

G8 Common Core Math (CCSS8) Content

Module 1: Integer Exponents and Scientific Notation

Topic A: Exponential Notation and Properties of Integer Exponents

- Lesson 1: Exponential Notation
- Lesson 2: Multiplication of Numbers in Exponential Form
- Lesson 3: Numbers in Exponential Form Raised to a Power
- Lesson 4: Numbers Raised to the Zeroth Power
- Lesson 5: Negative Exponents and the Laws of Exponents
- Lesson 6: Proofs of Laws of Exponents

Mid-Module Assessment

- Topic B: Magnitude and Scientific Notation
- Lesson 7: Magnitude
 - Lesson 8: Estimating Quantities
 - Lesson 9: Scientific Notation
 - Lesson 10: Operations with Numbers in Scientific Notation
 - Lesson 11: Efficacy of Scientific Notation
 - Lesson 12: Choice of Unit
 - Lesson 13: Comparison of Numbers Written in Scientific Notation and Interpreting Scientific Notation Using Technology

End-of-Module Assessment

Module 2: The Concept of Congruence

- Topic A: Definitions and Properties of the Basic Rigid Motions
- Lesson 1: Why Move Things Around?
 - Lesson 2: Definition of Translation and Three Basic Properties
 - Lesson 3: Translating Lines
 - Lesson 4: Definition of Reflection and Basic Properties
 - Lesson 5: Definition of Rotation and Basic Properties
 - Lesson 6: Rotations of 180 Degrees

- Topic B: Sequencing the Basic Rigid Motions
- Lesson 7: Sequencing Translations
 - Lesson 8: Sequencing Reflections and Translations
 - Lesson 9: Sequencing Rotations
 - Lesson 10: Sequences of Rigid Motions

Mid-Module Assessment

- Topic C: Congruence and Angle Relationships
- Lesson 11: Definition of Congruence and Some Basic Properties
 - Lesson 12: Angles Associated with Parallel Lines
 - Lesson 13: Angle Sum of a Triangle
 - Lesson 14: More on the Angles of a Triangle

- Topic D: The Pythagorean (Optional)
- Lesson 15: Informal Proof of the Pythagorean Theorem
 - Lesson 16: Applications of the Pythagorean Theorem

End-of-Module Assessment

Module 3: Similarity

Topic A: Dilation

- Lesson 1: What Lies Behind “Same Shape”?
- Lesson 2: Properties of Dilations
- Lesson 3: Examples of Dilations
- Lesson 4: Fundamental Theorem of Similarity (FTS)
- Lesson 5: First Consequences of FTS
- Lesson 6: Dilations on the Coordinate Plane
- Lesson 7: Informal Proofs of Properties of Dilations (optional)

Mid-Module Assessment

- Topic B: Similar Figures
- Lesson 8: Similarity
 - Lesson 9: Basic Properties of Similarity
 - Lesson 10: Informal Proof of AA Criterion for Similarity
 - Lesson 11: More About Similar Triangles
 - Lesson 12: Modeling Using Similarity

End-of-Module Assessment

- Topic C: The Pythagorean Theorem
- Lesson 13: Proof of the Pythagorean Theorem
 - Lesson 14: The Converse of the Pythagorean Theorem

Module 4: Linear Equations

- Topic A: Writing and Solving Linear Equations
- Lesson 1: Writing Equations Using Symbols
 - Lesson 2: Linear and Nonlinear Expressions in x
 - Lesson 3: Linear Equations in x
 - Lesson 4: Solving a Linear Equation
 - Lesson 5: Writing and Solving Linear Equations
 - Lesson 6: Solutions of a Linear Equation
 - Lesson 7: Classification of Solutions
 - Lesson 8: Linear Equations in Disguise
 - Lesson 9: An Application of Linear Equations

- Topic B: Linear Equations in Two Variables and Their Graphs
- Lesson 10: A Critical Look at Proportional Relationships
 - Lesson 11: Constant Rate
 - Lesson 12: Linear Equations in Two Variables
 - Lesson 13: The Graph of a Linear Equation in Two Variables
 - Lesson 14: The Graph of a Linear Equation—Horizontal and Vertical Lines

Mid-Module Assessment

- Topic C: Slope and Equations of Lines
- Lesson 15: The Slope of a Non-Vertical Line
 - Lesson 16: The Computation of the Slope of a Non-Vertical Line
 - Lesson 17: The Line Joining Two Distinct Points of the Graph
 - $y = mx + b$ has Slope m
 - Lesson 18: There Is Only One Line Passing Through a Given Point with a Given Slope

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Lesson 19: The Graph of a Linear Equation in Two Variables Is a Line

Lesson 20: Every Line Is a Graph of a Linear Equation

Lesson 21: Some Facts about Graphs of Linear Equations in Two Variables

Lesson 22: Constant Rates Revisited

Lesson 23: The Defining Equation of a Line

Topic D: Systems of Linear Equations and Their Solutions

Lesson 24: Introduction to Simultaneous Equations

Lesson 25: Geometric Interpretation of the Solutions of a Linear System

Lesson 26: Characterization of Parallel Lines

Lesson 27: Nature of Solutions of a System of Linear Equations

Lesson 28: Another Computational Method of Solving a Linear System

Lesson 29: Word Problems

Lesson 30: Conversion between Celsius and Fahrenheit

Topic E (Optional): Pythagorean Theorem

Lesson 31: System of Equations Leading to Pythagorean Triples

Lesson 7: Patterns in Scatter Plots

Lesson 8: Informally Fitting a Line

Lesson 9: Determining the Equation of a Line Fit to Data

Mid-Module Assessment

Topic C: Linear and Nonlinear Models

Lesson 10: Linear Models

Lesson 11: Using Linear Models in a Data Context

Lesson 12: Nonlinear Models in a Data Context (Optional)

Topic D: Bivariate Categorical Data

Lesson 13: Summarizing Bivariate Categorical Data in a Two-Way Table

Lesson 14: Association between Categorical Variables

End-of-Module Assessment

Module 7: Introduction to Irrational Numbers Using Geometry

Topic A: Square and Cube Roots

Lesson 1: The Pythagorean Theorem

Lesson 2: Square Roots

Lesson 3: Existence and Uniqueness of Square and Cube Roots

Lesson 4: Simplifying Square Roots (optional)

Lesson 5: Solving Radical Equations

Topic B: Decimal Expansions of Numbers

Lesson 6: Finite and Infinite Decimals

Lesson 7: Infinite Decimals

Lesson 8: The Long Division Algorithm

Lesson 9: Decimal Expansions of Fractions, Part 1

Lesson 10: Converting Repeating Decimals to Fractions

Lesson 11: The Decimal Expansion of Some Irrational Numbers

Lesson 12: Decimal Expansions of Fractions, Part 2

Lesson 13: Comparing Irrational Numbers

Lesson 14: Decimal Expansion of π

Mid-Module Assessment

Topic C: The Pythagorean Theorem

Lesson 15: Pythagorean Theorem, Revisited

Lesson 16: Converse of the Pythagorean Theorem

Lesson 17: Distance on the Coordinate Plane

Lesson 18: Applications of the Pythagorean Theorem

Topic D: Applications of Radicals and Roots

Lesson 19: Cones and Spheres

Lesson 20: Truncated Cones

Lesson 21: Volume of Composite Solids

Lesson 22: Average Rate of Change

Lesson 23: Nonlinear Motion

End-of-Module Assessment

End-of-Module Assessment

Module 5: Examples of Functions from Geometry

Topic A: Functions

Lesson 1: The Concept of a Function

Lesson 2: Formal Definition of a Function

Lesson 3: Linear Functions and Proportionality

Lesson 4: More Examples of Functions

Lesson 5: Graphs of Functions and Equations

Lesson 6: Graphs of Linear Functions and Rate of Change

Lesson 7: Comparing Linear Functions and Graphs

Lesson 8: Graphs of Simple Nonlinear Functions

Topic B: Volume

Lesson 9: Examples of Functions from Geometry

Lesson 10: Volumes of Familiar Solids—Cones and Cylinders

Lesson 11: Volume of a Sphere

End-of-Module Assessment

Module 6: Linear Functions

Topic A: Linear Functions

Lesson 1: Modeling Linear Relationships

Lesson 2: Interpreting Rate of Change and Initial Value

Lesson 3: Representations of a Line

Lessons 4–5: Increasing and Decreasing Functions

Topic B: Bivariate Numerical Data

Lesson 6: Scatter Plots

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