

Grade 5 - Maths Overview



Whole Numbers

- Round numbers within 10,000 to the nearest 10, 100, or 1000
- Use place-value models to represent numbers to 1,000,000.
- Read, write in words, standard, and expanded notation, and identify place values of digits and round numbers in the billions.
- Round large numbers to the nearest 10, 100, 1000, 10,000, or 100,000.

Addition and Subtraction of Whole Numbers

- Use estimation to verify the reasonableness of calculated results in addition and subtraction, check subtraction problems using addition.
- Add/subtract numbers in the billions.

Multiplication and Division of Whole Numbers

- Multiply numbers within 10,000 by a 2-digit number.
- Divide numbers within 10,000 by a 2-digit number.
- Multiply/divide numbers within 1,000,000 by tens, hundreds, or thousands.
- Use estimation to verify the reasonableness of calculated results in multiplication and division problems.
- Check division problems using multiplication.
- Find the factors and common factors of whole numbers within 100.
- Find the greatest common factor of up to 3 numbers within 100.
- Identify prime numbers.
- Determine the prime factors of numbers within 100 and write the numbers as products of prime numbers, using exponents.
- Find multiples and common multiples of whole numbers within 100.
- Find the lowest common multiple of up to 3 numbers within 100.
- Use divisibility rules for 2, 3, 5, 6, 9, and 10.
- Use order of operations to solve mathematical expressions with or without parentheses.
- Understand the distributive property.

Mental Math Strategies

- Use the commutative and associative properties to perform mental calculations and check results.
- Use the distributive property to perform mental calculations and check results.
- Add/subtract a number close to a multiple of 100 (e.g. 498).
- Multiply by 99 or by 25.
- Multiply by a number one less than a multiple of 10 or 100 (e.g. 49, 499).

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Fractions

- Compare and order fractions with different denominators.
- Find the fraction of a set where the answer is a whole number or a mixed number.
- Find fraction of a set for measurements (e.g. 10 minutes as a fraction of one hour).
- Add/Subtract unlike fractions.
- Relate division to fractions.
- Add/subtract mixed numbers.
- Multiply a fraction by a whole number.
- Multiply a fraction by a fraction.
- Divide a fraction by a whole number.
- Divide a whole number or a fraction by a fraction.

Decimals

- Understand tenths, hundredths, thousandths, locate decimal numbers on a number line, compare decimal numbers.
- Convert a decimal to a fraction and simplify.
- Convert a fraction to a decimal number (denominators are a factor of 10, 100, or 1000).
- Compare and order decimal numbers of up to 3 decimal places and fractions.
- Round decimal numbers up to 3 decimal places to the nearest whole number, to 1-decimal place, or to 2-decimal places.
- Add/Subtract decimal numbers of up to 3 decimal places.
- Multiply/Divide decimal numbers of up to 2 decimal places by a whole number.
- Find the quotient of a division problem correct to 2- decimal places.
- Convert fractions to decimals correct to 2-decimal places.
- Multiply/Divide decimal number by tens, hundreds, or thousands.
- Multiply/divide a decimal number by a 2-digit whole number.
- Multiply/divide a whole number or a decimal by a decimal.
- Use estimation to verify the reasonableness of calculated results in problems involving decimal numbers.

Time

- Convert between of units of time.

Length, Mass & Capacity

- Convert units within a metric system using multiplication.
- Convert fractional measurements to a different unit or a compound unit, within a measuring system.

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Perimeter, Area and Volume

- Find the area of shapes by covering them with unit squares or by counting squares.
- Understand and use units of area, such as square centimeter and square inch.
- Find the area, perimeter, and unknown sides of rectangles.
- Find the area and perimeter of composite figures made from squares and rectangles.
- Derive the formula for area of a triangle and find the area of triangles.
- Derive the formula for area of a parallelogram and find the area of parallelograms.
- Find the surface area of cubes and rectangular prisms.
- Understand and use units of volume, such as cubic centimeter and cubic inch.
- Find the volume of rectangular prisms.
- Find the side of a rectangular prism given the volume and two sides or area of one side.
- Understand the relationship between cubic centimeters, milliliters, and liters.
- Solve problems involving the change in height of liquids and volume of liquids in rectangular tanks, including rate problems.

Geometry

- Identify attributes of triangles and quadrilaterals.
- Measure and construct angles.
- Find unknown angles in figures based on identifying vertical, adjacent, complementary, or supplementary angles.
- Know and use angle properties of intersecting lines, triangles, parallelograms, rhombuses, and trapezoids to solve problems involving finding unknown angles.
- Construct triangles, parallelograms, and rhombuses with specified angles.
- Visualize, describe, and draw geometric solids.
- Understand the coordinate grid, locate points, and write ordered pairs (first quadrant).
- Understand the coordinate grid, locate points, and write ordered pairs (all four quadrants).

Percentages

- Understand and use percent.
- Find decimal and fraction equivalents for percentages.
- Write fractions as percentages.
- Solve problems involving percentage of a quantity.
- Calculate given percentages of quantities and solve problems involving discounts at sales, interest earned, percentage increase or decrease.

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Ratio/Average/Rate/Speed

- Use ratios to compare two quantities.
- Use ratios to compare three quantities.
- Find equivalent ratios and simplify ratios
- Use ratios to solve problems.
- Understand rate as the measure of one quantity per unit value of another.
- Solve problems involving rate.
- Use a unitary approach to solve rate problems.
- Solve discontinuous rate problems involving time.

Word Problems

- Solve multi-step word problems involving all four operations on whole numbers, fractions, decimals, percentage, and ratios.
- Solve multi-step word problems involving average, rate, and percentage.