

GRADE 9 Syllabus

Working with Numbers

1. Comparing numbers
2. Absolute value
3. Converting decimals to fractions
4. Converting fractions to decimals
5. Square root of positive integers
6. Square root of decimal numbers

Order of Operations

1. Add, subtract, multiply, and divide integers
2. Evaluate numerical expressions involving integers
3. Evaluate variable expressions involving integers
4. Add and subtract rational numbers
5. Multiply and divide rational numbers
6. Evaluate numerical expressions involving rational numbers
7. Evaluate variable expressions involving rational numbers

Scientific Notation

1. Convert between standard and scientific notation
2. Compare numbers written in scientific notation
3. Multiply numbers written in scientific notation
4. Divide numbers written in scientific notation

Percents

1. Write percent fraction
2. Convert percent to decimal
3. Convert decimal to percent
4. Convert fraction to percent
5. Express one quantity as a percent of the other
6. Percentage calculation: tax, discount, profit, loss, etc.

Ratio, Rates and Proportion

1. Unit rates
2. Unit prices
3. Solve proportions
4. Solve proportions: word problems
5. Scale drawings: word problems
6. Average speed

Consumer Math

1. Price lists
2. Unit prices
3. Find the total price
4. Percent of a number: tax, discount, and more
5. Find the percent change: tax, discount, etc.
6. Simple interest
7. Hire Purchase

Geometric

1. Perimeter
2. Area
3. Area and perimeter of irregular shapes
4. Area of Circles, semicircles, and quadrants
5. Circumference of circles
6. Area and perimeter of compound shapes
7. Volume of cubes, prisms, and pyramids
8. Surface area of cubes, prisms, and pyramids
9. Volume of cylinders
10. Volume of cones
11. Surface area of cylinders
12. Surface area of cones
13. Volume of spheres
14. Pythagorean's Theorem

Properties

1. Associative property
2. Commutative property
3. Distributive property
4. Addition/Subtraction property
5. Multiplication property
6. Division with zero property

Variable Expressions

1. Write variable expressions
2. Multiply and divide algebraic terms
3. Use distributive law to expand single brackets of algebraic expressions
4. Use distributive law to expand single brackets and simplify algebraic expressions
5. Factorize simple algebraic expression
6. Substitute numbers for words and letters in formulae

Equations

1. Solve one-step linear equations
2. Solve two-step linear equations
3. Solve equations with variable on both sides
4. Equations with brackets
5. Fractional equations
6. Construct and solve equations from given situations

Single Variable Inequalities

1. Graph inequalities
2. Write inequalities from graphs
3. Identify solutions to inequalities
4. Solve one-step linear inequalities
5. Graph solutions to one-step linear inequalities
6. Solve two-step linear inequalities
7. Graph solutions to two-step linear inequalities
8. Solve compound inequalities
9. Graph compound inequalities

Absolute Value Equations

1. Solve one-step absolute value equations
2. Solve two-step absolute value equations

Direct and Inverse Variation

1. Identify proportional relationships
2. Find the constant of variation
3. Graph a proportional relationship
4. Write direct variation equations
5. Write and solve direct variation equations
6. Identify direct variation and inverse variation
7. Write inverse variation equations
8. Write and solve inverse variation equations

Exponents

1. Positive exponents
2. Negative exponents
3. Zero exponents
4. Multiplication and division indices with the same base

Polynomials

1. Polynomial vocabulary
2. Model polynomials with algebra tiles
3. Add and subtract polynomials
4. Add and subtract polynomials
5. Multiply a polynomial by a monomial
6. Multiply two binomials
7. Multiply polynomials