

**FLORIDA SUNSHINE STATE STANDARDS GRADE LEVEL EXPECTATIONS  
KINDERGARTEN  
TOUCHMATH KITS**

	KINDERGARTEN SET	1ST GRADE SET	2ND GRADE SET	UPPER GRADES SET
A1	X			
A2	X			
A3				
A4				
A5				
A6	X			
A7				
A8	X			
A9				
A10				
A11	X			
A12	X			
A13				
A14				
A15	X			
A16				
A17				
A18	X			
A19				
A20				
B1				
B2				
B3				
B4				
B5				
B6				
B7				
B8				
B9				
B10				
B11				
B12				
B13				
B14				
B15	X			
B16				
B17				
B18	X			
C1	X			
C2				
C3				
C4				
C5	X			
C6				
C7				
C8				
C9	X			
C10	X			
C11				
D1				
D2	X			
D3	X			
D4				
D5				
D6				
D7				
D8				
D9	X			
E1				
E2				
E3				
E4				
E5				
E6				
E7				
E8				
E9				

**FLORIDA SUNSHINE STATE STANDARDS GRADE LEVEL EXPECTATIONS**  
**1ST GRADE (page 1)**  
**TOUCHMATH KITS**

	KINDERGARTEN SET	1ST GRADE SET	2ND GRADE SET	UPPER GRADES SET
A1		X		
A2		X		
A3				
A4				
A5				
A6		X		
A7		X		
A8		X		
A9				X
A10		X		
A11		X		
A12				
A13				X
A14				X
A15		X		X
A16		X		
A17		X		
A18				
A19		X		X
A20		X		
A21				
A22				
A23				
A24				
A25				
A26				
A27				
A28				
A29				
A30				
B1				
B2				
B3				
B4		X		
B5				
B6				
B7				
B8				
B9				
B10				
B11		X		
B12		X		
B13				
B14				
B15		X		
C1		X		
C2				
C3				
C4				
C5				
C6				
C7		X		
C8				
C9				
C10				
D1				
D2				
D3				
D4				
D5				
D6				
D7				
D8				
D9		X		
D10				
D11				



































**FLORIDA SUNSHINE STATE STANDARDS GRADE LEVEL EXPECTATIONS  
TOUCHMATH UPPER GRADES 2007**

Grades 3&4	NS1.1	NS1.2	NS1.3	NS1.4	NS2.1	NS2.2	NS3.1	NS3.2	NS3.3	NS4.1	M1.1	M1.2	AT1.1	AT1.2	AT2.1
M&D1															
1-3							X								
4-14									X						
15-16							X		X						
17														X	
18													X		
19-20									X				X		
21-22				X					X						
23-28									X						
29							X		X				X	X	
30-37									X						
38-39							X		X						
40														X	
41													X		
42-43									X				X		
44-45				X					X						
46-51									X						
52							X		X				X	X	
53-60									X						
61-62							X		X						
63														X	
64													X		
65-66									X				X		
67-68				X					X						
69-74									X						
75							X		X				X	X	
76-83									X						
84-85							X		X						
86														X	
87													X		
88-89									X				X		
90-91				X					X						
92-97									X						
98							X		X				X	X	
99-106									X						
107-108							X		X						
109														X	
110													X		
111-112									X				X		
113-114				X					X						
115-120									X						
121							X		X				X	X	
122-129									X						
130-131							X		X						
132														X	
133													X		
134-135									X				X		
136-137				X					X						
138-143									X						
144							X		X						
155														X	
156													X		















**Florida  
Sunshine State Standards  
Grade Level Expectations  
Mathematics Kindergarten**

**A. Number Sense, Concepts, and Operations**

1. counts up to 10 or more objects using verbal names and one-to-one correspondence.
2. reads and writes numerals to 10 or more.
3. knows that cardinal numbers indicate quantity and ordinal numbers indicate position.
4. uses numbers and pictures to describe how many objects are in a set (to 10 or more).
5. uses language such as before or after to describe relative position in a sequence of whole numbers on a number line up to 10 or more (for example, 4 is before 5, 5 is after 4).
6. compares two or more sets (up to 10 objects in each set) and identifies which set is equal to, more than, or less than the other.
7. uses sets of concrete materials to represent quantities, to 10 or more, given in verbal or written form.
8. uses concrete materials to represent fractional parts of a whole (one half, one fourth).
9. represents equivalent forms of the same number, up to 10 or more, through the use of concrete materials (for example, 5 can be represented as  $1+4$ ,  $2+3$ ,  $0+5$ ; five pennies equal one nickel and ten pennies equal one dime).
10. counts orally to 100 or more by 1s, 2s, 5s, and 10s using a hundred chart or concrete materials.
11. uses concrete materials, pictures, and numerals to show the concept of numbers to 10 or more.
12. counts backward from ten to one.
13. groups objects in sets of 2 or more.
14. knows the relationships between larger numbers and smaller numbers.
15. demonstrates and describes the effect of putting together and taking apart sets of objects (for example, 3 cubes and 4 cubes is 7 cubes).
16. creates and acts out number stories using objects.
17. knows strategies for solving number problems.
18. demonstrates an awareness of addition and subtraction in everyday activities (using concrete objects, models, drawings, role playing).
19. estimates and verifies by counting sets that have more, fewer, or the same number of objects (for example, using a reference set of objects, comparing cards with different numbers of dots, estimating whether sets are more or less than a given number such as five).
20. builds models to show that numbers are odd or even (up to 10).

**B. Measurement**

1. knows how to communicate measurement concepts.
2. measures length of objects and distance using nonstandard concrete materials.
3. weighs objects to explore concepts of heavier and lighter.
4. describes concepts of time (for example, before or after, day or night).
5. describes concepts of temperature (for example, hot or cold).
6. compares and demonstrates the concept of capacity (for example, full or empty).
7. uses nonstandard objects, such as cubes, marbles, paper clips, and pencils, to measure classroom objects (for example, table length is 10 crayons or four pencils).
8. uses direct (side-by-side) comparisons to sort and order objects by their lengths.
9. uses indirect comparisons to compare lengths of objects that cannot be physically compared (side-by-side) (for example, compares height of counters in classroom and cafeteria by using string or in reference to child's own body).
10. compares and orders classroom objects by their weights, determining which objects weigh more, less, or about the same.
11. uses uniform nonstandard units to measure common classroom objects.
12. uses nonstandard units to estimate, and verifies by measuring, the length and width of common classroom objects.
13. knows the time of day as day or night; morning, afternoon, or evening; and yesterday, today, or tomorrow.
14. knows which of two daily activities takes more or less time.
15. knows and compares the values of a penny (1 cent), nickel (5 cents), and dime (10 cents).
16. uses nonstandard units appropriately (for example, pencil, cubes, scoops of rice).
17. knows various measuring tools for measuring length, weight, or capacity.
18. knows ways to measure time, including calendar, days, weeks, months, and days of week.

**Florida  
Sunshine State Standards  
Grade Level Expectations  
Mathematics Kindergarten**

**C. Geometry and Spatial Sense**

1. knows two-dimensional shapes (for example, circles, squares, rectangles, triangles), describing similarities and differences.
2. sorts three-dimensional objects by varied attributes or according to their geometric shapes (for example, cubes, spheres, cylinders, cones).
3. recognizes symmetry in the environment and uses concrete materials to make symmetrical figures (for example, paper fold, paint blot).
4. matches objects to outlines of their shapes.
5. knows spatial relationships (for example, in or out; above or below; over or under; top, bottom, or middle).
6. identifies left and right hand.
7. follows directions to move or place an object in relation to another (for example, next to, to the right of).
8. uses concrete objects to explore slides and turns.
9. recognizes, compares, and sorts real-world objects or models of solids.
10. knows the attributes of circles, squares, triangles, and rectangles (for example, edges, corners, curves).
11. locates known and unknown numbers on a number line from 0 to 10 or more (for example, finding what number you are on if you move 2 numbers forward or 3 numbers back).

**D. Algebraic Thinking**

1. identifies simple patterns of sounds, physical movements, and concrete objects.
2. sorts and classifies objects by color, shape, size, or kind.
3. identifies objects that do not belong to a particular group (for example, blue lid in set of red lids).
4. predicts and extends existing patterns using concrete materials.
5. uses concrete objects to create a pattern.
6. transfers patterns from one medium to another (for example, actions, sounds, or concrete objects).
7. knows that symbols can be used to represent missing or unknown quantities (for example, fill in the missing number in 5, 6, ., 8,).
8. uses informal methods, such as pictures, concrete materials, and role playing, to solve real world problems.
9. uses one-to-one matching to determine if two groups are equal.

**E. Data Analysis and Probability**

1. displays answers to simple questions involving two categories or choices using concrete materials or pictures on a graph or chart (for example, in a class, number of boys and girls, students with buttons and students with no buttons).
2. interprets data exhibited in concrete or pictorial graphs.
3. uses concrete materials, pictures, or graphs to show range and mode (for example, on a human, block, or picture graph showing number of brother and sisters, range is from zero to highest number of siblings; mode is number of siblings most common in class).
4. collects, displays data, and makes generalizations (for example, determines number of pockets on 5 children; predicts how many 10 students or the whole class will have).
5. knows the likelihood of a given situation (for example, Could a lion come visit you? Will we have school tomorrow? Will it rain today?).
6. participates in games or activities dependent upon chance (for example, using spinners or number cubes).
7. knows if a given event is more likely, equally likely, or less likely to occur (for example, chicken nuggets or pizza for lunch in the cafeteria).
8. displays the answer to a simple class question with two categories using concrete materials, a pictograph, or chart (for example, hot or cold; wings or no wings).
9. determines through class discussions questions for a simple two-choice survey so that the collected information will answer the questions.

**Florida  
Sunshine State Standards  
Grade Level Expectations  
Mathematics First Grade**

**A. Number Sense, Concepts, and Operations**

1. uses one-to one correspondence to count objects to 100 or more.
2. reads and writes numerals to 100 or more.
3. uses ordinal numbers 1st - 10th or higher.
4. compares and orders whole numbers to 100 or more using concrete materials, drawings, number lines, symbols ( $<$ ,  $=$ ,  $>$ ), and vocabulary such as equal to, more than, or less than.
5. represents real-world applications of whole numbers, to 100 or more, using concrete materials, drawings, and symbols.
6. represents, explains, and compares fractions (one half, one fourth, three fourths) as part of a whole and part of a set using concrete materials, drawings, and real-life situations.
7. knows that the total of equivalent fractional parts makes a whole (for example, two halves equal one whole).
8. represents equivalent forms of the same number, up to 20 or more, through the use of concrete materials (including coins), diagrams, and number expressions (for example, 16 can be represented as  $8+8$ ,  $10+6$ ,  $4+4+4+4$ ,  $20-4$ ,  $17-1$ ).
9. counts orally to 100 or more by 2s, 5s, and 10s with or without a hundred chart.
10. uses concrete materials, pictures, and symbols to show the grouping and place value of numbers to 100 or more.
11. counts forward and backward by one beginning with any number less than 100.
12. counts forward by tens from any number less than 10 using a hundred chart.
13. knows place value patterns and uses zero as a place holder (for example, trading 10 ones for 1 ten).
14. knows the place value of a designated digit in whole numbers to 100.
15. demonstrates knowledge of the meaning of addition (putting together, increasing) and subtraction (taking away, comparing, finding the difference) using manipulatives, drawings, symbols, and story problems.
16. solves basic addition facts using concrete objects and thinking strategies, such as count on, count back, doubles, doubles plus one, and make ten.
17. describes the related facts that represent a given fact family up to 18 (for example,  $9+3=12$ ,  $12-9=3$ ,  $12-3=9$ ).
18. knows how to use the commutative and associative properties of addition in solving problems and basic facts.
19. adds and subtracts two-digit numbers without regrouping (sums to 100) using models, concrete materials, or algorithms.
20. poses and solves simple number problems by selecting the proper operation (for example, finding how many students are sitting at tables one and two).
21. uses concrete objects to solve number problems with one operation.
22. describes thinking when solving number problems.
23. writes number sentences associated with addition and subtraction situations.
24. knows appropriate methods (for example, concrete materials, mental mathematics, paper and pencil) to solve real-world problems involving addition and subtraction.
25. uses a calculator to explore addition, subtraction, and skip counting.
26. uses the language of estimation and approximation to identify and describe numbers in real-world situations (for example, about, near, closer to, between).
27. estimates the number of objects, explains the reasoning for the estimate, and checks the reasonableness of the estimate by counting.
28. makes reasonable estimates when comparing larger or smaller quantities.
29. estimates reasonable answers to basic facts (e.g., Will  $7+8$  be more than 10?).
30. demonstrates and builds models to show the difference between odd and even numbers using concrete objects or drawings.

**Florida  
Sunshine State Standards  
Grade Level Expectations  
Mathematics First Grade**

**B. Measurement**

1. knows how to communicate measurement concepts.
2. demonstrates an understanding of measurement of lengths by selecting appropriate units of measurement (for example, inches or feet).
3. demonstrates an understanding of weight by selecting appropriate units of measurement (for example, grams or kilograms).
4. demonstrates an understanding of time using digital and analog clocks (for example, hour and half-hour intervals).
5. demonstrates an understanding of temperature using thermometers.
6. demonstrates an understanding of capacity by selecting appropriate units of measurement (for example, cups, pints, quarts, liters).
7. measures length, weight, or capacity of an object using standard and nonstandard units (for example, pounds, grams, or wooden blocks).
8. uses nonstandard, customary, and metric units to measure, compare, and order objects according to their lengths or weights.
9. knows that a uniform unit is needed to measure in real-world situations (for example, length, weight, time, capacity).
10. estimates, measures, and compares dimensions of an object.
11. estimates and measures the passage of time using before or after; yesterday, today, or tomorrow; day or night; morning, afternoon, or evening; hour or half-hour.
12. knows and compares money values, including the quarter (25 cents), half-dollar (50 cents), and dollar (100 cents).
13. selects and uses an appropriate nonstandard unit to measure length, weight, time, and capacity.
14. knows appropriate standard tools for measuring linear dimensions, weight, capacity, and temperature.
15. knows appropriate tools (clocks and calendar) for measuring time (including days, weeks, months).

**C. Geometry and Spatial Sense**

1. knows attributes of two- and three-dimensional figures (for example, vertices, edges).
2. sorts two- and three-dimensional figures according to their attributes.
3. understands lines of symmetry in two-dimensional shapes (for example, paper folding, ink blot pictures, mirrors).
4. knows shapes that can be combined to form other shapes (for example, using pattern blocks, six triangles make a hexagon).
5. uses concrete materials to demonstrate slides, turns, and reflections.
6. follows directions to move or place an object and describes the relationship of objects using positional language (for example, over, to the left of).
7. compares and sorts two-dimensional and three-dimensional real-life objects.
8. knows geometric shapes in real-life situations.
9. compares, describes, and sorts objects according to attributes (for example, corners, curves, faces).
10. locates and explains known and unknown numbers on a number line from 0 to 100 or more.

**Florida  
Sunshine State Standards  
Grade Level Expectations  
Mathematics First Grade**

**D. Algebraic Thinking**

1. identifies, describes, and compares patterns using a wide variety of materials and attributes (for example, size, shape, color).
2. describes a pattern rule.
3. explores number patterns on a hundred chart and with a calculator.
4. predicts and extends existing patterns that are concrete or pictorial.
5. uses one attribute to create a pattern (for example, thick or thin, open or closed).
6. transfers patterns from one medium to another (for example, concrete objects to actions or symbols).
7. predicts, extends, and creates patterns
8. identifies and generates patterns in a list of related number pairs based on real-life situations (for example, T-chart with number of children to number of eyes).

Number of Children	Number of Eyes
1	2
2	4

9. solves addition and subtraction sentences where an unknown number is represented by a geometric shape (for example,  $2 + \square = 9$ ).
10. uses concrete objects to solve number sentences with equalities and inequalities (using the symbols  $>$ ,  $=$ ,  $<$ ).
11. uses concrete objects to solve real-world addition and subtraction problems using one unknown (for example, There are 28 children in this class, and 25 are here today. How many are absent?).

**E. Data Analysis and Probability**

1. surveys a small group to answer a simple question involving two categories or choices (for example, students who bring lunches or students who buy lunches).
2. uses mathematical language to read and interpret data on a simple concrete graph, pictorial graph, or chart.
3. uses concrete materials, pictures, or graphs to display data and identify range and mode.
4. discusses a reasonable prediction for a large group using data from a small group.
5. uses a calculator to compare data and explores computer graphing software.
6. knows the likelihood of a given situation (for example, snowing in South Florida).
7. explains if an event is certain, probable, or impossible.
8. discusses results of games and activities dependent upon chance.
9. knows if a given event is more likely, equally likely, or less likely to occur (for example, six blue marbles and two green marbles in a bag).
10. constructs appropriate questions for a class survey, in a whole group setting.
11. analyzes results of a survey as part of a class discussion.
12. explains appropriate methods to display and interpret information.

**Florida  
Sunshine State Standards  
Grade Level Expectations  
Mathematics Second Grade**

**A. Number Sense, Concepts, and Operations**

1. reads and writes numerals to 1000 or more.
2. reads and writes number words to “twenty” or higher.
3. understands and uses ordinal numbers 1st - 100th or higher.
4. compares and orders whole numbers to 1000 or more using concrete materials, drawings, number lines, symbols (<, =, >), and vocabulary such as more than, equal to, or less than.
5. represents real-world applications of whole numbers, to 1000 or more, using concrete materials, drawings, and symbols.
6. represents, compares, and explains halves, thirds, quarters, and eighths as part of a whole and part of a set, using concrete materials, drawings, and real-life situations.
7. knows that the total of equivalent fractional parts makes a whole (for example, eight eighths equal one whole).
8. represents equivalent forms of the same number through the use of concrete materials (including coins), diagrams and number expressions.
9. counts to 1000 or more by 2s, 3s, 5s, 10s, 25s, 50s and 100s using a variety of ways, such as mental mathematics, paper and pencil, hundred chart, calculator, and coins in various increments.
10. demonstrates the place value groupings of numbers to 1000 or more using concrete materials, pictures, and symbols.
11. counts by tens from any given number less than 1000.
12. counts forward or backward by one beginning with any number less than 1000.
13. counts coins using “mixed” counting (using coin values of 50, 25, 10, 5, and 1).
14. counts and groups objects into hundreds, tens, and ones, and relates the groupings to the corresponding written numeral (for example, 4 groups of 100, 2 groups of ten, and 6 ones is 426).
15. knows place value patterns using zero as a place holder (for example, trading 10 tens for 100).
16. knows the place value of a designated digit in whole numbers to 1000.
17. recalls (from memory) the addition facts and corresponding subtraction facts.
18. knows the related facts that represent the inverse relationships between addition and subtraction.
19. predicts the relative size of solutions in addition and subtraction (for example, adding two whole numbers results in a number that is larger than either of the two original numbers).
20. adds and subtracts two-digit numbers with or without regrouping using models, concrete materials, and algorithms.
21. demonstrates knowledge of multiplication (for the repeated addition and array models) using manipulatives, drawings, and story problems.
22. demonstrates knowledge of division (for the repeated subtraction and partitive models) using manipulatives, drawings, and story problems.
23. solves problems involving addition and subtraction using a variety of strategies (such as drawings, role playing, and working backward) and explains the solution strategy.
24. writes and solves number problems with one operation involving addition or subtraction.
25. writes number sentences associated with addition and subtraction situations.
26. knows appropriate methods (for example, concrete materials, mental mathematics, paper and pencil, calculator) to solve real-world problems involving addition and subtraction.
27. chooses and explains the computing method that is more appropriate (that is faster, more accurate, easier) for varied real-world tasks (for example, recall of basic facts is faster than using a calculator whereas recording data from survey results may be easier with a calculator).
28. makes predictions of quantities of objects (to 50 or more) and explains the reasoning supporting that prediction (for example, the number of pieces of candy in a large jar may be estimated by finding the number of pieces in a small jar and estimating how many small jars would fill the larger one).
29. estimates reasonable solutions for addition and subtraction problems (sums to 100) and explains the procedure used (for example, the sum of 34 and 57 is more than 80 since  $30 + 50$  is 80).
30. knows reasonable and unreasonable estimates.
31. demonstrates and explains the difference between odd and even numbers using concrete objects or drawings.

**Florida  
Sunshine State Standards  
Grade Level Expectations  
Mathematics Second Grade**

**B. Measurement**

1. knows how to communicate measurement concepts.
2. demonstrates an understanding of customary and metric measurement of length and distance, selecting appropriate units of measurement (for example, inches, feet, yards, centimeters, meters).
3. demonstrates an understanding of customary and metric measurement of weight by selecting appropriate units of measurement (for example, ounces, pounds, grams, kilograms).
4. demonstrates an understanding of time using digital and analog clocks (for example, quarter-hour, five-minute intervals).
5. demonstrates an understanding of temperatures using Fahrenheit and Celsius thermometers.
6. demonstrates an understanding of capacity by using appropriate units of measurement (for example, ounces, cups, pints, quarts, gallons, liters, milliliters).
7. measures length, weight, and capacity of objects using standard and nonstandard units.
8. uses nonstandard methods, and customary and metric units to measure, compare, and order objects according to their lengths, weights, or capacities.
9. knows that a standard unit of measure is used in real-world situations to describe the measure of an object (for example, length, weight, time, capacity).
10. estimates, measures, and compares distances.
11. knows the passage of time using minutes, half-hours, and hours.
12. knows and compares amounts of money in coins, to one dollar or more.
13. selects and uses an appropriate nonstandard unit to measure length, distance, weight, time, and capacity.
14. knows appropriate standard tools for measuring linear dimensions, weight, capacity, and temperature.
15. knows appropriate tools (clocks and calendar) for measuring time (including days, weeks, months, and years).

**C. Geometry and Spatial Sense**

1. describes attributes of two- and three-dimensional shapes using mathematical language (for example, curves, vertices, edges, faces, angles).
2. sorts two- and three-dimensional figures according to their attributes.
3. knows the names of both two-dimensional and three-dimensional figures presented in various orientations in the environment.
4. describes symmetry in two-dimensional shapes.
5. determines lines of symmetry of two-dimensional shapes by using concrete materials.
6. knows congruent shapes.
7. identifies shapes that can be combined or separated (for example, a rectangle can be separated into two triangles).
8. predicts the reflection of a given two-dimensional shape.
9. identifies and demonstrates slides, flips, and turns of simple figures using concrete materials.
10. compares and contrasts two- and three-dimensional real-life objects (for example, circle and sphere, square and cube, triangle and pyramid, rectangle and rectangular solid).
11. describes and classifies two-dimensional shapes and three-dimensional geometric objects according to the number of bases, faces, edges, and vertices.
12. locates and explains known and unknown numbers to 1000 or more on a number line.
13. locates and identifies the coordinate points of objects on a coordinate grid (first quadrant).

**D. Algebraic Thinking**

1. recognizes that patterning results from repeating an operation, using a transformation, or making some other change to an attribute.
2. describes a given pattern and explains the pattern rule.
3. identifies number patterns using a hundred chart or a calculator.
4. predicts, extends, and creates patterns that are concrete, pictorial or numerical.
5. combines two attributes in creating a pattern (for example, size and color).
6. transfers patterns from one medium to another (for example, pictorial to symbolic).
7. identifies patterns in the real-world (for example, repeating, rotational, tessellating, and patchwork).
8. identifies and generates patterns in a list of related number pairs based on real-life situations (for example, T-chart with number of tricycles to number of wheels).

Number of Tricycles	Number of Wheels
1	3
2	6
9. explains generalizations of patterns and relationships.
10. solves a variety of number sentences where the missing number is represented by a geometric shape (for example,  $10 = 6$ ).
11. solves a variety of number sentences with equalities and inequalities (using the symbols  $>$ ,  $=$ ,  $<$ ).
12. uses concrete objects, paper and pencil, or mental mathematics to solve real-world equations with one unknown (such as, There are 28 students in the room, and 16 brought their lunches. How many are buying lunch?).

**Florida  
Sunshine State Standards  
Grade Level Expectations  
Mathematics Second Grade**

**E. Data Analysis and Probability**

1. poses questions and collects data to answer questions with two, three, or more categories or choices (for example, favorite ice cream, left handed/right handed).
2. uses mathematical language to read and interpret data on a simple concrete graph, pictorial graph, or chart.
3. uses concrete materials, pictures, graphs, or tally marks to display data and identify range, mode, and median.
4. predicts the outcome for a larger population by analyzing data from a smaller group.
5. uses a calculator to compare data.
6. constructs a graph using computer software.
7. knows if an event is certain, probable, or impossible.
8. records results of activities involving chance and makes predictions based upon data (for example, coin flips, number cube rolls, bean toss on area divided into unequal portions).
9. knows if a given event is equally likely, most likely, or least likely to occur (for example, spinners, coin toss, election results).
10. collects data for two or more categories and creates a line graph, pictograph, or chart to display results.
11. analyzes and explains orally or in writing the results from a survey.
12. determines questions for a survey with two, three, or more categories so that the collected information will be relevant to the questions.
13. knows appropriate methods to display and interpret information.

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

**A. Number Sense, Concepts, and Operations**

1. reads, writes, and identifies whole numbers through hundred thousands or more.
2. reads, writes, and identifies proper fractions with denominators including 2, 3, 4, 5, 6, 8, 10, and 100.
3. reads, writes, and identifies decimal notation in the context of money.
4. compares and orders whole numbers through hundred thousands or more, using concrete materials, number lines, drawings, numerals, language and symbols ( $>$ ,  $<$ ,  $=$ ).
5. compares and orders commonly used fractions, including halves, thirds, fourths, fifths, sixths and eighths, using concrete materials.
6. translates problem situations into diagrams and models using whole numbers, fractions, and decimal notation in the context of money.
7. uses concrete materials to model equivalent forms of whole numbers and common fractions.
8. knows that two numbers in different forms are equivalent or non-equivalent, using whole numbers, fractions, and decimals in the context of money.
9. knows the value of a given digit in whole numbers to hundred thousands, including writing and interpreting expanded forms of numbers.
10. knows that the value of each place is 10 times that of the place to its right ( for example,  $1,000 = 10 \times 100$ ).
11. compares the decimal (base 10) number system to the Roman numeral system using the Roman numerals I, V, X, L, and C.
12. explains and demonstrates the addition and subtraction of whole numbers (up to three digits or more) using concrete materials, drawings, symbols, and algorithms.
13. explains the inverse relationship of addition and subtraction and demonstrates that relationship by writing related fact families.
14. explains and demonstrates the meaning of multiplication (for the repeated addition, array, and area models) using manipulatives, drawings, number sentences, and story problems.
15. 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.
16. solves multiplication basic facts using various strategies including the following:
  - a. modeling with concrete objects or drawings
  - b. skip counting, for example, to find  $4 \times 5$ , count 5, 10, 15, 20
  - c. using doubles and near doubles, such as  $3 \times 8 = (2 \times 8) + 8$
  - d. applying the commutative property of multiplication, such as  $7 \times 3 = 3 \times 7$
  - e. applying the distributive property of multiplication, such as  $8 \times 7 = (8 \times 5) + (8 \times 2)$
  - f. noting and applying patterns in the “facts tables,” such as the regularity in the “nines”
  - g. using the zero and identity properties of multiplication
17. explains the inverse relationship of multiplication and division and writes related fact families.
18. 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).
19. writes number sentences for given situations involving the addition, subtraction, multiplication, and division of whole numbers.
20. uses problem-solving strategies to determine the operation needed to solve one-step problems involving addition, subtraction, multiplication, and division of whole numbers.
21. explains the reasonableness of answers.
22. 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).
23. explains the reason for choosing a particular computing method for a particular problem..
24. solves real-world multiplication problems with whole numbers (two digits by one digit) using concrete materials, drawings, and paper and pencil.
25. solves real-world division problems having divisors of one digit, dividends not exceeding two digits, with or without remainders.
26. uses estimation strategies to determine a reasonable estimate of a quantity.
27. estimates quantities of objects to 250 or more (for example, using a benchmark or reference set of fewer objects).
28. chooses estimation strategies (for example, front-end, rounding) in real-world problem situations and explains the choice.
29. uses a model to determine factors of whole numbers through 100 (for example, array).
30. uses tables and charts to determine multiples of whole numbers 1-10 (for example, hundred chart, calendar).

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

**B. Measurement**

1. knows measurement concepts and uses oral and written language to communicate them.
2. 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).
3. knows about measurement of time, including using A.M. and P.M., clocks, and calendars.
4. knows temperature scales using thermometers.
5. solves real-world problems involving measurement using concrete and pictorial models for the following:
  - a. length (for example, half-inch, centimeter)
  - b. weight (for example, pound, kilogram)
  - c. time (fifteen-, five-, and one-minute intervals)
  - d. capacity (for example, cup, liter)
  - e. temperature (Fahrenheit and Celsius)
  - f. angles (right)
6. solves real-world problems involving perimeter, area, and volume using concrete materials or pictures.
7. uses schedules, calendars, and elapsed time in hour intervals to solve real-world problems.
8. calculates and compares measurable characteristics using manipulatives (for example, creates a meter using centimeter cubes).
9. 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).
10. uses customary and metric units to compare length, weight, and capacity.
11. 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).
12. knows an appropriate unit of measure (standard or nonstandard) to measure weight, temperature, and capacity.
13. knows how to determine whether an accurate or estimated measurement is needed for a solution.
14. using real-world settings, objects, graph paper, or charts, solves problems involving estimated measurements, including the following:
  - a. length to nearest inch, centimeter
  - b. weight to nearest pound, kilogram
  - c. time to nearest half-hour interval
  - d. temperature to nearest five-degree interval
  - e. money to nearest \$1 or \$10 (combination of coin and currency)
15. 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.
16. selects an appropriate measurement unit for labeling the solution to real-world problems.
17. selects and uses the appropriate tool for situational measures (for example, measuring sticks, scales and balances, thermometers, measuring cups).

**C. Geometry and Spatial Sense**

1. uses appropriate geometric vocabulary to describe two- and three-dimensional figures (for example, parallel and perpendicular lines, quadrilateral, right angle).
2. draws and classifies two-dimensional figures having up to six or more sides.
3. uses appropriate geometric vocabulary to describe properties of two-dimensional figures.
4. uses manipulatives to solve problems requiring spatial visualization.
5. knows symmetry, congruency, and reflections in geometric figures using concrete materials (for example, pattern blocks, geoboards, mirrors).
6. knows congruent and similar figures.
7. knows the effects of flips, slides, and 180o turns using concrete and graphic materials (for example, pattern blocks, geoboards, dot paper).
8. explores tessellations.
9. compares the concepts of area and perimeter through the use of concrete and graphic materials (for example, geoboards, color tiles, grid paper).
10. 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).
11. knows how to identify, locate, and plot ordered pairs of whole numbers on a graph.

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

**D. Algebraic Thinking**

1. identifies missing parts in patterns.
2. describes, extends, and creates numerical and geometric patterns through models (for example, concrete objects, drawings, simple number sequences).
3. poses and solves problems by identifying a predictable visual or numerical pattern (for example: Continue this pattern: +, -, =, +, +, -, -, \_\_\_\_, \_\_\_\_, ...).
4. knows mathematical relationships in patterns (for example, the second number is two more than the first).
5. analyzes number patterns and states the rule for relationships (for example, 2, 4, 6, 8, ...; the rule: +2).
6. discusses and explains the choice of the rule that applies to the pattern.
7. identifies and extends a pattern according to the given rule.
8. 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
9. uses concrete materials to model and solve a number sentence with a missing addend for simple word problems (for example,  $13 + r = 15$ ).
10. creates a simple word problem for a given number sentence, diagram, or model.
11. 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).
12. uses physical models and graphs (for example, cubes, number lines) to solve real-world equations and inequalities.
13. uses information from physical models and graphs to solve problems.

**E. Data Analysis and Probability**

1. identifies different parts of a graph (for example, titles, labels, key).
2. interprets and compares information from picto- and bar graphs including graphs from content-area materials and periodicals.
3. generates questions, collects responses, and displays data in a table, pictograph or bar graph.
4. interprets and explains orally and in writing displays of data.
5. uses concrete materials to determine the mean in a set.
6. identifies the range, median, and mode in a set of numerical data.
7. uses concrete materials, pictures, or graphs to display data and identify range, median, and mode.
8. uses a calculator to compare data.
9. in class projects, constructs and discusses patterns in computer-generated graphs using real-world problems (for example, identify most popular pizza topping).
10. 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).
11. represents all possible outcomes for a particular probability situation or event using models such as charts or lists
12. calculates the probability of an event occurring from a set of all possible outcomes.
13. identifies and records the possible outcomes of simple experiments using concrete materials (for example, spinners, marbles in a bag, coin toss).
14. 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).
15. designs appropriate questions for a survey.
16. creates a pictograph or bar graph to present data from a given survey and explains the results.
17. uses statistical data to recognize trends and make and explain generalizations.

**Florida  
Sunshine State Standards  
Grade Level Expectations  
Mathematics Fourth Grade**

- A. Number Sense, Concepts, and Operations
1. reads, writes, and identifies whole numbers through millions or more.
  2. reads, writes, and identifies fractions and mixed numbers with denominators including 2, 3, 4, 5, 6, 8, 10, 12, 20, 25, 100, and 1000.
  3. reads, writes, and identifies decimals through hundredths.
  4. uses language and symbols ( $>$ ,  $<$ ,  $=$ ) to compare numbers in the same form and in two different forms such as  $\_ < 1$ .
  5. compares and orders whole numbers through millions or more, using concrete materials, drawings, and numerals.
  6. compares and orders commonly used fractions and decimals to hundredths using concrete materials, drawings, and numerals.
  7. locates whole numbers, fractions, mixed numbers, and decimals on a number line.
  8. translates problem situations into diagrams and models using whole numbers, fractions, mixed numbers and decimals to hundredths including money notation.
  9. uses concrete materials to model equivalent forms of whole numbers, fractions, and decimals.
  10. knows that two numbers in different forms are equivalent or non-equivalent, using whole numbers, decimals, fractions, and mixed numbers.
  11. knows the value of a given digit in numbers from hundredths to millions, including writing and interpreting expanded forms of numbers.
  12. uses concrete materials and symbolic notation to represent numbers in bases other than base ten, such as base five.
  13. reads, writes, and compares the decimal number system to the Roman numeral system using the Roman numerals I, V, X, L, C, D, and M.
  14. recalls (from memory) basic multiplication facts and related division facts.
  15. knows the inverse relationship of multiplication and division and demonstrates that relationship by writing related fact families.
  16. explains and demonstrates the multiplication and division of whole numbers using manipulatives, drawings, and algorithms.
  17. explains and demonstrates the addition and subtraction of common fractions using concrete materials, drawings, story problems, and algorithms.
  18. explains and demonstrates the addition and subtraction of decimals (to hundredths) using concrete materials, drawings, story problems, and algorithms.
  19. knows the properties of numbers including the following:
    - a. the identity, commutative, and associative properties of addition
    - b. the zero and identity properties of multiplication
    - c. the commutative, associative, and distributive properties of multiplication.
  20. predicts the relative size of solutions in:
    - a. addition, subtraction, multiplication, and division of whole numbers.
    - b. addition and subtraction of common fractions.
    - c. addition and subtraction of decimals to hundredths.
  21. uses problem-solving strategies to determine the operation(s) needed to solve one- and two-step problems involving addition, subtraction, multiplication, and division of whole numbers, and addition and subtraction of decimals and fractions.
  22. solves real-world problems involving addition, subtraction, multiplication, and division of whole numbers, and addition and subtraction of decimals and fractions using an appropriate method (for example, mental math, pencil and paper, calculator).
  23. explains the reason for choosing a particular computing method for a particular problem.
  24. solves real-world multiplication problems with whole numbers (three digits by one digit) using concrete materials, drawings, and pencil and paper.
  25. solves real-world division problems having divisors of one digit and dividends of three digits, with and without remainders.
  26. solves real-world problems involving the addition or subtraction of decimals (to hundredths) or common fractions with like and unlike denominators.
  27. chooses, describes and explains estimation strategies used to determine the reasonableness of solutions to real-world problems.
  28. estimates quantities of objects to 500 or more and justifies and explains the reasoning for the estimates (for example, using compatible numbers, benchmark numbers, unitizing).
  29. multiplies by multiples of 10, 100 and 1,000 recognizing and demonstrating patterns.
  30. knows rules of divisibility for 2, 3, 5, 9, and 10.
  31. uses models to identify perfect squares to 100.

**Florida  
Sunshine State Standards  
Grade Level Expectations  
Mathematics Fourth Grade**

**B. Measurement**

1. knows measurement concepts and uses oral and written language to communicate them.
2. uses a wide variety of models (for example, manipulatives, diagrams) and applies counting procedures to investigate measurements of length, area, volume, and perimeter.
3. knows about varied time intervals, including decades, hours, minutes, and seconds.
4. investigates angle measures using models and manipulatives for the common angles of  $45^\circ$ ,  $90^\circ$ , and  $180^\circ$  (straight angle) and uses these angles as reference points for measures of other angles.
5. solves real-world problems involving measurement of the following:
  - a. length (for example, millimeter, quarter-inch, foot, yard, meter)
  - b. weight (for example, pounds, ounces, kilograms, grams)
  - c. capacity (for example, cup, milliliters)
  - d. temperature (Fahrenheit and Celsius)
  - e. angles (right and straight)
6. solves real-world problems involving perimeter, area, and volume using concrete, graphic, or pictorial models.
7. uses schedules, calendars, and elapsed time to solve real-world problems.
8. devises nonstandard, indirect ways to compare lengths (for example, compare the height of a cylinder to the distance around it).
9. uses customary and metric units to compare length, weight, and capacity or volume.
10. uses multiplication or division to convert units of measure within either the customary or metric system (for example:  $100\text{ cm} = 1\text{ m}$ ).
11. knows an appropriate unit of measure to determine the dimension(s) of a given object (for example, standard - student chooses feet or inches instead of yards to measure a classroom desk; nonstandard - student chooses a pencil or his or her hand to measure a classroom desk).
12. knows an appropriate unit of measure (standard or nonstandard) to measure weight, temperature, and capacity.
13. knows how to determine whether an accurate or estimated measurement is needed for a solution.
14. using real-world settings, objects, graph paper, or charts, solves problems involving estimated measurements, including the following:
  - a. length to nearest half-inch, centimeter
  - b. weight to nearest ounce, gram
  - c. time to nearest five-minute interval
  - d. temperature to nearest five-degree interval
  - e. money to nearest \$1.00 (combination of coin and currency)
15. knows how to estimate the area and perimeter of regular and irregular polygons using graph paper, geoboard, or other objects and how to estimate the volume of a rectangular prism, using manipulatives or graphic representation.
16. selects an appropriate measurement unit for labeling the solution to real-world problems.
17. selects and uses the appropriate tool for situational measures (for example, measuring sticks, scales and balances, thermometers, measuring cups, gauges).

**Geometry and Spatial Sense**

1. uses appropriate geometric vocabulary to describe properties and attributes of two- and three-dimensional figures (for example, faces, edges, vertices, diameter).
2. draws and classifies two-dimensional figures having up to eight or more sides.
3. uses manipulatives to solve problems requiring spatial visualization.
4. knows symmetry, congruency, and reflections in geometric figures using drawings and concrete materials (for example, pattern blocks, mirrors).
5. knows and creates congruent and similar figures.
6. knows the effects of flips, slides, and turns ( $90^\circ$ ,  $180^\circ$ ) using concrete and graphic materials (for example, pattern blocks, geoboards, grid paper).
7. explores tessellations.
8. compares the concepts of area and perimeter using concrete materials (for example, color tiles, grid paper) and real-world situations (for example, carpeting a floor, fencing a yard).
9. applies the concepts of area and perimeter to solve real-world and mathematical problems.
10. knows how area and perimeter are affected when geometric figures are combined.
11. knows how to identify, locate, and plot ordered pairs of whole numbers on a graph or on the first quadrant of a coordinate system

**Florida  
Sunshine State Standards  
Grade Level Expectations  
Mathematics Fourth Grade**

**Algebraic Thinking**

1. describes, extends, and creates numerical and geometric patterns using a variety of models (for example, lists, tables, charts).
2. poses, solves, and explains problems by identifying a predictable visual or numerical pattern such as:

Input	1	2	3	7
Output	\$3	\$6	\$9	?
3. knows mathematical relationships in patterns (for example, the second shape is the first shape turned 90°).
4. analyzes number patterns and states rules for relationships (for example, 2, 4, 7, 9, 12, ...; the rule: +2, +3, +2, +3, ...).
5. discusses, explains, and analyzes the rule that applies to the pattern.
6. applies the appropriate rule to complete a table or a chart such as:

Input	Output
2	8
9	36
?	16
7	28
7. solves problems involving equations or simple inequalities using manipulatives, diagrams, or models, symbolic expressions, or written phrases.
8. uses a variable to represent a given verbal expression (for example, seven times a number is  $7n$ ).
9. translates problem-solving situations into expressions and equations using a variable for the unknown.
10. uses physical or pictorial models and graphs (for example, cubes, number lines) to solve equations or inequalities

**Data Analysis and Probability**

1. knows the purpose of different parts of a graph (for example, titles, labels, intervals, key).
2. chooses reasonable titles and labels for graphs.
3. interprets and compares information from different types of graphs including graphs from content-area materials and periodicals.
4. generates questions, collects responses, and displays data on a pictograph, circle graph, bar, double bar, or line graph.
5. interprets and completes circle graphs using common fractions.
6. analyzes and explains orally or in writing the implications of data displays.
7. identifies the mean, median and mode from a set of data.
8. identifies the range on a line graph.
9. uses a calculator to determine the range and mean of a set of data.
10. uses computer applications to examine and evaluate data and to construct graphs.
11. determines the number of possible combinations of given items and displays them in an organized way.
12. represents all possible outcomes for a simple probability situation or event using models such as organized lists, charts, or tree diagrams.
13. calculates the probability of a particular event occurring from a set of all possible outcomes.
14. identifies and records, using common fractions, the possible outcomes of simple experiments using concrete materials (for example, spinners, number cubes, coin toss).
15. conducts experiments to test predictions.
16. designs a class survey to collect data.
17. creates an appropriate graph to display data (for example, pictographs, bar graphs, line graphs, circle graphs).
18. determines appropriate statistical measures for data (range, mean, median, and mode).
19. explains the results using statistics (range and measures of central tendency)
20. uses statistical data to identify trends, and to make and justify generalizations.

**Florida  
Sunshine State Standards  
Grade Level Expectations  
Mathematics 5th Grade**

**Number Sense, Concepts, and Operations**

1. reads, writes, and identifies whole numbers, fractions, mixed numbers, and decimals through thousandths
2. reads, writes, and identifies common percents including 10%, 20%, 25%, 30%, 40%, 50%, 60%, 70%, 75% , 80%, 90%, and 100%
3. compares and orders whole numbers, commonly used fractions, percents, and decimals to thousandths using concrete materials, number lines, drawings, numerals, and symbols ( $>$ ,  $<$ ,  $=$ )
4. translates problem situations into diagrams, models, and numerals using whole numbers, fractions, mixed numbers, decimals, and percents
5. knows that numbers in different forms are equivalent or nonequivalent, using whole numbers, decimals, fractions, mixed numbers, and percents
6. knows that place value relates to powers of 10
7. expresses numbers to millions or more in expanded form using powers of ten, with or without exponential notation
8. explains the similarities and differences between the decimal (base 10) number system and other number systems that do or do not use place value
9. explains and demonstrates the multiplication of common fractions using concrete materials, drawings, story problems, symbols, and algorithms
10. explains and demonstrates the multiplication of decimals to hundredths using concrete materials, drawings, story problems, symbols, and algorithms
11. predicts the relative size of solutions in the following:
  - a. addition, subtraction, multiplication, and division of whole numbers
  - b. addition, subtraction, and multiplication of fractions, decimals, and mixed numbers, with particular attention given to fraction and decimal multiplication (for example, when two numbers less than one are multiplied, the result is a number less than either factor)
12. explains and demonstrates the inverse nature of multiplication and division, with particular attention to multiplication by a fraction (for example, multiplying by  $\frac{1}{4}$  yields the same result as dividing by 4)
13. explains and demonstrates the commutative, associative, and distributive properties of multiplication
14. uses problem-solving strategies to determine the operation(s) needed to solve one- and two-step problems involving addition, subtraction, multiplication, and division of whole numbers, and addition, subtraction, and multiplication of decimals and fractions
15. solves real-world problems involving addition, subtraction, multiplication, and division of whole numbers, and addition, subtraction, and multiplication of decimals, fractions, and mixed numbers using an appropriate method (for example, mental math, pencil and paper, calculator)
16. chooses, describes, and explains estimation strategies used to determine the reasonableness of solutions to real-world problems
17. estimates quantities of objects to 1000 or more and justifies and explains the reasoning for the estimate (for example, using benchmark numbers, unitizing)
18. finds factors of numbers to 100 to determine if they are prime or composite
19. expresses a whole number as a product of its prime factors
20. determines the greatest common factor or the least common multiple of two numbers up to 100 or more
21. multiplies by powers of 10 (100, 1,000, and 10,000) demonstrating patterns
22. identifies and applies rules of divisibility for 2, 3, 4, 5, 6, 9, and 10
23. uses models to identify perfect squares to 144

**Florida  
Sunshine State Standards  
Grade Level Expectations  
Mathematics 5th Grade**

**Measurement**

1. knows measurement concepts and uses oral and written language to communicate them
2. knows varied units of time that include centuries and seconds and uses schedules, calendars, and elapsed time to solve real-world problems
3. classifies angle measures as acute, obtuse, right, or straight
4. investigates measures of circumference using concrete materials (for example, uses string or measuring tape to measure the circumference of cans or bottles)
5. solves real-world problems involving measurement of the following:
  - a. length (for example, eighth-inch, kilometer, mile)
  - b. weight or mass (for example, milligram, ton)
  - c. temperature (comparing temperature changes within the same scale using either a Fahrenheit or a Celsius thermometer)
  - d. angles (acute, obtuse, straight)
6. solves real-world problems involving perimeter, area, capacity, and volume, using concrete, graphic or pictorial models and extends conceptual experiences into patterns to develop formulas for determining perimeter, area, and volume
7. finds the length or height of “hard-to-reach” objects by using the measure of a portion of the objects (for example, find the height of a room or building by finding the height of one block or floor and multiplying by the number of blocks or floors)
8. uses customary and metric units to compare length, weight or mass, and capacity or volume
9. uses multiplication and division to convert units of measure within the customary or metric system
10. knows an appropriate unit of measure (standard or nonstandard) to measure length, weight, and capacity
11. knows how to determine whether an accurate or estimated measurement is needed for a solution
12. solves real-world problems involving estimated measurements, including the following:
  - a. length to nearest quarter-inch, centimeter
  - b. weight to nearest ounce, gram
  - c. time to nearest one-minute interval
  - d. temperature to nearest five-degree interval
  - e. money to nearest \$1.00
13. knows how to estimate the area and perimeter of regular and irregular polygons and how to estimate the volume of a rectangular prism
14. selects an appropriate measurement unit for labeling the solution to real-world problems
15. selects and uses the appropriate tool for situational measures (for example, measuring sticks, scales and balances, thermometer, measuring cups, gauges, protractors)

**Geometry and Spatial Sense**

1. uses appropriate geometric vocabulary to describe properties and attributes of two- and three-dimensional figures (for example, obtuse and acute angles, radius, equilateral, scalene, and isosceles triangles.)
2. draws and classifies two-dimensional figures having ten or more sides and three-dimensional figures (cubes, rectangular prisms, pyramids)
3. knows the characteristics of and relationships among points, lines, line segments, rays, and planes
4. uses manipulatives to solve problems requiring spatial visualization
5. knows symmetry, congruency, and reflections in geometric figures
6. knows how to justify that two figures are similar or congruent
7. knows the effect of a flip, slide or turn (90o, 180o, 270o) on a geometric figure
8. explores tessellations
9. compares the concepts of area, perimeter, and volume using concrete materials (for example, geoboards, grid paper) and real-world situations (for example, tiling a floor, bordering a room, packing a box)
10. applies the concepts of area, perimeter, and volume to solve real-world and mathematical problems using student-developed formulas
11. knows how area and perimeter are affected when geometric figures are combined, rearranged, enlarged, or reduced (for example, What happens to the area of a square when the sides are doubled?)
12. identifies, locates, and plots ordered pairs of whole numbers on a graph or on the first quadrant of a coordinate system

**Florida  
Sunshine State Standards  
Grade Level Expectations  
Mathematics 5th Grade**

**Algebraic Thinking**

- describes, extends, creates, predicts, and generalizes numerical and geometric patterns using a variety of models (for example, lists, tables, graphs, charts, diagrams, calendar math)
- poses and solves problems by identifying a predictable visual or numerical pattern such as:  

Day	1	2	3	4 ...	$n$
Number of Calls	4	7	10	?	?
- explains and expresses numerical relationships and pattern generalizations, using algebraic symbols (for example, in the problem above, the number of calls on the  $n$ th day can be expressed as  $3n+1$ )
- knows mathematical relationships in patterns (for example, Fibonacci numbers: 1, 1, 2, 3, 5, 8,...)
- analyzes and generalizes number patterns and states the rule for relationships (for example, 1, 4, 9, 16, ...; the rule: +3, +5, +7, ...; or "squares of the whole numbers")
- applies the appropriate rule to complete a table or a chart, such as:  

IN	1	2	3	9
OUT	1	4	9	?
- solves problems involving simple equations or inequalities using concrete or pictorial models, symbolic expressions, or written phrases
- uses a variable to represent a given verbal expression (for example, 5 more than a number is  $n + 5$ )
- translates equations into verbal and written problem situations

**Data Analysis and Probability**

- knows which types of graphs are appropriate for different kinds of data (for example, bar, line, or circle graphs)
- interprets and compares information from different types of graphs including graphs from content-area materials and periodicals
- generates questions, collects responses, and displays data on a graph
- creates an appropriate graph to display data, including titles, labels, scales, and intervals
- interprets and completes circle graphs using common fractions or percents
- analyzes and explains orally or in writing the implications of graphed data
- uses a stem-and-leaf plot from a set of data to identify the range, median, mean, and mode
- uses range and measures of central tendency in real-world situations
- uses a calculator to determine the range and mean of a set of data
- uses computer applications (including spreadsheets) to record, display, examine, and evaluate data and to construct labeled graphs
- determines the number of possible combinations of given items and displays them in an organized way
- represents all possible outcomes for a simple probability situation or event using models such as , organized lists, charts, or tree diagrams
- calculates the probability of a particular event occurring from a set of all possible outcomes
- identifies and records the possible outcomes of an experiment using concrete materials (for example, spinners, marbles, number cubes)
- conducts experiments to test predictions
- designs a survey to collect data
- as a class project, discusses ways to choose a sample representative of a large group such as a sample representative of the entire school
- applies statistical data to predict trends and to make and justify generalizations

**Florida  
Sunshine State Standards  
Grade Level Expectations  
Grade Levels: 3 - 4**

**Number Sense, Concepts and Operations Standard 1** – The student understands the different ways numbers are represented and used in the real world.

1. names whole numbers combining three-digit numeration (hundreds, tens, ones) and the use of number periods, such as ones, thousands, and millions and associates verbal names, written word names, and standard numerals with whole numbers, commonly used fractions, decimals, and percents.
2. understands the relative size of whole numbers, commonly used fractions, decimals, and percents.
3. understands concrete and symbolic representations of whole numbers, fractions, decimals, and percents in real-world situations.
4. understands that numbers can be represented in a variety of equivalent forms using whole numbers, decimals, fractions, and percents.

**Number Sense, Concepts and Operations Standard 2** – The student understands number systems.

1. uses place-value concepts of grouping based upon powers of ten (thousandths, hundredths, tenths, ones, tens, hundreds, thousands) within the decimal number system.
2. recognizes and compares the decimal number system to the structure of other number systems such as the Roman numeral system or bases other than ten.

**Number Sense, Concepts and Operations Standard 3** – The student understands the effects of operations on numbers and the relationships among these operations, selects appropriate operations, and computes for problem solving.

1. understands and explains the effects of addition, subtraction, and multiplication on whole numbers, decimals, and fractions, including mixed numbers, and the effects of division on whole numbers, including the inverse relationship of multiplication and division.
2. selects the appropriate operation to solve specific problems involving addition, subtraction, and multiplication of whole numbers, decimals, and fractions, and division of whole numbers.
3. Adds, subtracts, and multiplies whole numbers, decimals, and fractions, including mixed numbers, and divides whole numbers to solve real-world problems, using appropriate methods of computing, such as mental mathematics, paper and pencil, and calculator.

**Number Sense, Concepts and Operations Standard 4** – The student uses estimation in problem solving and computation.

1. uses and justifies different estimation strategies in a real-world problem situation and determines the reasonableness of results of calculations in a given problem situation.

**Measurement Standard 1** – The student measures quantities in the real world and uses the measures to solve problems.

1. uses concrete and graphic models to develop procedures for solving problems related to measurement including length, weight, time, temperature, perimeter, area, volume, and angle.
2. solves real-world problems involving length, weight, perimeter, area, capacity, volume, time, temperature, and angles.

**Algebraic Thinking Standard 1** – The student describes, analyzes, and generalizes a wide variety of patterns, relations, and functions.

1. describes a wide variety of patterns and relationships through models, such as manipulatives, tables, graphs, rules using algebraic symbols.
2. generalizes a pattern, relation, or function to explain how a change in one quantity results in a change in another.

**Algebraic Thinking Standard 2** – The student uses expressions, equations, inequalities, graphs, and formulas to represent and interpret situations.

1. represents a given simple problem situation using diagrams, models, and symbolic expressions translated from verbal phrases, or verbal phrases translated from symbolic expressions, etc.