Strand A: Number Sense, Concepts, and Operations

Standard 1: The student understands the different ways numbers are represented and used in the real world.

Benchmarks
MA.A. 1.1.1a Associates verbal names and standard numerals with the whole numbers less than 20.
MA.A. 1.1.1b Uses objects to complete one-to-one correspondence and conservation of number tasks.
MA.A. 1.1.2 Understands the relative size of whole numbers between 0 and 20.
MA.A. 1.1.3 Uses objects to represent whole numbers and relates these numbers to real-world situations.

Standard 2: The student understands number systems.

Benchmarks
MA.A. 2.1.1 Understands and applies the concepts of counting and grouping with whole numbers between 0 and 20.
MA.A. 2.1.2 Identifies and extends patterns.

Standard 3: The student understands the effects of operations on numbers and the relationship among these operations, selects appropriate operations, and computes for problem solving.

Benchmark
MA.A. 3.1.1 Uses manipulatives to understand and explain addition and subtraction.

Strand C: Geometry and Spatial Sense

Standard 2: The student visualizes and illustrates ways in which shapes can be combined, subdivided, and changed.

Benchmark
MA.C. 2.1.1 Constructs mental and physical images of common geometric figures when given pictures, words, and real-world objects.

Strand D: Algebraic Thinking

Standard 1: The student describes, analyzes and generalizes a wide variety of patterns, relations, and functions.

Benchmarks
MA.D.1.1.1a Reasons logically to classify and sort physical objects and events according to attributes such as sound, color, texture, size, and sequence of events.
MA.D. 1.1.1b Creates and describes various classification schemes related to physical characteristics, sensory attributes, or numeral and geometric concepts.
MA.D. 1.1.2 Extends and creates patterns using rhythm, sound, shape, color, number, and similar objects or events.

Standard 2: The student uses expressions, equations, inequalities, graphs, and formulas to represent and interpret situations.

Benchmark
MA.D. 2.1.1 Manipulates objects to solve problem situations where one addend is unknown, not using numerical representation.

Strand E: Data Analysis and Probability

Standard 1: The student understands and uses the tools of data analysis for managing information.

Benchmarks
MA.E. 1.1.1 Builds and discusses graphs made from physical objects.
MA.E. 1.1.2 Uses information on a graph to answer relevant questions.
MA.E. 1.1.3 Describes and discusses graphs and their value in communicating information.
Standard 3: The student uses statistical methods to make inferences and valid arguments about real-world situations.

Benchmark
MA.E. 3.1.1 Collects, classifies, and organizes data using activities familiar to children.

MATH – First Grade

Strand A: Number Sense, Concepts, and Operations

Standard 1: The student understands the different ways numbers are represented and used in the real world.

Benchmarks
MA.A. 1.1.1 Associates verbal names and standard numerals with whole numbers through 100.
MA.A. 1.1.2 Understands the relative size of whole numbers between 0 and 100.
MA.A. 1.1.3 Uses objects to represent whole numbers and fractions and relates numbers to real-world situations.
MA.A. 1.1.4 Understands that whole numbers can be represented in a variety of equivalent forms.

Standard 2: The student understands numbers systems.

Benchmarks
MA.A. 2.1.1 Understands and applies the concepts of counting, (by 2s, 5s, 10s), grouping, place value with whole numbers between 0 and 50.
MA.A. 2.1.2 Makes and extends patterns and states the rule for a given pattern.

Standard 5: The student understands and applies theories related to numbers.

Benchmark
MA.A. 5.1.1 Classifies and models numbers as even or odd.

Strand B: Measurement

Standard 3: The student estimates measurements in real-world problem situations.

Benchmark
MA.B. 3.1.1 Uses a variety of strategies to estimate length, widths, time intervals, and money: and compares them to actual measurements.

Strand C: Geometry and Spatial Sense

Standard 1: The student describes, draws, identifies, and analyzes two- and three-dimensional shapes.

Benchmark
MA.C. 1.1.1 Sorts and classifies basic two- and three-dimensional shapes and identifies the attributes used for the classification.

Standard 3: The student uses coordinate geometry to locate objects in both two and three dimensions and to describe objects algebraically.

Benchmark
MA.C. 3.1.1 Associates names for common geometric figures with real-world objects and drawings.

Strand D: Algebraic Thinking

Standard 1: The student describes, analyzes, and generalizes a wide variety of patterns, relations, and functions.

Benchmarks
MA.D. 1.1.1a Reasons logically to classify and sort physical objects and events according to attributes such as sound, color, texture, size, and sequence of events.
MA.D. 1.1.1b Creates and describes various classification schemes related to physical characteristics, sensory attributes, or numeral and geometric concepts.
MA.D. 1.1.2 Extends patterns and creates new patterns using sensory attributes, physical characteristics or numerical and geometric concepts.

Standard 2: The student uses expressions, equations, inequalities, graphs, and formulas to represent and interpret situations.

Benchmark
MA.D. 2.1.2 Uses informal methods to solve real-world problems requiring simple equations that contain one variable.
Strand E: Data Analysis and Probability

Standard 1: The student understands and uses the tools of data analysis for managing information.

Benchmarks
MA.E. 1.1.1 Builds and displays pictographs and block graphs using data collected from student activities.
MA.E. 1.1.2 Displays data in a simple model to use the concepts of range and mode.
MA.E. 1.1.3 Collects and organizes data and discusses the information shown on the graph or chart.

Standard 3: The student uses statistical methods to make inferences and valid arguments about real-world situations.

Benchmark
MA.E. 3.1.1 Designs a simple experiment to answer a class question, collects appropriate information, interprets the results using graphical displays of information, such as line graphs, pictographs, bar graphs, and charts.

MATH – Second Grade

Strand A: Number Sense, Concepts, and Operations

Standard 1: The student understands the way numbers are represented and used in the real world.

Benchmark
MA.A. 1.1.3 Uses objects to represent whole numbers or commonly used fractions and relates these numbers to real-world situations.

Standard 2: The student understands numbers systems.

Benchmarks
MA.A. 2.1.1 Understands and applies the concepts of counting, grouping, and place value with whole numbers between 0 and 100.
MA.A. 2.1.2 Uses number patterns and relationships among counting, grouping, and place value strategies to demonstrate an understanding of the whole number system.

Standard 5: The student understands and applies theories related to numbers.

Benchmark
MA.A. 5.1.1 Classifies and models numbers as even or odd.

Strand B: Measurement

Standard 3: The student estimates measurements in real-world problem situations.

Benchmark
MA.B. 3.1.1 Using a variety of strategies, estimates lengths, widths, time intervals and money and compares them to actual measurements.

Strand C: Geometry and Spatial Sense

Standard 1: The student describes, draws, identifies, and analyzes two- and three-dimensional shapes.

Benchmark
MA.C. 1.1.1 Understands and describes the characteristics of basic two- and three-dimensional shapes.

Standard 3: The student uses coordinate geometry to locate objects in both two and three dimensions and to describe objects algebraically.

Benchmark
MA.C. 3.1.1 Uses real-life experiences and physical materials to describe, classify, compare, and sort geometric figures, including squares, rectangles, triangles, circles, cubes, rectangular solids, spheres, pyramids, cylinders, and prisms, according to the number of faces, edges, bases, and corners.
### Strand D: Algebraic Thinking

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

**Benchmarks**
- MA.D. 1.1.1 Describes a wide variety of classification schemes and patterns related to physical characteristics and sensory attributes, such as rhythm, sound, shapes, colors, numbers, similar objects, similar events.
- MA.D. 1.1.2 Recognizes, extends, generalizes, and creates a wide variety of patterns and relationships using symbols and objects.

### Strand E: Data Analysis and Probability

**Standard 1:** The student understands and uses the tools of data analysis for managing information.

**Benchmarks**
- MA.E. 1.1.1 Displays solutions to problems by generating, collecting, organizing, and analyzing data using simple graphs and charts.
- MA.E. 1.1.2 Displays data in a simple model to use the concepts of range, median, and mode.

**Standard 3:** The student uses statistical methods to make inferences and valid arguments about real-world situations.

**Benchmark**
- MA.E. 3.1.1 Designs simple experiments to answer class questions, collects appropriate information, interprets results using graphical displays of information such as line graphs, pictographs, bar graphs, and charts.

### MATH – Third Grade

### Strand A: Number Sense, Concepts, and Operations

**Standard 1:** The student understands the way numbers are represented and used in the real world.

**Benchmarks**
- MA.A. 1.2.2 Determines the relative size of whole numbers less than 1000 using language experience, manipulatives, and number lines.
- MA.A. 1.2.3 Translates relevant problem situations involving common fractions into diagrams or models.
- MA.A. 1.2.4 Represents equivalent forms of common fractions and decimals to tenths, using models, number lines, and diagrams.

**Standard 3:** The student understands the effects of operations on numbers and the relationship among these operations, selects appropriate operations, and computes for problem solving.

**Benchmark**
- MA.A. 3.2.2 Writes number sentences associated with addition, subtraction, multiplication, and division by building models, drawing diagrams, and acting out problem situations.

### Strand D: Algebraic Thinking

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

**Benchmark**
- MA.D. 1.2.1 Describes number and geometric patterns through models such as manipulatives, tables or graphs, and by stating a rule that describes the underlying numeric or geometric relationship.

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

**Benchmark**
- MA.D. 2.2.2 Uses physical objects and numerical situations to show the meaning of equality and inequality and uses the appropriate symbolism.

### Strand E: Data Analysis and Probability

**Standard 1:** The student understands and uses the tools of data analysis for managing information.

**Benchmark**
- MA.E. 1.2.1a Collects and classifies data from real-world problems.
MATH – Fourth Grade

**Strand A: Number Sense, Concepts, and Operations**

Standard 1: The student understands the different ways numbers are represented and used in the real world.

**Benchmark**

M.A.A. 1.2.4 The student understands that numbers can be represented in a variety of equivalent forms using whole numbers, decimals, fractions, and percents.

Standard 5: The student understands and applies theories related to numbers.

**Benchmark**

M.A.A. 5.2.1 Understands and applies basic number theory concepts, including primes, composites, factors, and multiples.

**Strand B: Measurement**

Standard 3: The student estimates measurements in real-world problem situations.

**Benchmark**

M.A.B. 3.2.1b Solves real-world consumer problems involving estimates of change and bills/coins needed using drawings and play money.

**Strand C: Geometry and Spatial Sense**

Standard 1: The student describes, draws, identifies, and analyzes two- and three-dimensional shapes.

**Benchmark**

M.A.C. 1.2.1a Identifies and describes attributes of common two- and three-dimensional figures drawing representations and using appropriate language such as parallel sides, symmetric, congruent, similar, and perpendicular.

**Strand D: Algebraic Thinking**

Standard 1: The student describes, analyzes, and generalizes a wide variety of patterns, relations, and functions.

**Benchmarks**

M.A.D. 1.2.1 Describes number and geometric patterns through models, such as manipulatives, tables, graphs, and by stating a rule that describes the underlying numerical or geometric relationship.

M.A.D. 1.2.2 Explains the effects of a change in one quantity on a pattern, relation, or function.

**Strand E: Data Analysis and Probability**

Standard 1: The student understands and uses the tools of data analysis for managing information.

**Benchmark**

M.A.E. 1.2.1 Communicates mathematical ideas and real-world data through appropriate graphs, including histograms, bar graphs, circle graphs, line graphs, pictographs, and charts.

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