material in preparation for upcoming assessments.

Duration: 1 hr

Discuss: The Importance of Strategy

Take part in a three- to five-question discussion about applying methods learned in this unit.

Duration: 0 hrs 20 mins Scoring: 30 points

Test (CS): Multi-Step Equations

Take a computer-scored test to assess what you have learned in this unit.

Duration: 0 hrs 40 mins Scoring: 72 points

Test (TS): Multi-Step Equations

Take a teacher-scored test to assess what you have learned in this unit.

Duration: 0 hrs 30 mins Scoring: 50 points

UNIT 11: LINEAR EQUATIONS

LESSON 1: CARTESIAN COORDINATE SYSTEMS

Study: Cartesian Coordinate Systems

Represent real-world information with points instead of bars on a graph. Discover that the Cartesian coordinate system is made up of two number lines. Identify the origin, the *x*-axis, the *y*-axis, and the four quadrants on the *xy*-plane. Graph sets of coordinates known as ordered pairs.

Duration: 0 hrs 50 mins

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 30 mins

Quiz: Reading Data from Graphs

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 20 points

Quiz: Identifying Parts of a Cartesian Coordinate Grid

Take a guiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 26 points

Quiz: Plotting Coordinate Pairs

Take a quiz to assess your understanding of the material.

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Quiz: Points in the Four Quadrants

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 16 points

LESSON 2: LINES IN THE XY-PLANE

Study: Lines in the xy-plane

Learn about plotting solution set values of equations as data points on the xy-plane (the graph of the equation).

Duration: 0 hrs 50 mins

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 30 mins

Quiz: Lines in the xy-plane

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 22 points

LESSON 3: SLOPE

Study: Slope

Learn about rise, run, and the slope formula. Learn about rearranging a formula to compute rise and run, negative zero, and undefined slopes.

Duration: 0 hrs 50 mins

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 30 mins

Quiz: Finding the Slope of a Line - Basic

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 24 points

Quiz: Finding the Slope of a Line - Advanced

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 16 points

Quiz: Identifying Types of Slopes

Take a guiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 22 points

LESSON 4: PARALLEL AND PERPENDICULAR LINES

Study: Parallel and Perpendicular Lines

Define parallel lines and the relationship of their slopes. Identify perpendicular lines, how they intersect, and the product of their slopes as negative reciprocals.

Duration: 0 hrs 50 mins

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 30 mins

Quiz: Parallel and Perpendicular Lines

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 24 points

LESSON 5: SLOPE AND EQUATIONS

Study: Slope and Equations

Learn about finding the equation of a line. Learn about slope as the coefficient of the variable in the equation of the line (y = mx).

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 30 mins

Quiz: Slope and Equations

Take a guiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 22 points

LESSON 6: SLOPE-INTERCEPT FORM

Study: Slope-Intercept Form

Determine the equations of lines that don't pass through the origin. Plot a set of points to find the graph, slope, and *y*-intercept equation of a line. Discover the general form of the slope-intercept equation of a line.

Duration: 0 hrs 50 mins

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 30 mins

Quiz: Slope-Intercept Form

Take a guiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 28 points

LESSON 7: POINT-SLOPE FORM

Study: Point-Slope Form

Learn about the point-slope equation and about manipulating equations into slope-intercept form.

Duration: 0 hrs 50 mins

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 30 mins

Quiz: Point-Slope Equation of a Line Quiz #1

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 24 points

Quiz: Point-Slope Equation of a Line Quiz #2

Take a quiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 16 points

LESSON 8: LINEAR INEQUALITIES

Study: Linear Inequalities

Learn about graphing inequalities and the half-plane. Discover three steps to graphing inequalities.

Duration: 0 hrs 50 mins

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hrs 30 mins

Quiz: Linear Inequalities

Take a guiz to assess your understanding of the material.

Duration: 0 hrs 25 mins Scoring: 26 points

LESSON 9: WRAP-UP

Practice: Assignment

Submit your work for a set of 20 practice problems.

Duration: 1 hr Scoring: 20 points

Review: Review Exercises

Take part in interactive games to review unit material in preparation for upcoming assessments.

Duration: 1 hr

Discuss: Lines and Graphs Beyond Math Class

Take part in a three- to five-question discussion about applying methods learned in this unit.

Duration: 0 hrs 20 mins Scoring: 30 points

Test (CS): Linear Equations

Take a computer-scored test to assess what you have learned in this unit.

Duration: 0 hrs 40 mins Scoring: 75 points

Test (TS): Linear Equations

Take a teacher-scored test to assess what you have learned in this unit.

Duration: 0 hrs 30 mins Scoring: 50 points

UNIT 12: SEMESTER 2 REVIEW AND EXAM

LESSON 1: PREPARING FOR THE SEMESTER EXAM

Review: Semester Review

Prepare for the semester exam by reviewing key concepts covered in this semester.

Duration: 1 hr

Exam: Semester Exam

Take a computer-scored exam to demonstrate your mastery of concepts and skills covered in this semester.

Duration: 0 hrs 50 mins Scoring: 224 points

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