

MATHEMATICS First Grade

VALUES AND ATTITUDES	The student will: Understand there is a definite sense of order in God's world. Realize God's universe is composed of appropriate spacing, measurement and geometric designs. Use visualization, spatial reasoning, and geometric modeling. Understand patterns, relations, and functions. Use varied methods for analyzing data. Understand God wants us to reason with our minds. Develop mathematical knowledge through problem solving.
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STRAND A Number Sense, Numeration, and Numerical Operations

OBJECTIVE
Read, write, and model numbers <ul style="list-style-type: none">• Rote count by 1's, 2's, 5's and 10's to 100.• Introduce even and odd numbers.• Read and write numerals to 100.• Read number words zero to twenty.• Use ordinal numbers first through tenth.• Group and count objects by 2's, 5's, and 10's.• Regroup or join sets and restate as addition facts.• Identify equal and unequal numerals and sets.• Represent numbers in a variety of ways.• Group objects into 10's and 1's.• Identify the number of tens and ones when given a two-digit number.• Identify or write a two-digit number when given the number of tens and ones.• Develop concept of fractions of $\frac{1}{2}$, $\frac{2}{3}$, $\frac{1}{3}$, $\frac{1}{4}$. Computation <ul style="list-style-type: none">• Count using one-to-one correspondence to 30.• Make sets and match numerals up to 30.• Compare and order sets and numerals up to 100 by using the symbols for less than, equal to, or greater than (<, =, >). Addition and subtraction. <ul style="list-style-type: none">• Identify one more/less/before/after/between.• Model concept of addition; know the combinations for sums to 20.• Memorize addition and subtraction facts to 20.• Memorize addition doubles, e.g., 5+5; 6+6.• Model concept of subtraction as take-away comparison, and missing addends.• Relate addition and subtraction to symbolic notation.

- Write addition and subtraction equations.
- Use counting strategies to find sums and differences using counting strategies.
- Model 10 more/less to 100.
- Model 2-digit addition/subtraction with multiples of 10 to 100.
- Create and solve problems using addition and subtraction.
- Identify and know the value of coins and show different combinations of coins that equal the same value. Use penny, nickel, dime and quarter.
- Solve word problems using currency.
- Identify math situations occurring in children's literature.
- Use mathematical applications in social studies in graphs and tables.

Estimation strategies in computation and problem solving.

- Estimate quantities up to 30 and recognize reasonable solutions to problems.

STRAND B Spatial Sense, Measurement, and Geometry

OBJECTIVE

Geometric shapes

- Recognize, identify, and describe plane geometric figures: circle, square, triangle, rectangle and diamond.
- Recognize plane geometric figures: hexagon, trapezoid, and parallelogram.
- Recognize basic three-dimensional (solid) figures: sphere, cube, cylinder and cone.
- Identify open and closed figures.
- Identify symmetry; congruency (same size, same shape)
- Describe and compare characteristics of geometric figures.
- Copy a shape when given a simple pattern.
- Construct three-dimensional shapes with manipulatives.
- Identify shapes in nature, art, and architecture.

Measurement

- Identify equal and unequal measures and regions.
- Divide regions into two, three, and four equal parts.
- Use non-standard units to estimate, measure, and compare length, weight, and capacity of two objects; record results.
- Use calendar language appropriately, e.g., seasons and months of the year, today, yesterday, tomorrow.
- Use manipulatives to determine lengths of objects.
- Compare and contrast inch, foot and yard; centimeters, meters
- Solve spatial visualization puzzles and tasks.
- Solve problems involving non-standard measurement.
- Compare volume, length and weight of objects by comparison or nonstandard units of measure.
- Tell time to nearest hour using digital and analog clocks.
- Tell time to the nearest half hour and relate to everyday occurrences, e.g., school begins at 8:30.
- Introduce and use nonstandard units to measure area, weight and volume.

- Introduce cup, pint, quart, gallon, liter.

Relative position of geometric objects in space.

- Classify familiar plane and solid objects by common attributes, e.g., color, shape, size. Explain choice/use of particular attributes.
- Use directional and positional words (NC2.05), e.g., near, far, below, behind, inside, outside, above or under.
- Use mathematical applications in social studies in map skills.

STRAND C Patterns, Algebra, and Functions

OBJECTIVE

Describe and compare objects by attributes; order sets.

- Sort a set of objects in more than one way.
- Create, copy, continue, and record patterns.
- Identify and name the pattern or numerical sequence.
- Identify and correct errors in repeating patterns.
- Use addition/subtraction to continue a number pattern.
- Identify rhythmic patterns in music and show relationship to visual patterns.
- Write and solve number sentences from problem situations that express relationships involving addition and subtraction.
- Understand the meaning of the symbols +, -, =.
- Create problem situations that might lead to given number sentences involving addition and subtraction.

STRAND D Data Analysis, Probability and Statistics

OBJECTIVE

Gather, organize and display information as a group activity.

- Sort data by common attributes and describe categories.
- Answer questions about charts and graphs.
- Compare data by attributes using pictures, graphs or tallies.
- Make predictions based on experience.
- Create graphs using grids.
- Write a group story problem using information from a graph.

STRAND E Mathematical Reasoning

OBJECTIVE

Determine approach and strategies to solve a problem.

- Model problems with drawings, models or plans.
- Develop generalizations between problems and determine how this helps solve similar problems.
- Interpret results, explain reasoning and justify procedure using mathematical language and/or symbols.
- Make calculations and check validity from context of the problem.