

Math

Grade 5

Number Sense, Estimation, Computation

Students will be able to:

- Demonstrate understanding and application of place value from billions to thousandths.
- Demonstrate understanding of adding/subtracting integers and fractions with and without the use of number lines.
- Demonstrate understanding of zero and one as the additive and multiplicative identities.
- Demonstrate understanding of fractions as ratios of whole numbers and as parts of unit wholes.
- Determine common equivalent fractions, mixed numbers, decimals, and percents.
- Solve problems involving addition, subtraction, multiplication, division, and positive integer exponents with whole numbers, positive fractions, mixed numbers, decimals, and percents.
- Demonstrate an understanding of positive integer exponents, in particular when used in powers of ten (10^2 , 10^3). Extend multiplication/division by powers of ten, expanded notation without exponents, factors, and prime factors.
- Round decimals to the nearest thousandth.
- Add, subtract, multiply, and divide (with double-digit divisors) whole numbers and positive decimals, accurately and efficiently.
- Use long division to one decimal place.
- Find, compare, and position integers, fractions, mixed numbers, decimals, and percents (both positive and negative) on the number line.
- Apply number theory concepts to the solution of problems. These include prime and composite numbers, prime factorization, greatest common factor, least common multiple, and divisibility rules for 2, 3, 4, 5, 6, 9, and 10.

Patterns, Relations, & Algebra

Students will be able to:

- Analyze and determine the rules for extending symbolic, arithmetic, and geometric patterns and progressions (ABBCCC; 1, 5, 9, 13 ...; 3, 9, 27...).
- Demonstrate an understanding of variables for converting fractions to decimals.
- Use the property of equality to solve problems: if $\square + 7 = 13$, then $\square = 13 - 7$, therefore $\square = 6$; if $3 \times \square = 15$, then $\frac{1}{3} \times 3 \times \square = \frac{1}{3} \times 15$, therefore $\square = 5$.

Geometry

Students will be able to:

- Identify polygons based on their properties including types of interior angles, perpendicular or parallel sides, and congruence of sides (squares, rectangles, rhombuses, parallelograms, trapezoids, and isosceles, equilateral, and right triangles).
- Identify circle relationships: radius, diameter, and circumference.
- Use a protractor to draw and compare angles.
- Identify, graph, and find distance between points on the Cartesian coordinate plane.
- Predict and perform translations, rotations, and reflections on two-dimensional shapes.

Measurement

Students will be able to:

- Apply the concepts and formulas of perimeter and area to the solution of problems.
- Find areas of triangles and parallelograms. Recognize that shapes with the same number of sides, but different appearances can have the same area.
- Develop strategies to find the area of more complex shapes.

Statistics & Probability:

Students will be able to:

- Make predictions based on experimental and theoretical probabilities and calculate averages.
- Describe and compare data sets using the concepts of median, mean, mode, maximum and minimum, and range.
- Construct and interpret stem-and-leaf plots, line plots, and circle graphs.