Minnesota Mathematics

Kindergarten

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. (MP1, MP7) # ☼ ✣ `0.1.1.1`

2 Organize objects, draw pictures, or use tally marks to represent data and communicate observations. (MP3, MP6) # μ `0.1.1.2`

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 Compare objects with a measurable attribute in common, to see which object has "more of," "less of" or the "same as" the attribute and explain the reasoning. (MP3, MP5) ✣ $ ☼ `0.2.3.1`

2 Describe several measurable attributes of objects such as length and weight. (MP4, MP6) ✣ ☼ `0.2.3.2`

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 Sort objects using characteristics such as shape, size, color and thickness. (MP1, MP3) ✣ ☼ `0.2.4.1`

2 Identify and compare two- and threedimensional shapes such as squares, circles, triangles, rectangles, trapezoids, hexagons, cubes, cones, cylinders and spheres using informal language to describe their similarities, differences, parts and other attributes. (MP2) ✣ ☼ `0.2.4.2`

3 Compose, decompose and name simple shapes. Recognize shapes regardless of their overall size and orientation. (MP1, MP2) μ `0.2.4.3`

4 Describe objects in the environment using names of shapes. Describe the relative positions of these objects using terms such as above, below, beside, in front of, behind and next to. (MP1, MP6) ☼ ✣ `0.2.4.4`

Patterns and Re

5 Number Relationships: Describe/Interpret and use quantities, relationships between and representations of quantities and number systems. Describe and

Skip to main content

relate operations. Use strategies and procedures accurately, efficiently and flexibly. Assess the reasonableness of the results.

1. Recognize that a number can be used to represent how many objects are in a set or to represent the position of an object in a sequence. When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number with one and only one object. Understand that the last number said tells the number of objects counted. Understand that each successive number refers to a quantity that is one more. Name the position of an object in a sequence (ordinal count). (MP1, MP6) ✜ ☼ `0.3.5.1`
2. Count collections of objects up to 31 by grouping in 10s using ten-frames, cups or other tools. (MP6, MP7) ✜ $ ☼ `0.3.5.2`
3. Read, write, compare, order, and represent whole numbers from 0 to at least 31 (with 0 representing the count of no objects) to answer the question, “how many?” Representations may include numerals, pictures, real objects, picture graphs, spoken words and manipulatives, such as connecting cubes. The numbers from 11 to 19 are composed of a 10 and one, two, three, four, five, six, seven, eight or nine ones. (MP4, MP8) ✜ `0.3.5.3`
4. Count forward, with and without objects, to at least 31. Count backward from 20. (MP6) ☼ `0.3.5.4`
5. Find a number that is 1 more or 1 less than a given number. (MP7, MP8) `0.3.5.5`
6. Solve and represent a variety of addition and subtraction contextual situation types using objects, drawings, mental images or equations within 10. (MP4, MP5) $ µ `0.3.5.6`
7. Compose and decompose numbers less than or equal to 10 into pairs in more than one way with objects and pictures. Record each decomposition with a drawing or equation. (MP7) `0.3.5.7`
8. Fluently add and subtract within 5. (MP2) `0.3.5.8`

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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. Identify whether the number of objects in one group is greater than, less than or equal to the number of objects in another group (by using matching, counting strategies, and a number line). (MP2, MP5) ☼ `0.3.6.1`
   2. Recognize that the equal sign (=) is a comparison symbol of two math expressions of equal value number. (MP6) `0.3.6.2`

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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. Recognize, create, complete, and extend simple patterns using shape, color, size, number, sounds, and movements. Patterns may be repeating, growing or shrinking. (MP1, MP7) ✜ # ☼ `0.3.7.1`

Skip to main content

2 Recognize patterns in counting. Skip count by 10s starting at zero up to 100. (MP7)

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