Minnesota Mathematics

Grade 2

Data Analysis

1 Data Sciences: Identify, formulate and investigate statistical questions by collecting data considering cultural perspectives, analyzing and interpreting data and communicating the results.

1 Notice and describe patterns in data-rich situations and create statistical investigative questions. (MP6, MP7) ☼ ✜ 2.1.1.1

2 Determine what counts as data to answer a statistical investigative question. Recognize that people collect data to answer questions and that data can vary. (MP1) ☼ 2.1.1.2

3 Collect and use data to consider and decide what data will answer a question. Represent the data as drawings, picture graphs, dot plots (a.k.a. line graphs or line plots) and with technology. Communicate observations. (MP3, MP5) # μ 2.1.1.3

4 Make predictions using patterns from data visualizations. (MP7, MP8) # μ 2.1.1.4

2 Chance and Uncertainty: Apply and explain the concepts of probability to interpret data, generate questions, predict and make informed decisions to solve problems and communicate ideas.

1 Describe the difference between possible and likely. (MP1, MP6) 2.1.2.1

Spatial Reasoning

3 Measurement: Investigate measurement using a variety of tools, units, systems, processes and techniques in various cultures. Explain and reason with attributes, estimations and formulas to communicate measurement(s) and relationships effectively. Justify decisions and consider the reasonableness of the measurement.

1 Estimate lengths using units of inches, feet, centimeters and meters. (MP2, MP5) ☼ ✜ 2.2.3.1

2 Measure to determine how much longer one object is than another, expressing the length difference in terms of a standard-length unit. Relate addition and subtraction to length. (MP5) ☼ 2.2.3.2

3 Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks and measuring tapes. (MP5, MP6) ✜ ☼ 2.2.3.3

4 Represent whole numbers as lengths from 0 on a number line with equally spaced points corresponding to the numbers 0, 1, 2, … Represent whole-number sums and differences, within 100, on a number line. (MP4, MP5) 2.2.3.4

Partition a rectangle into rows and columns of same-size squares and count the total number. (MP8) 2.2.3.5

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6 Use addition and subtraction, within 100, to solve contextual situations involving lengths that are given in the same units using drawings (such as rulers) and equations with a symbol for the unknown number to represent the situation. (MP1, MP4) $ 2.2.3.6

7 Identify pennies, nickels, dimes and quarters. Find the value of a group of coins and determine combinations of coins that equal a given amount, using $ and ¢ symbols appropriately. (MP7) $ 2.2.3.7

4 **Geometry: Analyze characteristics of geometric shapes to make mathematical arguments and justifications about geometric relationships. Use visualization and geometric modeling to compare, solve problems and communicate ideas.**

1 Classify two- and three-dimensional figures according to the number and shape of faces and the number of sides, edges and vertices. (MP1, MP2) ✜ ☼ 2.2.4.1

2 Create a representation for basic two-dimensional shapes such as squares, circles, triangles, rectangles, trapezoids and hexagons. (MP5, MP6) ☼ 2.2.4.2

3 Describe the location of an object in relation to another object. (MP1, MP6) ☼ 2.2.4.3

Patterns and Relationships

5 **Number Relationships: Describe/Interpret and use quantities, relationships between and representations of quantities and number systems. Describe and relate operations. Use strategies and procedures accurately, efficiently and flexibly. Assess the reasonableness of the results.**

1 Count collections of objects using groups of 10s and 100s to 1,000. Represent the counting strategy and the total using words, symbols and pictures. (MP1) ✜ $ ☼ 2.3.5.1

2 Read, write, compare, order and represent whole numbers up to 1,000. Representations may include numerals, expanded notation, addition, subtraction, multiplication, words, pictures, tally marks, number lines and manipulatives such as bundles of sticks, ten frames and base 10 blocks. (MP4) ✜ $ ☼ 2.3.5.2

3 Given a three-digit number, mentally find 10 more or 10 less and 100 more or 100 less than the number. Justify reasoning by referencing a model. (MP2, MP3) $ 2.3.5.3

4 Recognize and describe the place value of numbers between 10 and 1,000 as a relationship of groups of ten, hundreds and thousands plus an amount of a single digit. Know that 100 is 10 tens and a thousand is 10 hundreds or 100 tens. (MP4, MP7) $ 2.3.5.4

5 Estimate sums and differences of two-digit numbers. (MP1) $ 2.3.5.5

6 Use addition and subtraction, within 1,000, to solve contextual situations using concrete models or drawings based on place value, properties of operations and/or the relationship between addition and subtraction. Relate the strategy to a written method. (MP1, MP4) $ 2.3.5.6

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7 Use a range of strategies and algorithms based on knowledge of place value and equality to flexibly add and subtract two-digit numbers. Strategies may include decomposition, expanded notation and partial sums and differences. Use place value and properties of operations to explain why strategies works. (MP1, MP7) µ 2.3.5.7

8 Fluently add and subtract, within 20, using mental strategies that include incrementing, compensation or fact families. (MP7) $ 2.3.5.8

9 Use landmarks of 10 to fluently add to 100 and subtract from 100. (MP7) $ 2.3.5.9

10 Represent and solve contextual equal sharing situations where a whole number of items is shared equally among 2 or 4 groups. Name the fractional amount using the words “halves” and “fourths.” Recognize that equal shares of identical wholes need not have the same shape. (MP3, MP7) $ µ ☼ 2.3.5.10

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6 **Equivalence and Relational Thinking: Use concepts and properties of equivalence and relational thinking to represent and compare numerical expressions, proportional relationships, algebraic expressions and equations.**

1 Compare two- and three-digit numbers based on meanings of the hundreds, tens and ones digits. (MP2, MP7) ☼ 2.3.6.1

2 Use number sentences involving addition, subtraction and unknowns to represent given situations. Use the relationship of addition and subtraction to find values for the unknowns that make the number sentences true. (MP4) $ ☼ 2.3.6.2

3 Make conjectures and justifications involving subtraction and addition with true/false and open number equations. (MP3) $ 2.3.6.3

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7 **Patterns and Relationships: Represent and connect mathematical patterns and relationships using verbal descriptions, generalizations, tables and graphs. Use representations to generate questions, make predictions and solve mathematical problems.**

1 Identify, create and describe simple number patterns involving repeated addition or subtraction, skip counting and arrays of objects such as counters or tiles. Use patterns to solve situations in various contexts. (MP7, MP8) ✜ $ # ☼ 2.3.7.1

2 Recognize patterns in counting. Skip count by 2s and 5s from any given number up to 120. (MP7) $ 2.3.7.2

3 Use numeric expressions to describe a visual growing pattern. (MP8) ✜ µ ☼ 2.3.7.3