

Grade Level Expectations for the Sunshine State Standards

Mathematics Third Grade



F L O R I D A
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of Education

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**Tom Gallagher
Commissioner**

**Sunshine State Standards
Grade Level Expectations
Mathematics
Third Grade**

The third grade student:

Number Sense, Concepts, and Operations

- reads, writes, and identifies whole numbers through hundred thousands or more.
- reads, writes, and identifies proper fractions with denominators including 2, 3, 4, 5, 6, 8, 10, and 100.
- reads, writes, and identifies decimal notation in the context of money.
- compares and orders whole numbers through hundred thousands or more, using concrete materials, number lines, drawings, numerals, language and symbols ($>$, $<$, $=$).
- compares and orders commonly used fractions, including halves, thirds, fourths, fifths, sixths and eighths, using concrete materials.
- translates problem situations into diagrams and models using whole numbers, fractions, and decimal notation in the context of money.
- uses concrete materials to model equivalent forms of whole numbers and common fractions.
- knows that two numbers in different forms are equivalent or non-equivalent, using whole numbers, fractions, and decimals in the context of money.
- knows the value of a given digit in whole numbers to hundred thousands, including writing and interpreting expanded forms of numbers.
- knows that the value of each place is 10 times that of the place to its right (for example, $1,000 = 10 \times 100$).
- compares the decimal (base 10) number system to the Roman numeral system using the Roman numerals I, V, X, L, and C.
- explains and demonstrates the addition and subtraction of whole numbers (up to three digits or more) using concrete materials, drawings, symbols, and algorithms.
- explains the inverse relationship of addition and subtraction and demonstrates that relationship by writing related fact families.
- explains and demonstrates the meaning of multiplication (for the repeated addition, array, and area models) using manipulatives, drawings, number sentences, and story problems.
- explains and demonstrates the meaning of division and of remainders (for the repeated subtraction and partitive models) using manipulatives, drawings, number sentences, and story problems.
- solves multiplication basic facts using various strategies including the following:
 - modeling with concrete objects or drawings
 - skip counting, for example, to find 4×5 , count 5, 10, 15, 20
 - using doubles and near doubles, such as $3 \times 8 = (2 \times 8) + 8$

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- applying the commutative property of multiplication, such as $7 \times 3 = 3 \times 7$
- applying the distributive property of multiplication, such as $8 \times 7 = (8 \times 5) + (8 \times 2)$
- noting and applying patterns in the “facts tables,” such as the regularity in the “nines”
- using the zero and identity properties of multiplication
- explains the inverse relationship of multiplication and division and writes related fact families.
- predicts the relative size of solutions in addition, subtraction, multiplication, and division of whole numbers, (for example, dividing a whole number by a smaller whole number results in another number that is smaller than the original number).
- writes number sentences for given situations involving the addition, subtraction, multiplication, and division of whole numbers.
- uses problem-solving strategies to determine the operation needed to solve one-step problems involving addition, subtraction, multiplication, and division of whole numbers.
- explains the reasonableness of answers.
- solves real-world problems involving addition, subtraction, multiplication, and division of whole numbers using an appropriate method (for example, mental math, paper and pencil, concrete materials, and calculator).
- explains the reason for choosing a particular computing method for a particular problem..
- solves real-world multiplication problems with whole numbers (two digits by one digit) using concrete materials, drawings, and paper and pencil.
- solves real-world division problems having divisors of one digit, dividends not exceeding two digits, with or without remainders.
- uses estimation strategies to determine a reasonable estimate of a quantity.
- estimates quantities of objects to 250 or more (for example, using a benchmark or reference set of fewer objects).
- chooses estimation strategies (for example, front-end, rounding) in real-world problem situations and explains the choice.
- uses a model to determine factors of whole numbers through 100 (for example, array).
- uses tables and charts to determine multiples of whole numbers 1-10 (for example, hundred chart, calendar).

Measurement

- knows measurement concepts and uses oral and written language to communicate them.
- uses a wide variety of concrete objects to investigate measurement of length, weight, capacity, area, perimeter, and volume (for example, cubes, grid paper, string, squares).

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- knows about measurement of time, including using A.M. and P.M., clocks, and calendars.
- knows temperature scales using thermometers.
- solves real-world problems involving measurement using concrete and pictorial models for the following:
 - length (for example, half-inch, centimeter)
 - weight (for example, pound, kilogram)
 - time (fifteen-, five-, and one-minute intervals)
 - capacity (for example, cup, liter)
 - temperature (Fahrenheit and Celsius)
 - angles (right)
- solves real-world problems involving perimeter, area, and volume using concrete materials or pictures.
- uses schedules, calendars, and elapsed time in hour intervals to solve real-world problems.
- calculates and compares measurable characteristics using manipulatives (for example, creates a meter using centimeter cubes).
- devises nonstandard, indirect ways to compare lengths that cannot be physically compared (side-by-side) (for example, uses string to compare the lengths of crooked paths).
- uses customary and metric units to compare length, weight, and capacity.
- knows an appropriate unit of measure to determine the dimension(s) of a given object (for example, standard - student chooses centimeters instead of meters to measure a pencil; nonstandard - student chooses a paper clip instead of his or her hand to measure a pencil).
- knows an appropriate unit of measure (standard or nonstandard) to measure weight, temperature, and capacity.
- knows how to determine whether an accurate or estimated measurement is needed for a solution.
- using real-world settings, objects, graph paper, or charts, solves problems involving estimated measurements, including the following:
 - length to nearest inch, centimeter
 - weight to nearest pound, kilogram
 - time to nearest half-hour interval
 - temperature to nearest five-degree interval
 - money to nearest \$1 or \$10 (combination of coin and currency)
- knows how to estimate the area and perimeter of square and rectangular shapes using graph paper, geoboard or other manipulatives and how to estimate the volume of a rectangular prism using manipulatives.
- selects an appropriate measurement unit for labeling the solution to real-world problems.

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- selects and uses the appropriate tool for situational measures (for example, measuring sticks, scales and balances, thermometers, measuring cups).

Geometry and Spatial Sense

- uses appropriate geometric vocabulary to describe two- and three-dimensional figures (for example, parallel and perpendicular lines, quadrilateral, right angle).
- draws and classifies two-dimensional figures having up to six or more sides.
- uses appropriate geometric vocabulary to describe properties of two-dimensional figures.
- uses manipulatives to solve problems requiring spatial visualization.
- knows symmetry, congruency, and reflections in geometric figures using concrete materials (for example, pattern blocks, geoboards, mirrors).
- knows congruent and similar figures.
- knows the effects of flips, slides, and 180° turns using concrete and graphic materials (for example, pattern blocks, geoboards, dot paper).
- explores tessellations.
- compares the concepts of area and perimeter through the use of concrete and graphic materials (for example, geoboards, color tiles, grid paper).
- applies the concepts of area and perimeter of rectangles to solve real-world and mathematical problems through the use of concrete materials (for example, framing a photograph).
- knows how to identify, locate, and plot ordered pairs of whole numbers on a graph.

Algebraic Thinking

- identifies missing parts in patterns.
- describes, extends, and creates numerical and geometric patterns through models (for example, concrete objects, drawings, simple number sequences).
- poses and solves problems by identifying a predictable visual or numerical pattern (for example: Continue this pattern: +, -, =, +, +, -, -, ____, ____, ...).
- knows mathematical relationships in patterns (for example, the second number is two more than the first).
- analyzes number patterns and states the rule for relationships (for example, 2, 4, 6, 8, ...; the rule: +2).
- discusses and explains the choice of the rule that applies to the pattern.
- identifies and extends a pattern according to the given rule.

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- applies and explains the appropriate rule to complete a table or chart (for example, in the following table, the rule is “multiply by 6”).

| | | | |
|---|----|---|----|
| 1 | 2 | 3 | 4 |
| 6 | 12 | ? | 24 |

- uses concrete materials to model and solve a number sentence with a missing addend for simple word problems (for example, $13 + r = 15$).
- creates a simple word problem for a given number sentence, diagram, or model.
- knows that an equation is a number sentence stating that two quantities are equal (for example, identifies and provides examples and non-examples of equations).
- uses physical models and graphs (for example, cubes, number lines) to solve real-world equations and inequalities.
- uses information from physical models and graphs to solve problems.

Data Analysis and Probability

- identifies different parts of a graph (for example, titles, labels, key).
- interprets and compares information from picto- and bar graphs including graphs from content-area materials and periodicals.
- generates questions, collects responses, and displays data in a table, pictograph or bar graph.
- interprets and explains orally and in writing displays of data.
- uses concrete materials to determine the mean in a set.
- identifies the range, median, and mode in a set of numerical data.
- uses concrete materials, pictures, or graphs to display data and identify range, median, and mode.
- uses a calculator to compare data.
- in class projects, constructs and discusses patterns in computer-generated graphs using real-world problems (for example, identify most popular pizza topping).
- determines the number of possible combinations of three elements and displays them in an organized way (for example, lists all possible combinations of three shirts and two pairs of shorts).
- represents all possible outcomes for a particular probability situation or event using models such as charts or lists
- calculates the probability of an event occurring from a set of all possible outcomes.
- identifies and records the possible outcomes of simple experiments using concrete materials (for example, spinners, marbles in a bag, coin toss).

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- determines which outcomes are most likely to occur in certain situations (for example, spinning red is most likely to occur when the spinner is divided equally among red, blue, green, and red).
- designs appropriate questions for a survey.
- creates a pictograph or bar graph to present data from a given survey and explains the results.
- uses statistical data to recognize trends and make and explain generalizations.



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