

Third Grade Math Standards

Key Concept: Number Sense and Base Ten

The student will:

3.NSBT.1 Use place value understanding to round whole numbers to the nearest 10 or 100.

3.NSBT.2 Add and subtract whole numbers fluently to 1,000 using knowledge of place value and properties of operations.

3.NSBT.3 Multiply one-digit whole numbers by multiples of 10 in the range 10 – 90, using knowledge of place value and properties of operations.

3.NSBT.4 Read and write numbers through 999,999 in standard form and equations in expanded form.

3.NSBT.5 Compare and order numbers through 999,999 and represent the comparison using the symbols $>$, $=$, or $<$.

Key Concept: Number Sense- Fractions

The student will:

3.NSF.1 Develop an understanding of fractions (i.e., denominators 2, 3, 4, 6, 8, 10) as numbers.

- . A fraction $\frac{1}{b}$ (called a unit fraction) is the quantity formed by one part when a whole is partitioned into b equal parts;
- . b. A fraction $\frac{a}{b}$ is the quantity formed by a parts of size $\frac{1}{b}$;
- . c. A fraction is a number that can be represented on a number line based on counts of a unit fraction;
- . d. A fraction can be represented using set, area, and linear models.

3.NSF.2 Explain fraction equivalence (i.e., denominators 2, 3, 4, 6, 8, 10) by demonstrating an understanding that:

- . a. two fractions are equal if they are the same size, based on the same whole, or at the same point on a number line;
- . b. fraction equivalence can be represented using set, area, and linear models;
- . c. whole numbers can be written as fractions (e.g., $4 = \frac{4}{1}$ and $1 = \frac{4}{4}$);
- . d. fractions with the same numerator or same denominator can be compared by reasoning about their size based on the same whole.

3.NSF.3 Develop an understanding of mixed numbers (i.e., denominators 2, 3, 4, 6, 8, 10) as iterations of unit fractions on a number line.

Key Concept: Algebraic Thinking and Operations

The student will:

3.ATO.1 Use concrete objects, drawings and symbols to represent multiplication facts of two single-digit whole numbers and explain the relationship between the factors (i.e., 0 – 10) and the product.

3.ATO.2 Use concrete objects, drawings and symbols to represent division without remainders and explain the relationship among the whole number quotient (i.e., 0 – 10), divisor (i.e., 0 – 10), and dividend.

3.ATO.3 Solve real-world problems involving equal groups, area/array, and number line models using basic multiplication and related division facts. Represent the problem situation using an equation with a symbol for the unknown.

3.ATO.4 Determine the unknown whole number in a multiplication or division equation relating three whole numbers when the unknown is a missing factor, product, dividend, divisor, or quotient.

3.ATO.5 Apply properties of operations (i.e., Commutative Property of Multiplication, Associative Property of Multiplication, Distributive Property) as strategies to multiply and divide and explain the reasoning.

3.ATO.6 Understand division as a missing factor problem.

3.ATO.7 Demonstrate fluency with basic multiplication and related division facts of products and dividends through 100.

3.ATO.8 Solve two-step real-world problems using addition, subtraction, multiplication and division of whole numbers and having whole number answers. Represent these problems using equations with a letter for the unknown quantity.

3.ATO.9 Identify a rule for an arithmetic pattern (e.g., patterns in the addition table or multiplication table).

Key Concept: **Geometry**

The student will:

3.G.1 Understand that shapes in different categories (e.g., rhombus, rectangle, square, and other 4-sided shapes) may share attributes (e.g., 4-sided figures) and the shared attributes can define a larger category (e.g., quadrilateral). Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories.

3.G.2 Partition two-dimensional shapes into 2, 3, 4, 6, or 8 parts with equal areas and express the area of each part using the same unit fraction. Recognize that equal parts of identical wholes need not have the same shape.

3.G.3 Use a right angle as a benchmark to identify and sketch acute and obtuse angles.

3.G.4 Identify a three-dimensional shape (i.e., right rectangular prism, right triangular prism, pyramid) based on a given two-dimensional net and explain the relationship between the shape and the net.

Key Concept: **Measurement and Data Analysis**

The student will:

3.MDA.1 Use analog and digital clocks to determine and record time to the nearest minute, using a.m.

and p.m.; measure time intervals in minutes; and solve problems involving addition and subtraction of time intervals within 60 minutes.

3.MDA.2 Estimate and measure liquid volumes (capacity) in customary units (i.e., c., pt., qt., gal.) and metric units (i.e., mL, L) to the nearest whole unit.

3.MDA.3 Collect, organize, classify, and interpret data with multiple categories and draw a scaled picture graph and a scaled bar graph to represent the data.

3.MDA.4 Generate data by measuring length to the nearest inch, half-inch and quarter-inch and organize the data in a line plot using a horizontal scale marked off in appropriate units.

3.MDA.5 Understand the concept of area measurement.

- . Recognize area as an attribute of plane figures;
- . Measure area by building arrays and counting standard unit squares;
- . Determine the area of a rectilinear polygon and relate to multiplication and addition.

3.MDA.6 Solve real-world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters.