



# Curriculum Outline GRADE 8

A Guide for Grade 8 Math Curriculum

**GRADE 8**

years

## NUMBER PROPERTIES

- Understanding Negative Exponents
- Relationship Between Squares and Square Roots
- Positive and Negative Square Roots
- Square Roots of Perfect Squares
- Estimate Positive and Negative Square Roots
- Estimate Cube Roots
- Identify Rational and Irrational Numbers
- Evaluate Exponents
- Understanding Exponents
- Compare Numbers Written in Scientific Notation
- Convert Between Standard and Scientific Notation
- Simplify Variable Expressions Using Properties
- Distributive Property
- Properties of Addition and Multiplication
- Solve Equations involving Squares and Square Roots
- Multiplication with Exponents
- Division with Exponents
- Multiplication and Division with Exponents
- Power Rule
- Simplify Expressions involving Exponents

## DECIMALS

- Convert Between Decimals and Fractions or Mixed Numbers
- Compare Numbers Written in Scientific Notation
- Solving Proportions

## FRACTIONS

- Convert Between Decimals and Fractions or Mixed Numbers
- Solving Proportions

## COMPARISON

- Estimate Positive and Negative Square Roots
- Estimate Cube Roots

## ALGEBRA

- Evaluate Variable Expressions with Squares and Square Roots
- Exponents: Solve for the Variable
- Exponents with Decimal and Fractional Bases
- Evaluate Negative Exponents
- Exponents with Negative Bases
- Cube Roots of Perfect Cubes
- Model and Solve Equations Using Algebra Tiles
- Proportional Relationships
- Solving Proportions
- Identities and Equations with No Solutions
- Find Slope from Two Points
- Solve One-Step Linear Equations
- Simplify Variable Expressions Using Properties
- Solve Two-Step Linear Equations
- Distributive Property
- Solve Equations involving Like Terms
- Solve Multi Step Equations
- Find the Slope of a Graph
- Find Slope from an Equation
- Is  $x, y$  a Solution to the System of Equations
- Find Points on a Function Graph
- Find the Number of Solutions to a System of Equations
- Solve a System of Equations Using Elimination
- Classify a System of Equations
- Solve a System of Equations Using Elimination
- Rate of Change
- Complete a Function Table
- Solve a System of Equations Using Substitution
- Write a Rule for a Function Table
- Algebra: Linear Function
- Solve a System of Equations Using Substitution
- Find the Constant of Variation
- Identify Linear and Nonlinear Functions
- Classify a System of Equations by Graphing
- Powers of Monomials
- Solutions to a System of Equations by Graphing
- Powers of Monomials
- Divide Monomials
- Multiply and Divide Monomials
- Graph a Proportional Relationship
- Graph a Line from an Equation
- Find the Constant of Variation with Tables
- Algebra: Linear Function with Intercepts
- Graph a Line from an Equation Using Algebra

## GEOMETRY

- Identify Reflections, Rotations and Translations
- Dilations: Find the Coordinates
- Transversal of Parallel Lines
- Find the Distance Between Two Points
- Volume of Prisms and Cylinders
- Volume of Pyramids and Cones
- Volume and Surface Area of Spheres
- Pythagorean Theorem: Find the Hypotenuse
- Pythagorean Theorem: Find the Leg
- Pythagorean Theorem: Find the Perimeter
- Pythagorean Theorem
- Converse of the Pythagorean Theorem
- Find Missing Angles in Triangles and Quadrilaterals
- Interior Angles of Polygons
- Similar and Congruent Figures
- Congruent Figures: Side Lengths and Angle Measures
- Congruence Statements and Corresponding Parts
- Similar Solids
- Similar Figures Side Lengths and Angle Measures
- Identify Angles by Type
- Complementary, Supplementary, Vertical and Adjacent Angles
- Congruent Triangles SSS SAS and ASA
- Measures of Bisected Lines and Angles

## RATIOS

- Ratios and Proportions
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- Unit Rates
- Proportional Relationships
- Solving Proportions
- Find Slope from Two Points
- Find the Slope of a Graph
- Find Slope from an Equation
- Find Points on a Function Graph

## MULTIPLICATION

- Multiply Numbers Written in Scientific Notation
- Properties of Addition and Multiplication

## MIXED EQUATIONS

- Compare Numbers Written in Scientific Notation
- Solving Proportions
- Simplify Variable Expressions Using Properties
- Distributive Property

## DIVISION

- Divide Numbers Written in Scientific Notation
- Find the Proportional Relationship
- Find the Constant of Variation
- Find the Constant of Variation with Tables

## ADDITION

- Properties of Addition and Multiplication

## GRAPHING

- Find the Constant of Variation Graphs
- Find the Slope of a Graph
- Scatter Plots
- Find Points on a Function Graph
- Rotations: Graph the Image
- Translations: Graph the Image
- Reflections: Graph the Image
- Translations Find the Coordinates
- Reflections Find the Coordinates
- Rotations Find the Coordinates
- Dilations Graph the Image
- Create Histograms
- Interpret Histograms
- Create Frequency Charts
- Interpret Stem and Leaf Plots
- Identify Linear and Nonlinear Functions
- Classify a System of Equations by Graphing
- Solutions to a System of Equations by Graphing
- Graph a Line Using Slope
- Solve a System of Equations by Graphing
- Graph a Proportional Relationship
- Graph a Line from a Function Table
- Graph a Line from an Equation
- Circle Graphs and Central Angles
- Graph a Line from an Equation Using Algebra

## STATS

- Scatter Plots
- Interpret Histograms