

CORE BODY OF KNOWLEDGE

Math-First Grade

Subject Area - Mathematics

Standard Area - 2.1: Numbers, Number Systems and Number Relationships

Grade Level - 2.1.1: GRADE 1

2.1.1.A: Demonstrate the relationship between numbers and quantities, including place value and one-to-one correspondence, and compare values of whole numbers up to 100 and beyond, to include values of money.

2.1.1.B: Represent equivalent forms of the same number through the use of concrete objects (including money), drawings, word names, and symbols up to 100 and beyond.

2.1.1.C: Use concrete objects, drawings, diagrams or models to demonstrate the concept of part-whole relationships.

2.1.1.D: Apply place value concepts and base-ten numeration to order and compare whole numbers up to 100.

2.1.1.E: Describe even and odd numbers as they relate to a number pattern.

2.1.1.F: Select the appropriate operation (addition or subtraction) to solve problems.

Standard Area - 2.2: Computation and Estimation

Grade Level - 2.2.1: Grade 1

2.2.1.A: Apply concepts of addition and subtraction to solve problems up to ten.

2.2.1.B: Demonstrate strategies for addition and subtraction in order to solve single- and double-digit addition and subtraction problems.

2.2.1.D: Estimate values, sums, and differences of quantities and conclude the reasonableness of those estimates.

Standard Area - 2.4: Mathematical Reasoning and Connections

Grade Level - 2.4.1: Grade 1

2.4.1.A: Draw conclusions and describe thought process (es) (e.g., think aloud) related to problem solving situations.

2.4.1.B: Describe situations using precise language of logic (e.g., all, or, every, none, some, or, many.)

Standard Area - 2.5: Mathematical Problem Solving and Communication

Grade Level - 2.5.1: Grade 1

2.5.1.A: Solve the problem and check if answer makes sense. Explain how problem is solved in grade appropriate contexts.

2.5.1.B: Use appropriate mathematical vocabulary when explaining how to solve a problem.

NUMBERS AND OPERATIONS: ANCHORS

***M3.A.1** *Demonstrate and understanding of numbers, ways of representing numbers, relationships among numbers, and number systems*

- *Read and write the teen numbers as a group of 10 and some left over*
- *Count groups of 10 up to 10 tens*
- *Count and write numbers to 100*
- *Count sets that are grouped in 10s and left over ones*
- *Use a group of ten to estimate quantities of 100*
- *Skip count by 2s, 5s, 10s, and find patterns*
- *Determine if a number is odd or even (number less than 60)*
- *Use ordinals through 20th to identify position*
- *Write a two digit number and write its expanded form*
- *Exchange a ten for 10 ones or 10 ones for a ten and write the new representation in expanded form*
- *Determine if a number is greater than, less than, or equal to*
- *Order three two digit numbers from least to greatest/ greatest to least*
- *Write a three digit number for a model of hundreds, tens, and ones*

***M3.A.1.2** *Use fractions to represent quantities as part of a whole or part of a set*

- *Divide a shape into equal or unequal parts and count the number of equal parts into which it has been divided*
- *Identify and show halves of a region*
- *Identify and show $\frac{1}{3}$ and $\frac{1}{4}$ of a region*
- *Identify and show $\frac{1}{2}$, $\frac{1}{3}$, or $\frac{1}{4}$ of a group of 2, 3, or 4 objects respectively*
- *Identify and show non-unit fractions of a region or set*

***M3.A.1.3** *Count, compare, and make change using a collection of coins and one dollar bills*

- *Identify the value of a group of nickels and pennies to 25 cents*
- *Identify the value of a group of dimes and pennies through 99 cents*
- *Identify the value of a group of dimes and nickels through 95 cents*
- *Identify the value of a group of dimes, nickels, and pennies through 99 cents*
- *Solve problems by using data from a table*
- *Identify a quarter and coins that have the same value*
- *Identify a dollar bill, a dollar coin, a half dollar coin, and combinations of coins worth amount up to one dollar*

***M3.A.3.** *Compute accurately and fluently and make reasonable estimates*

***M3.A.3.1** *Solve problems using addition, subtraction and multiplication*

- *Find how many in all in joining stories*
- *Identify the sum of two addends*
- *Write an additions sentence to find the sum in a joining situation*
- *Write an addition sentence using zero*
- *Write the sum for horizontal and vertical forms of addition*
- *Find out how many are left in joining stories*
- *Find the difference between two numbers*
- *Write a subtraction sentence*
- *Write a subtraction sentence using zero*
- *Write the differences for horizontal and vertical forms of subtraction*
- *Find how many more/many fewer in comparing sentences*
- *Use commutative property to find sums*
- *Write the addition and subtraction sentences that make up a fact family*
- *Find the differences by using known addition facts*

Standard Area - 2.3: Measurement and Estimation

Grade Level - 2.3.1: Grade 1

2.3.1.A: Identify characteristics that are measurable and compare objects according to those characteristics using appropriate vocabulary.

2.3.1.B: Use concrete objects to measure length by repeating and the number of nonstandard or standard units.

2.3.1.C: Tell time on an analog and digital clock to the nearest hour and half hour.

MEASUREMENT: ANCHORS

***M3.B.1** *Demonstrate an understanding of measurable attributes of objects and figures and the units systems and processes of measurement.*

- *Find the distance around a shape using inches*
- *Estimate, measure, and compare the capacities of containers*
- *Compare the capacity of containers to one liter*
- *Compare the capacities of cups, pints, and quarts*
- *Use grams and kilograms*

- *Use appropriate tools for measuring length, weight, capacity, and temperature*

***M3.B.2** *Apply appropriate techniques, tools, and formulas to determine measurements*

- *Use non-standard units to estimate, measure, and compare lengths of objects*
- *Solve by using logical reasoning*
- *Use the nearest inch with a ruler*
- *Measure the length or height of objects to the nearest foot using a 12 inch ruler*
- *Use centimeters using a ruler*
- *Estimate, measure, and compare the weights of different objects*
- *Compare the weights of objects to one pound*

Standard Area - 2.9: Geometry

Grade Level - 2.9.1: Grade 1

2.9.1.A: Name, describe and draw/build 2-dimensional shapes

2.9.1.B: Identify and draw lines of symmetry.

Standard Area - 2.10: Trigonometry

Grade Level - 2.10.1: Grade 1

Standard Area - 2.11: Concepts of Calculus

Grade Level - 2.11.1: Grade 1

GEOMETRY: ANCHORS

***M3.C.1** *Analyze characteristics and properties of two and three dimensional geometric shapes and demonstrate understanding of geometric relationships.*

- *Identify and name standard and geometric solids and recognize them in the environment*
- *Count the number of flat surfaces and vertices on geometric solids*
- *Match a geometric solid to*
- *Identify plane shapes, (circle, triangle, circles squares)*

***M3.C.2** *Identify and/or apply concepts of transformations or symmetry*

- *Identify lines of symmetry*
- *Identify slides, flips, and turns*

Standard Area - 2.8: Algebra and Functions

Grade Level - 2.8.1: Grade 1

2.8.1.A Use the concept of equality and concrete objects to demonstrate understanding of the

commutative and associative properties.

2.8.1.B: Use concrete objects and trial and error to solve number sentences.

2.8.1.C: Recognize, describe, extend, replicate and transfer number and geometric patterns.

2.8.1.D: Use a rule to find a missing value and determine a rule for a given pattern.

2.8.1.E: Use concrete objects, symbols and numbers to represent mathematical situations.

ALGEBRAIC CONCEPTS : ANCHORS

***M3.D.1** *Demonstrate an understanding of patterns, relations and functions.*

- *Identify the pattern unit in a repeating pattern*
- *Translate shape patterns into letters*
- *Solve problems by using data from a picture*

Standard Area - 2.6: Statistics and Data Analysis

Grade Level - 2.6.1: Grade 1

2.6.1.A: Gather data from surveys and observations within the classroom or homes.

2.6.1.B: Organize and display data using pictures, tallies, charts, bar graphs and pictographs.

2.6.1.C: Describe data displayed in a diagram, graph or table.

2.6.1.D: Answer comparative questions based on representations of data.

2.6.1.E: Draw conclusions and identify patterns based on a comparison to data displayed in a graph.

Standard Area - 2.7: Probability and Predictions

Grade Level - 2.7.1: Grade 1

2.7.1.A: Determine the likelihood of an event occurring using words like certain, likely, unlikely or impossible.

2.7.1.B: Determine whether different outcomes of the same event are equally likely or not equally likely.

2.7.1.D: List or graph the possible results of an experiment.

2.7.1.E: Determine that there can be a difference between predicted and actual outcomes.

DATA/ANALYSIS: ANCHORS

***M3.E.3** *Understand and/or apply basic concepts of probability or outcomes*

- *Describe the likelihood of an event as certain or impossible*
- *Describe the likelihood of an event as more likely or less likely*