Minnesota Mathematics

Grade 1

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 with teacher guidance. (MP6, MP7) ☼ 1.1.1.1

2 Collect and use data to consider and decide what data will answer a question. Represent the data as a drawing, tally marks, frequency bar graph and digitally communicate observations. (MP1, MP3) # μ 1.1.1.2

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 outcomes of events as impossible, possible or certain. (MP1, MP6) ☼ 1.1.2.1

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 Order three objects by length. Compare the lengths of two objects indirectly by using a third object. (MP2, MP5) ✜ ☼ 1.2.3.1

2 Measure the length of an object in terms of nonstandard units. (MP5) ☼ ✜ 1.2.3.2

3 Identify pennies, nickels and dimes. Find the value of a group of these coins, up to one dollar. (MP1, MP7) $ 1.2.3.3

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 Describe attributes of two- and three-dimensional objects, such as triangles, squares, rectangles, circles, rectangular prisms, cylinders, cones and spheres. (MP7, MP8) ✜ ☼ 1.2.4.1

2 Compose two-dimensional shapes (rectangles, squares, trapezoids, triangles, half-circles and quarter-circles) to create a composite shape. Decompose composite shapes into triangles, rectangles, squares and sectors. (MP3, MP7) μ 1.2.4.2

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3 Describe objects in the environment using names of shapes and describe the relative positions of these objects using left and right. (MP6) ☼ 1.2.4.3

4 Identify shapes regardless of their orientations. (MP1, MP6) ☼ 1.2.4.4

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 up to 120 using groups of 5s or 10s. (MP1, MP5) $ ✜ 1.3.5.1

2 Read, write, compare, order and represent whole numbers from 0 to 120. Representations may include numerals, expanded notation, addition and subtraction, pictures, tally marks, number lines and manipulatives such as bundles of sticks, ten frames and base 10 blocks. The numbers 10, 20, 30, 40, 50, 60, 70, 80, 90 refer to one, two, three, four, five, six, seven, eight or nine groups of 10s. (MP7, MP8) $ ✜ 1.3.5.2

3 Count, with or without objects, forward and backward from any given number up to 120. (MP7) $ ☼ 1.3.5.3

4 Using models, pictures or numbers to recognize and describe the place value of numbers between 10 and 120 as a relationship of n groups of 10 plus an amount represented by a single digit (n x 10+a). (MP4, MP7) $ 1.3.5.4

5 Estimate amounts up to 120 using benchmarks of 5s and 10s. (MP1, MP2) $ ☼ 1.3.5.5

6 Solve contextual situations, up to and including 20, using addition and subtraction strategies of adding to, taking from, part-part-whole, difference between and comparing. Solve for unknowns in contextual situations using objects, drawings and equations with unknowns represented by a symbol in all positions (result, change, start). (MP2, MP4) $ µ 1.3.5.6

7 Add within 100, including adding a two-digit number with a one-digit number and adding a two-digit number with a multiple of 10 using concrete models, place value language and properties of operations. Understand that in adding two-digit numbers, sometimes it is necessary to compose a new ten. (MP2, MP4) $ 1.3.5.7

8 Decompose numbers less than or equal to 10 into pairs, in more than one way, using objects or drawings. Record each decomposition with a drawing or equation. (MP7) 1.3.5.8

9 Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as counting on, making ten, decomposing a number leading to a ten using the relationship between addition and subtraction and creating equivalent but easier or known sums. (MP2, MP4) $ # µ 1.3.5.9

10 Use combinations of 10 to add to the next decade through 100. (MP7) $ 1.3.5.11

11 Determine the double of any single digit number. (MP8) 1.3.5.11

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12 Represent and solve contextual equal sharing situations where a whole number of items is shared equally among 2 groups. Name the fractional amount using the word “half.” (MP3, MP2) $ 1.3.5.12

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 two-digit numbers based on the meaning of the tens and ones digits. (MP3, MP4) $ 1.3.6.1

2 Determine if equations involving addition and subtraction are true or false, including those with operations on both sides. (MP2) $ 1.3.6.2

3 Determine the unknown whole number in an addition or subtraction equation relating three whole numbers. (MP7) $ 1.3.6.3

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 Create simple patterns using objects, pictures, numbers and rules. Identify possible rules to complete or extend patterns. Patterns may be repeating, growing or shrinking. Calculators can be used to create and explore patterns. (MP5, MP7) ✜ # ☼ 1.3.7.1

2 Recognize patterns in counting. Skip count by 2s and 5s starting at zero up to 120. Skip count by 10s starting at a non-zero number. (MP7) ✜ ☼ 1.3.7.2

3 Describe what is changing and what is staying the same in a visual growing pattern. (MP1, MP8) ✜ µ ☼ 1.3.7.3