

## Grade 1 Mathematics *Standards of Learning* - 2023 Overview of Revisions

This overview includes a summary of the content embedded in five content strands.

**Number and Number Sense:** *Developing a sense of quantity allows us to see relationships between numbers, think flexibly about numbers, and notice patterns that can emerge as we work with numbers to quantify, measure, and make decisions in life.*

- Use flexible counting strategies to determine and describe quantities up to 120
- Represent, compare, and order quantities up to 120
- Use mathematical reasoning and justification to solve contextual problems that involve partitioning models into two and four equal-sized parts

**Computation and Estimation:** *The operations of addition and subtraction are used to represent and solve many different types of problems.*

- Recall with automaticity addition and subtraction facts within 10
- Represent, solve, and justify solutions to single-step problems using addition and subtraction with whole numbers within 20

**Measurement and Geometry:** *Analyzing and describing geometric objects, the relationships and structures among them, or the space that they occupy can be used to classify, quantify, measure, or count one or more attributes.*

- Use nonstandard units to measure and compare objects by length, weight, and volume
- Describe, sort, draw, and name plane figures (circles, triangles, squares, and rectangles)
- Compose larger plane figures by combining simple plane figures
- Demonstrate an understanding of the concept of passage of time (to the nearest hour and half-hour) and the calendar

**Probability and Statistics:** *The world can be investigated through posing questions and collecting, representing, analyzing, and interpreting data to describe and predict events and real-world phenomena.*

- Apply the data cycle (pose questions; collect or acquire data; organize and represent data; and analyze data and communicate results) with a focus on object graphs, picture graphs, and tables

**Patterns, Functions, and Algebra:** *Relationships can be described, and generalizations can be made using patterns and relations.*

- Identify, describe, extend, create, and transfer repeating and growing (increasing) patterns using various representations

## Comparison of Grade 1 Mathematics *Standards of Learning* – 2016 to 2023

<b>2016 <i>Standards of Learning</i></b> Essential Knowledge and Skills (EKS) Number and Number Sense	<b>2023 <i>Standards of Learning</i></b> Knowledge and Skills (KS) Number and Number Sense (NS)
<p><b>1.1 The student will</b></p> <p>a) <b>count forward orally by ones to 110, starting at any number between 0 and 110;</b></p> <p>c) <b>count backward orally by ones when given any number between 1 and 30; and</b></p> <p>d) <b>count forward orally by ones, twos, fives, and tens to determine the total number of objects to 110.</b></p> <ul style="list-style-type: none"> <li>● Count forward orally, by ones, from 0 to 110 starting at any number between 0 and 110. (a)</li> <li>● Use the oral counting sequence to tell how many objects are in a set. (a)</li> <li>● Count backward orally by ones when given any number between 1 and 30. (c)</li> <li>● Count forward orally by ones, twos, fives, and tens to determine the total number of objects to 110. (d)</li> </ul>	<p><b>1.NS.1 The student will utilize flexible counting strategies to determine and describe quantities up to 120.</b></p> <p>a) Count forward orally by ones from 0 to 120 starting at any number between 0 and 120.</p> <p>b) Count backward orally by ones when given any number between 1 and 30.</p> <p>c) Represent forward counting patterns when counting by groups of 5 and groups of 10 up to 120 using a variety of tools (e.g., objects, coins, 120 chart).</p> <p>d) Represent forward counting patterns when counting by groups of 2 up to at least 30 using a variety of tools (e.g., beaded number strings, number paths [a prelude to number lines], 120 chart).</p> <p>e) Group a collection of up to 120 objects into tens and ones, and count to determine the total (e.g., 5 groups of ten and 6 ones is equal to 56 total objects).</p> <p>f) Identify a penny, nickel, and dime by their attributes and describe the number of pennies equivalent to a nickel and a dime.</p> <p>g) Count by ones, fives, or tens to determine the value of a collection of like coins (pennies, nickels, or dimes), whose total value is 100 cents or less.</p>

<p align="center"><b>2016 Standards of Learning</b> Essential Knowledge and Skills (EKS) <b>Number and Number Sense</b></p>	<p align="center"><b>2023 Standards of Learning</b> Knowledge and Skills (KS) <b>Number and Number Sense (NS)</b></p>
<p><b>1.1 The student will</b> b) <b>write the numerals 0 to 110 in sequence and out-of-sequence;</b></p> <ul style="list-style-type: none"> <li>● Write numerals 0-110 in sequence and out of sequence. (b)</li> </ul>	<p><b>1.NS.2 The student will represent, compare, and order quantities up to 120.</b></p> <ul style="list-style-type: none"> <li>a) Read and write numerals 0-120 in sequence and out of sequence.</li> <li>b) Estimate the number of objects (up to 120) in a given collection and justify the reasonableness of an answer.</li> <li>c) Create a concrete or pictorial representation of a number using tens and ones and write the corresponding numeral up to 120 (e.g., 47 can be represented as 47 ones or it can be grouped into 4 tens with 7 ones leftover).</li> <li>d) Describe the number of groups of tens and ones when given a two-digit number and justify reasoning.</li> <li>e) Compare two numbers between 0 and 120 represented pictorially and with concrete objects using the terms greater than, less than, or equal to.</li> <li>f) Order three sets, each set containing up to 120 objects, from least to greatest, and greatest to least.</li> </ul>
<p><b>1.2 The student, given up to 110 objects, will</b></p> <ul style="list-style-type: none"> <li>a) <b>group a collection into tens and ones and write the corresponding numeral;</b></li> <li>b) <b>compare two numbers between 0 and 110 represented pictorially or with concrete objects, using the words <i>greater than</i>, <i>less than</i> or <i>equal to</i>; and</b></li> <li>c) <b>order three or fewer sets from least to greatest and greatest to least.</b></li> </ul>	<p><b>[Included in 1.NS.1 and 1.NS.2]</b></p>

<p style="text-align: center;"><b>2016 Standards of Learning</b> Essential Knowledge and Skills (EKS) <b>Number and Number Sense</b></p>	<p style="text-align: center;"><b>2023 Standards of Learning</b> Knowledge and Skills (KS) <b>Number and Number Sense (NS)</b></p>
<ul style="list-style-type: none"> <li>● Group a collection of up to 110 objects into sets of tens and ones. (a)</li> <li>● Write the numeral that corresponds to the total number of objects in a given collection of up to 110 objects that have been grouped into sets of tens and ones. (a)</li> <li>● Identify the place and value of each digit in a two-digit numeral (e.g., in the number 23, the 2 is in the tens place and the value of the 2 is 20). (a)</li> <li>● Identify the number of tens and ones that can be made from any number up to 100 (e.g., 47 is 47 ones or can also be grouped into 4 tens with 7 ones left over). (a)</li> <li>● Compare two numbers between 0 and 110 represented pictorially or with concrete objects, using the words <i>greater than</i>, <i>less than</i> or <i>equal to</i>. (b)</li> <li>● Order three or fewer sets, each set containing up to 110 objects, from least to greatest and greatest to least. (c)</li> </ul>	
<p><b>1.3 The student, given an ordered set of ten objects and/or pictures, will indicate the ordinal position of each object, first through tenth.</b></p> <ul style="list-style-type: none"> <li>● Identify the ordinal positions first through tenth using ordered sets of 10 objects and/or pictures of such sets presented from: <ul style="list-style-type: none"> <li>○ left to right;</li> <li>○ right to left;</li> <li>○ top to bottom; and/or</li> <li>○ bottom to top.</li> </ul> </li> </ul>	<p><b>[Ordinals included in 1.MG.3]</b></p>

<p align="center"><b>2016 Standards of Learning</b> Essential Knowledge and Skills (EKS) <b>Number and Number Sense</b></p>	<p align="center"><b>2023 Standards of Learning</b> Knowledge and Skills (KS) <b>Number and Number Sense (NS)</b></p>
<p><b>1.4 The student will</b></p> <p>a) <b>represent and solve practical problems involving equal sharing with two or four sharers; and</b></p> <p>b) <b>represent and name fractions for halves and fourths, using models.</b></p> <ul style="list-style-type: none"> <li>● Share a whole equally with two or four sharers, when given a practical situation. (a)</li> <li>● Represent fair shares pictorially, when given a practical situation. (a)</li> <li>● Describe shares as equal pieces or parts of the whole (e.g., halves, fourths), when given a practical situation. (a)</li> <li>● Represent halves and fourths of a whole, using a region/area model (e.g., pie pieces, pattern blocks, paper folding, and drawings). (b)</li> <li>● Name fractions represented by drawings or concrete materials for halves and fourths. (b)</li> </ul>	<p><b>1.NS.3 The student will use mathematical reasoning and justification to solve contextual problems that involve partitioning models into two and four equal-sized parts.</b></p> <ul style="list-style-type: none"> <li>a) Represent equal shares of a whole with two or four sharers, when given a contextual problem.</li> <li>b) Represent and name halves and fourths of a whole, using a region/area model (e.g., pie pieces, pattern blocks, paper folding, drawings) and a set model (e.g., eggs, marbles, counters) limited to two or four items.</li> <li>c) Describe and justify how shares are equal pieces or equal parts of the whole (limited to halves, fourths) when given a contextual problem.</li> </ul>
<p><b>1.5 The student, given a familiar problem situation involving magnitude, will</b></p> <p>a) <b>select a reasonable order of magnitude from three given quantities: a one-digit numeral, a two-digit numeral, and a three-digit numeral (e.g., 5, 50, 500); and</b></p> <p>b) <b>explain the reasonableness of the choice.</b></p>	<p><b>[Magnitude moved to Grade 2; New estimation content included in 1.NS.2]</b></p>

<p align="center"><b>2016 Standards of Learning</b> Essential Knowledge and Skills (EKS) <b>Number and Number Sense</b></p>	<p align="center"><b>2023 Standards of Learning</b> Knowledge and Skills (KS) <b>Number and Number Sense (NS)</b></p>
<ul style="list-style-type: none"> <li>● Select a reasonable order of magnitude for a given set from three given quantities: a one-digit numeral, a two-digit numeral, and a three-digit numeral (e.g., 5, 50, or 500 jelly beans in jars) in a familiar problem situation. (a)</li> <li>● Explain why a particular estimate was chosen as the most reasonable from three given quantities (a one-digit numeral, a two-digit numeral, and a three-digit numeral), given a familiar problem situation. (b)</li> </ul>	

<p align="center"><b>2016 Standards of Learning</b> Essential Knowledge and Skills (EKS) <b>Computation and Estimation</b></p>	<p align="center"><b>2023 Standards of Learning</b> Knowledge and Skills (KS) <b>Computation and Estimation (CE)</b></p>
<p><b>1.6 The student will create and solve single-step story and picture problems using addition and subtraction within 20.</b></p> <ul style="list-style-type: none"> <li>● Create and solve single-step oral or written story and picture problems, using addition and subtraction within 20.</li> <li>● Identify a number sentence to solve an oral or written story and picture problem, selecting from among addition and/or subtraction equations (e.g., number sentences).</li> <li>● Combine parts contained in larger numbers up to 20 by using related combinations (e.g., <math>9 + 7</math> can be thought of as 9 broken up into 2 and 7; using doubles, <math>7 + 7 = 14</math>; <math>14 + 2 = 16</math> or 7 broken up into 1 and 6; making a ten, <math>1 + 9 = 10</math>; <math>10 + 6 = 16</math>).</li> </ul>	<p><b>1.CE.1 The student will recall with automaticity addition and subtraction facts within 10 and represent, solve, and justify solutions to single-step problems, including those in context, using addition and subtraction with whole numbers within 20.</b></p> <ul style="list-style-type: none"> <li>a) Recognize and describe with fluency part-part-whole relationships for numbers up to 10 in a variety of configurations.</li> <li>b) Demonstrate fluency with addition and subtraction within 10 by applying reasoning strategies (e.g., count on/count back, one more/one less, doubles, make ten).</li> <li>c) Recall with automaticity addition and subtraction facts within 10.</li> </ul>

<p align="center"><b>2016 Standards of Learning</b> Essential Knowledge and Skills (EKS) <b>Computation and Estimation</b></p>	<p align="center"><b>2023 Standards of Learning</b> Knowledge and Skills (KS) <b>Computation and Estimation (CE)</b></p>
<ul style="list-style-type: none"> <li>● Explain strategies used to solve addition and subtraction problems within 20 using spoken words, objects, pictorial models, and number sentences.</li> </ul>	<ul style="list-style-type: none"> <li>d) Investigate, recognize, and describe part-part-whole relationships for numbers up to 20 in a variety of configurations (e.g., beaded racks, double ten frames).</li> <li>e) Solve addition and subtraction problems within 20 using various strategies (e.g., inverse relationships: if <math>9 + 3 = 12</math> then <math>12 - 3 = 9</math>; decomposition using known sums/differences: <math>9 + 7</math> can be thought of as 9 decomposed into 2 and 7, then use doubles, <math>7 + 7 = 14</math>; <math>14 + 2 = 16</math> or decompose the 7 into 1 and 6; make a ten: <math>1 + 9 = 10</math>; <math>10 + 6 = 16</math>).</li> <li>f) Represent, solve, and justify solutions to single-step addition and subtraction problems (join, separate, and part-part-whole) within 20, including those in context, using words, objects, drawings, or numbers.</li> <li>g) Determine the unknown whole number that will result in a sum or difference of 10 or 20 (e.g., <math>14 - \underline{\quad} = 10</math> or <math>15 + \underline{\quad} = 20</math>).</li> <li>h) Identify and use (+) as a symbol for addition and (-) as a symbol for subtraction.</li> <li>i) Describe the equal symbol (=) as a balance representing an equivalent relationship between expressions on either side of the equal symbol (e.g., 6 and 1 is the same as 4 and 3; <math>6 + 1</math> is balanced with <math>4 + 3</math>; <math>6 + 1 = 4 + 3</math>).</li> <li>j) Use concrete materials to model, identify, and justify when two expressions are not equal (e.g., <math>10 - 3</math> is not equal to <math>3 + 5</math>).</li> <li>k) Use concrete materials to model an equation that represents the relationship of two expressions of equal value.</li> <li>l) Write an equation that could be used to represent the solution to an oral, written, or picture problem.</li> </ul>

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<p><b>1.7 The student will</b></p> <p>a) <b>recognize and describe with fluency part-whole relationships for numbers up to 10; and</b></p> <p>b) <b>demonstrate fluency with addition and subtraction within 10.</b></p> <ul style="list-style-type: none"> <li>● Recognize and describe with fluency part-whole relationships for numbers up to 10 in a variety of configurations. (a)</li> <li>● Identify + as a symbol for addition, - as a symbol for subtraction, and = as a symbol for equality. (b)</li> <li>● Demonstrate fluency with addition and subtraction within 10. (b)</li> </ul>	<p>[Included in 1.CE.1]</p>

<p style="text-align: center;"><b>2016 Standards of Learning</b> Essential Knowledge and Skills (EKS) <b>Measurement and Geometry</b></p>	<p style="text-align: center;"><b>2023 Standards of Learning</b> Knowledge and Skills (KS) <b>Measurement and Geometry (MG)</b></p>
<p><b>1.8 The student will determine the value of a collection of like coins (pennies, nickels, or dimes) whose total value is 100 cents or less.</b></p> <ul style="list-style-type: none"> <li>● Count by ones to determine the value of a collection of pennies whose total value is 100 cents or less.</li> <li>● Group a collection of pennies by fives and tens as a way to determine the value. The total value of the collection is 100 cents or less.</li> <li>● Count by fives to determine the value of a collection of nickels whose total value is 100 cents or less.</li> </ul>	<p>[Included in 1.NS.1]</p>



<p style="text-align: center;"><b>2016 Standards of Learning</b> Essential Knowledge and Skills (EKS) <b>Measurement and Geometry</b></p>	<p style="text-align: center;"><b>2023 Standards of Learning</b> Knowledge and Skills (KS) <b>Measurement and Geometry (MG)</b></p>
<ul style="list-style-type: none"> <li>● Count by tens to determine the value of a collection of dimes whose total value is 100 cents or less.</li> </ul>	
<p><b>1.9 The student will investigate the passage of time and</b></p> <p><b>a) tell time to the hour and half-hour, using analog and digital clocks; and</b></p> <p><b>b) read and interpret a calendar.</b></p> <ul style="list-style-type: none"> <li>● Identify different types of clocks (analog and digital) as instruments to measure time. (a)</li> <li>● Tell time shown on an analog clock to the hour and half-hour. (a)</li> <li>● Tell time shown on a digital clock to the hour and half-hour. (a)</li> <li>● Match a written time (e.g., 1:00, 3:30, 11:00) to the time shown on a digital and analog clock to the hour and half-hour. (a)</li> <li>● Read a calendar to locate a given day or date (e.g., What day of the week is the 10th? What date is Saturday?). (b)</li> <li>● Determine the day/date before and after a given day/date (e.g., Today is the 30th, so yesterday must have been the __?). (b)</li> <li>● Given a calendar, determine the number of any day of the week (e.g., How many Fridays are in the month of October?) (b)</li> </ul>	<p><b>1.MG.3 The student will demonstrate an understanding of the concept of passage of time (to the nearest hour and half-hour) and the calendar.</b></p> <ul style="list-style-type: none"> <li>a) Identify different tools to measure time including clocks (analog and digital) and calendar.</li> <li>b) Describe the units of time represented on a clock as minutes and hours.</li> <li>c) Tell time to the hour and half-hour, using analog and digital clocks.</li> <li>d) Describe the location of the hour hand relative to time to the hour and half-hour on an analog clock.</li> <li>e) Describe the location of the minute hand relative to time to the hour and half-hour on an analog clock.</li> <li>f) Match the time shown on a digital clock to an analog clock to the hour and half-hour.</li> <li>g) Identify specific days/dates on a calendar (e.g., What date is Saturday? How many Fridays are in October?).</li> <li>h) Use ordinal numbers first through tenth to describe the relative position of specific days/dates (e.g., What is the first Monday in October? What day of the week is May 6th?).</li> <li>i) Determine the day/date before and after a given day/date (e.g., Today is the 8th, so yesterday was the ?), and a date that is a</li> </ul>

<p align="center"><b>2016 Standards of Learning</b> Essential Knowledge and Skills (EKS) <b>Measurement and Geometry</b></p>	<p align="center"><b>2023 Standards of Learning</b> Knowledge and Skills (KS) <b>Measurement and Geometry (MG)</b></p>
	<p>specific number of days/weeks in the past or future (e.g., Tim’s birthday is in 10 days, what will be the date of his birthday?).</p>
<p><b>1.10 The student will use nonstandard units to measure and compare length, weight, and volume.</b></p> <ul style="list-style-type: none"> <li>● Measure the length of objects, using various nonstandard units (e.g., connecting cubes, paper clips, erasers).</li> <li>● Compare the length of two objects, using the terms <i>longer/shorter</i>, <i>taller/shorter</i>, or <i>same as</i>.</li> <li>● Measure the weight of objects, using a balance or pan scale with various nonstandard units (e.g., paper clips, bean bags, cubes).</li> <li>● Identify a balance scale or a pan scale as a tool for measuring weight.</li> <li>● Compare the weight of two objects, using the terms <i>lighter</i>, <i>heavier</i>, or <i>the same</i>, using a balance scale.</li> <li>● Measure the volume of objects, using various nonstandard units (e.g., connecting cubes, blocks, rice, water).</li> <li>● Compare the volumes of two containers to determine whether the volume of one is <i>more</i>, <i>less</i>, or <i>equivalent to</i> the other, using nonstandard units of measure (e.g., a spoonful or scoopful of rice, sand, jelly beans).</li> </ul>	<p><b>1.MG.1 The student will reason mathematically using nonstandard units to measure and compare objects by length, weight, and volume.</b></p> <ul style="list-style-type: none"> <li>a) Use nonstandard units to measure the: <ul style="list-style-type: none"> <li>i) lengths of two objects (units laid end to end with no gaps or overlaps) and compare the measurements using the terms longer/shorter, taller/shorter, or the same as;</li> <li>ii) weights of two objects (using a balance scale or a pan scale) and compare the measurements using the terms lighter, heavier, or the same as; and</li> <li>iii) volumes of two containers and compare the measurements using the terms more, less, or the same as.</li> </ul> </li> <li>b) Measure the length, weight, or volume of the same object or container with two different units and describe how and why the measurements differ.</li> </ul>

<p style="text-align: center;"><b>2016 Standards of Learning</b> Essential Knowledge and Skills (EKS) <b>Measurement and Geometry</b></p>	<p style="text-align: center;"><b>2023 Standards of Learning</b> Knowledge and Skills (KS) <b>Measurement and Geometry (MG)</b></p>
<ul style="list-style-type: none"> <li>● Compare the volumes of two containers to determine whether the volume of one is <i>more</i>, <i>less</i>, or <i>equivalent to</i> the other by pouring the contents of one container into the other.</li> </ul>	
<p><b>1.11 The student will</b></p> <p>a) <b>identify, trace, describe, and sort plane figures (triangles, squares, rectangles, and circles) according to number of sides, vertices, and angles; and</b></p> <p>b) <b>identify and describe representations of circles, squares, rectangles, and triangles in different environments, regardless of orientation, and explain reasoning.</b></p> <ul style="list-style-type: none"> <li>● Identify the name of the plane figure when given information about the number of sides, vertices, and angles. (a)</li> <li>● Trace triangles, squares, rectangles, and circles. (a)</li> <li>● Describe a circle using terms such as <i>round</i> and <i>curved</i>. (a)</li> <li>● Describe triangles, squares, and rectangles by the number of sides, vertices, and angles. (a)</li> <li>● Recognize that rectangles and squares have special types of angles called right angles. (a)</li> <li>● Sort plane figures based on their characteristics (number of sides, vertices, angles, curved, etc.). (a)</li> <li>● Identify and describe representations of circles, squares, rectangles, and triangles, regardless of orientation, in different environments and explain reasoning. (b)</li> </ul>	<p><b>1.MG.2 The student will describe, sort, draw, and name plane figures (circles, triangles, squares, and rectangles), and compose larger plane figures by combining simple plane figures.</b></p> <ul style="list-style-type: none"> <li>a) Describe triangles, squares, and rectangles using the terms sides, vertices, and angles. Describe a circle using terms such as <i>round</i> and <i>curved</i>.</li> <li>b) Sort plane figures based on their characteristics (number of sides, vertices, angles, curved, etc.).</li> <li>c) Draw and name the plane figure (circle, square, rectangle, triangle) when given information about the number of sides, vertices, and angles.</li> <li>d) Identify, name, and describe representations of circles, squares, rectangles, and triangles, regardless of orientation, in different environments and explain reasoning.</li> <li>e) Recognize and name the angles found in rectangles and squares as right angles.</li> <li>f) Compose larger plane figures by joining two or three simple plane figures (triangles, squares, and/or rectangles).</li> </ul>

<p style="text-align: center;"><b>2016 Standards of Learning</b> Essential Knowledge and Skills (EKS) <b>Probability and Statistics</b></p>	<p style="text-align: center;"><b>2023 Standards of Learning</b> Knowledge and Skills (KS) <b>Probability and Statistics (PS)</b></p>
<p><b>1.12 The student will</b></p> <p>a) collect, organize, and represent various forms of data using tables, picture graphs, and object graphs; and</p> <p>b) read and interpret data displayed in tables, picture graphs, and object graphs, using the vocabulary <i>more, less, fewer, greater than, less than, and equal to</i>.</p> <ul style="list-style-type: none"> <li>● Collect and organize data using various forms of data collection (e.g., counting and tallying, informal surveys, observations, voting). Data points, collected by students, should be limited to 16 or fewer for no more than four categories. (a)</li> <li>● Represent data in tables, picture graphs, and object graphs. (a)</li> <li>● Analyze information displayed in tables, picture graphs, and object graphs (horizontally or vertically represented):</li> <li>● Read the graph to determine the categories of data and the data as a whole (e.g., the total number of responses) and its parts (e.g., 15 people are wearing sneakers); and</li> <li>● Interpret the data that represents numerical relationships, to include using the words <i>more, less, fewer, greater than, less than, and equal to</i>. (b)</li> </ul>	<p><b>1.PS.1 The student will apply the data cycle (pose questions; collect or acquire data; organize and represent data; and analyze data and communicate results) with a focus on object graphs, picture graphs, and tables.</b></p> <ul style="list-style-type: none"> <li>a) Sort and classify concrete objects into appropriate subsets (categories) based on one or two attributes, such as size, shape, color, and/or thickness (e.g., sort a set of objects that are both red and thick).</li> <li>b) Describe and label attributes of a set of objects that has been sorted.</li> <li>c) Pose questions, given a predetermined context, that require the collection of data (limited to 25 or fewer data points for no more than four categories).</li> <li>d) Determine the data needed to answer a posed question and collect the data using various methods (e.g., counting objects, drawing pictures, tallying).</li> <li>e) Organize and represent a data set by sorting the collected data using various methods (e.g., tallying, T-charts).</li> <li>f) Represent a data set (vertically or horizontally) using object graphs, picture graphs, and tables.</li> <li>g) Analyze data represented in object graphs, picture graphs, and tables and communicate results: <ul style="list-style-type: none"> <li>i) ask and answer questions about the data represented in object graphs, picture graphs, and tables (e.g., total number of data points represented, how many in each category, how many more or less are in one category than another); and</li> </ul> </li> </ul>

<p align="center"><b>2016 Standards of Learning</b> Essential Knowledge and Skills (EKS) <b>Probability and Statistics</b></p>	<p align="center"><b>2023 Standards of Learning</b> Knowledge and Skills (KS) <b>Probability and Statistics (PS)</b></p>
	<p align="center">ii) draw conclusions about the data and make predictions based on the data.</p>

<p align="center"><b>2016 Standards of Learning</b> Essential Knowledge and Skills (EKS) <b>Patterns, Functions, and Algebra</b></p>	<p align="center"><b>2023 Standards of Learning</b> Knowledge and Skills (KS) <b>Patterns, Functions, and Algebra (PFA)</b></p>
<p><b>1.13 The student will sort and classify concrete objects according to one or two attributes.</b></p> <ul style="list-style-type: none"> <li>● Sort and classify concrete objects into appropriate subsets (categories) based on one or two attributes, such as size, shape, color, and/or thickness (e.g., sort a set of objects that are both red and thick).</li> <li>● Label attributes of a set of objects that has been sorted.</li> <li>● Name multiple ways to sort a set of objects.</li> </ul>	<p>[Included in 1.PS.1]</p>
<p><b>1.14 The student will identify, describe, extend, create, and transfer growing and repeating patterns.</b></p> <ul style="list-style-type: none"> <li>● Identify the pattern in a given rhythmic, color, geometric figure, or numerical sequence.</li> <li>● Describe the pattern in a given rhythmic, color, geometric figure, or numerical sequence in terms of the core (the part of the sequence that repeats).</li> </ul>	<p><b>1.PFA.1 The student will identify, describe, extend, create, and transfer repeating patterns and increasing patterns using various representations.</b></p> <ul style="list-style-type: none"> <li>a) Identify and describe repeating and increasing patterns.</li> <li>b) Analyze a repeating or increasing pattern and generalize the change to extend the pattern using objects, pictures, movements, colors, or geometric figures.</li> </ul>

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<ul style="list-style-type: none"> <li>● Extend a repeating or growing pattern, using manipulatives, geometric figures, numbers, or calculators.</li> <li>● Create a repeating or growing pattern, using manipulatives, geometric figures, numbers, or calculators (e.g., the growing patterns 2, 3, 2, 4, 2, 5, 2, 6, 2, 7).</li> <li>● Transfer a pattern from one form to another.</li> </ul>	<ul style="list-style-type: none"> <li>c) Create repeating and increasing patterns using objects, pictures, movements, colors, or geometric figures.</li> <li>d) Transfer a repeating or increasing pattern from one form to another.</li> </ul>
<p><b>1.15 The student will demonstrate an understanding of equality through the use of the equal symbol.</b></p> <ul style="list-style-type: none"> <li>● Describe the concept of equality.</li> <li>● Identify equivalent values and represent equalities through the use of objects, words, and the equal (=) symbol.</li> <li>● Identify and describe expressions that are not equal (e.g., <math>4 + 3</math> is not equal to <math>3 + 5</math>).</li> <li>● Recognize that equations can be used to represent the relationship between two expressions of equal value (e.g., <math>4 + 2 = 2 + 4</math> and <math>6 + 1 = 4 + 3</math>).</li> <li>● Model an equation that represents the relationship of two expressions of equal value.</li> </ul>	<p><b>[Included in 1.CE.1]</b></p>

## 2023 Grade 1 Mathematics SOL – Summary of Changes

Grade 1 (2016 SOL to 2023 SOL Numbering)	Parameter Changes/Clarifications (2023 SOL)
<ul style="list-style-type: none"> <li>● 1.1a,c,d → 1.NS.1</li> <li>● 1.1b → 1.NS.2</li> <li>● 1.2a-c → 1.NS.2</li> <li>● 1.3 → 1.MG.3</li> <li>● 1.4a-b → 1.NS.3</li> <li>● 1.5a-b → [Moved to Grade 2; new estimation content in 1.NS.2]</li> <li>● 1.6 → 1.CE.1</li> <li>● 1.7a-b → 1.CE.1</li> <li>● 1.8 → 1.NS.1</li> <li>● 1.9a-b → 1.MG.3</li> <li>● 1.10 → 1.MG.1</li> <li>● 1.11a-b → 1.MG.2</li> <li>● 1.12a-b → 1.PS.1</li> <li>● 1.13 → 1.PS.1</li> <li>● 1.14 → 1.PFA.1</li> <li>● 1.15 → 1.CE.1</li> </ul>	<ul style="list-style-type: none"> <li>● 1.NS.1a - Count forward by ones increased from 110 to 120</li> <li>● 1.NS.1c - Represent forward counting patterns increased from 110 to 120 when counting by groups of 5 or groups of 10</li> <li>● 1.NS.1d - Represent forward counting patterns decreased from 110 to 30 when counting by groups of 2</li> <li>● 1.NS.1e - Group a collection of objects into tens and ones increased from 110 to 120</li> <li>● 1.NS.2a - Read and write numerals, in sequence and out of sequence, increased from 110 to 120</li> <li>● 1.NS. 2b - Estimate the number of objects in a collection (up to 120) and justify reasonableness replaces magnitude to 500</li> <li>● 1.NS.2c - Create a concrete or pictorial representation of a number using tens and ones increased from 110 to 120</li> <li>● 1.NS.2e - Compare two numbers and order three sets increased from 110 to 120 objects</li> <li>● 1.NS.3b - Represent and name halves and fourths of a whole, using a set model (limited to two or four items)</li> <li>● 1.CE.1c - ‘Demonstrate fluency within 10’ expanded to include ‘Recall with automaticity’</li> <li>● 1.CE.1d - Investigate, recognize, and describe part-part-whole relationships to 20 in a variety of configurations</li> <li>● 1.CE.1(l) - Write an equation that could be used to represent the solution to an oral, written, or picture problem</li> <li>● 1.PS.1c - Collect data points increased from 16 to 25</li> </ul>

Deletions from Grade 1 (2016 SOL)	Additions to Grade 1 (2023 SOL)
<ul style="list-style-type: none"> <li>● 1.2a [EKS] - Identify the place and value of each digit in a two-digit numeral [Included in Grade 2]</li> <li>● 1.5 - Magnitude to 500 [Moved to Grade 2]</li> <li>● 1.6 [EKS] - Create single-step oral or written story and picture problems, using addition and subtraction within 20</li> <li>● 1.11 [EKS] - Trace triangles, squares, rectangles, and circles</li> </ul>	<ul style="list-style-type: none"> <li>● 1.NS.1f - Identify penny, nickel, dime and describe the number of pennies equivalent to a nickel or dime [Moved from Kindergarten]</li> <li>● 1.NS.2d - Describe the number of groups of tens and ones when given a two-digit number and justify reasoning</li> <li>● 1.CE.1g - Determine the unknown whole number that will result in a sum or difference of 10 or 20 (e.g., <math>14 - \underline{\quad} = 10</math> or <math>15 + \underline{\quad} = 20</math>)</li> <li>● 1.MG.1b - Measure the length, weight, or volume of the same object or container with two different units and describe how and why the measurements differ</li> <li>● 1.MG.2c - Draw and name the plane figure (circle, square, rectangle, triangle) when given information about the number of sides, vertices, and angles</li> <li>● 1.MG.2f - Compose larger plane figures by combining two or three simple plane figures (triangles, squares, and/or rectangles)</li> <li>● 1.MG.3b - Describe the units of time represented on a clock as minutes and hours</li> <li>● 1.MG.3e - Describe the location of the minute hand and the hour hand relative to time to the hour and half-hour on analog clock</li> <li>● 1. PS.1a-g - Additional data analysis knowledge and skills representing the data cycle have been included (e.g., pose questions, determine data needed to answer a posed question, ask and answer questions about the data; draw conclusions)</li> </ul>

**KEY:** NS = Number and Number Sense; CE = Computation and Estimation; MG = Measurement and Geometry; PS = Probability and Statistics; PFA = Patterns, Functions, and Algebra; EKS = Essential Knowledge and Skills (2016); KS = Knowledge and Skills (2023); US = Understanding the Standard