Grade K	Grade 1	Grade 2
Standard 1 – Number Sense *Students understand the relationship between numbers and quantities up to 10, and that a set* of objects has the same number in all situations regardless of the position or arrangement of the objects.*	***Standard 1 - Number Sense*** *Students understand symbols, objects, and pictures used to represent numbers up to 100 and show an understanding of fractions.*	***Standard 1 - Number Sense*** *Students understand the relationships among numbers, quantities, and place value in whole numbers* up to 100. They understand that fractions may refer to parts of a set* and parts of a whole.*
K.1.1 Match sets of objects one-to-one. Example: Take crayons from the box and give one to each student in the group. Explain what you are doing. K.1.2 Compare sets of up to ten objects and identify whether one set is equal to, more than, or less than another. Example: Compare the blocks in two boxes. Tell which box contains more blocks and explain the way in which you decided on your answer. K.1.3 Know that larger numbers describe sets with more objects in them than sets described by smaller numbers. Example: Understand that a set of 7 apples contains more apples than a set of 3 apples. K.1.4 Divide sets of ten or fewer objects into equal groups. Example: Take 6 blocks and give the same number to each of 3 children. K.1.5 Divide shapes into equal parts. Example: Divide a piece of paper into 4 equal parts.	1.1.1 Count, read, and write whole numbers* up to 100. Example: Write 72 for the number "seventy-two." 1.1.2 Count and group objects in ones and tens. Example: Separate a group of 34 blocks into three groups of 10 blocks and 4 single blocks. 1.1.3 Identify the number of tens and ones less than 100. Example: How many tens and how many ones are in 56? Explain your answer. 1.1.4 Name the number that is one more than or one less than any number up to 100. Example: Name the number one less than 78. 1.1.5 Compare whole numbers up to 10 and arrange them in numerical order. Example: Arrange the numbers 5, 2, and 9 in order from greatest to least.	2.1.1 Count by ones, twos, fives, and tens to 100. Example: Count 74 pencils by groups of tens and twos. 2.1.2 Identify the pattern of numbers in each group of ten, from tens through nineties. Example: Where on a hundreds chart are the numbers 12, 22, 32, etc.? 2.1.3 Identify numbers up to 100 in various combinations of tens an ones. Example: 32 = 3 tens + 2 ones = 2 tens + 12 ones, etc. 2.1.4 Name the number that is ten more or ten less than any number 10 through 90. Example: Name the number ten more than 54. 2.1.5 Compare whole numbers up to 100 and arrange them in numerical order. Example: Put the number in order of size: 95, 28, 42, 31.

K.1.6 Count, recognize, represent, name, and order a number of objects (up to 10). Example: Count a group of seven pennies, Recognize that 7 is the number for this set. K.1.7 Find the number that is one more than or one less than any whole number* up to 10. Example: you have a bag of 7 apples. How many apples are in a box that holds one less than your bag of apples? K.1.8 Use correctly the words one/many, none/some/all, more/less, and most/least. Example: Take some of the blocks out of the box, but not all of them. K.1.9 Record and organize information using objects and pictures. Example: Ask some of your friends what pets they have. Use pictures of animals to show the number of pets your friends have. *set: collection of objects, numbers, etc. *whole numbers: 0, 1, 2, 3, etc.	1.1.6 Match the number names first, second, third, etc. with an ordered set of up to 10 items. Example: Point out the fifth child from the front of a line of children. 1.1.7 Recognize when a shape is divided into congruent (matching) parts. Example: Given a rectangle with lines dividing it into parts, decide whether the parts are the same size. 1.1.8 For a shape divided into 8 or fewer congruent (matching) parts, describe a shaded portion as "__out of __ parts" and write the fraction. Example: Given a circle divided into 4 equal parts with 3 of the parts shaded, describe the shaded portion of "3 out of 4 parts" and write the fraction for the shaded portion. 1.1.9 For a set of 8 or fewer objects, describe a subset as "__out of __ parts" and write the fraction. Example: Given 3 red pencils and 2 blue, describe the subset of red pencils as "3 out of 5 parts" and write the fraction of the pencils that are red.	2.1.6 Match the number names first, second, third, etc. with an ordered set of up to 100 items. Example: Identify the seventeenth letter of the alphabet. 2.1.7 Identify odd and even numbers up to 100. Example: Find the odd numbers in this set: 44, 31, 100, 57, 28. 2.1.8 Recognize fractions as parts of a whole or parts of a group (up to 12 parts). Example: Divide a cardboard rectangle into 8 equal pieces. Shade 5 pieces and write the fraction for the shaded part. 2.1.9 Recognize, name, and compare the unit fractions: ½, 1/3, ¼, 1/5, 1/6, 1/8, 1/10, and 1/12. Example: Which is larger, 1/3 or 1/6? Explain your answer.

	1.1.10 Represent, compare, and interpret data using pictures and picture graphs. Example: Use a picture graph to show how many dogs, cats, etc. your friends have. Which kind of pet appears most often? Explain you answer. * whole numbers: 0, 1, 2, 3, etc.	2.1.10 Know that, when all fractional parts are included, the result is equal to the whole and to one. Example: What is another way of saying six sixths? Explain your answer. 2.1.11 Collect and record numerical data in systematic ways. Example: Measure the hand span in whole centimeters of each student in your class. Keep a record of the answers they give you. 2.1.12 Represent, compare, and interpret data using tables, tally charts, and bar graphs. Example: Make a tally of your classmates' favorite colors and draw a bar graph. Name the color that is most popular and the color that is the favorite of the fewest people. *whole numbers: 0, 1, 2, 3, etc. *set: collection of objects, numbers, etc.

Standard 2 – Computation *Students understand and describe simple additions and subtractions.*	***Standard 2 – Computation*** *Students demonstrate the meaning of addition and subtraction and use these operations to solve problems.*	***Standard 2 – Computation*** *Students solve simple problems involving addition and subtraction of numbers up to 100.*
K.2.1 Model addition by joining sets of objects (for any two sets with fewer than 10 objects when joined). Example: Put together 3 pencils and 2 pencils. Count the total number of pencils. K.2.2 Model subtraction by removing objects from sets (for numbers less than 10). Example: From a pile of 9 crayons, take away 6 crayons. Count the number of crayons left in the pile. K.2.3 Describe addition and subtraction situations (for numbers less than 10). Example: In the last example, explain what operation you were using when you took away crayons from the pile.	1.2.1 Show the meaning of addition (putting together, increasing) using objects. Example: Put together 3 pencils and 5 pencils. Tell how many pencils you have and explain what you are doing. 1.2.2 Show the meaning of subtraction (taking away, comparing, finding the difference) using objects. Example: Take away 6 blocks from a group of 10. Tell how many blocks are left and explain what you are doing. 1.2.3 Show equivalent forms of the same number (up to 20) using objects, diagrams, and numbers. Example: Write 15 as 8 + 7, 5 + 5 + 5, 10 + 5, 15 + 0, 17 – 2, etc. 1.2.4 Demonstrate mastery of the addition facts (for totals up to 20) and the corresponding subtraction facts. Example: Add 11 + 8, subtract 16 – 9, add 4 + 7. 1.2.5 Understand the meaning of the symbols +, -, and =. Example: Use symbols to write the number sentence “one added to three equals four.”	2.2.1 Model addition of numbers less than 100 with objects and pictures. Example: Use blocks to find the sum of 26 and 15. 2.2.2 Add two whole numbers less than 100 with and without regrouping. Example: 36 + 45 = ? 2.2.3 Subtract two whole numbers less than 100 without regrouping. Example: 86 – 55 = ? 2.2.4 Understand and use the inverse relationship between addition and subtraction. Example: Understand that 89 – 17 = 72 means that 72 + 17 = 89. 2.2.5 Use estimation to decide whether answers are reasonable in addition problems. Example: Your friend says that 13 + 24 = 57. Without solving, explain why you think the answer is wrong.

	1.2.6 Understand the role of zero in addition and subtraction. Example: You start with 6 eggs and then give away 6 eggs. How many eggs do you have now? 1.2.7 Understand and use the inverse relationship between addition and subtraction facts (such as 4 + 2 = 6, 6 – 2 = 4, etc.) to solve simple problems. Example: List three other facts using addition or subtraction that are related to 3 + 5 = 8.	2.2.6 Use mental arithmetic to add or subtract 0, 1, 2, 3, 4, 5, or 10 with numbers less than 100. Example: In a game, Mia and Noah are making addition problems. They make two two-digit numbers out of the four given numbers 1, 2, 3, and 4. Each number is used exactly once. The winner is the one who makes two numbers whose sum is the largest. Mia had 24 and 31; Noah had 21 and 43. Who won the game? How do you know? Show a way to beat both of them.

Standard 3 – Algebra and Functions *Students sort and classify objects.*	***Standard 3 – Algebra and Functions*** *Students use number sentences with the symbols +, -, and = to solve problems.*	***Standard 3 – Algebra and Functions*** *Students model, represent, and interpret number relationships to create and solve problems involving addition and subtraction.*
K.3.1 Identify, sort, and classify objects by size, number, and other attributes. Identify objects that do not belong to a particular group. Example: Find the squares in a collection of shapes. Sort these squares into large ones and small ones and explain how you decided which squares went in each pile. K.3.2 Identify, copy, and make simple patterns with numbers and shapes. Example: Make a pattern of squares and circles with one square, one circle, one square, one circle, etc.	1.3.1 Write and solve number sentences from problem situations involving addition and subtraction. Example: You have 3 pencils and your friend has 2 pencils. You want to know how many pencils you have altogether. Write a number sentence for this problem and use it to find the total number of pencils. 1.3.2 Create word problems that match given number sentences involving addition and subtraction. Example: Tell a story or draw a picture for a problem that can be solved using the number sentence 3 + 6 = 9. 1.3.3 Recognize and use the relationship between addition and subtraction. Example: Start with 8 blocks. Add 5 more blocks. How many do you have? Now take away 5 blocks. How many do you have now? Explain your answer. 1.3.4 Create and extend number patterns using addition. Example: A number pattern begins with these numbers 1, 3, 5, … Tell what the next number will be and explain how you decided on that number.	2.3.1 Relate problem situations to number sentences involving addition and subtraction. Example: You have 13 pencils and your friend has 12 pencils. You want to know how many pencils you have altogether. Write a number sentence for this problem and use it to find the total number of pencils. 2.3.2 Use the commutative* and associative* rules for addition to simplify mental calculations and to check results. Example: Add the numbers 5, 17, and 13 in this order. Now add them in the order of 17, 13, and 5. Which was easier? Why? 2.3.3 Recognize and extend a linear pattern by its rules. Example: One horse has 4 legs, two horses have 8 legs, and so on. Continue the pattern to find how many legs five horses have. 2.3.4 Create, describe, and extend number patterns using addition and subtraction. Example: What is the next number: 23, 21, 19, 17, …? How did you find your answer?

		*communicative rule: the order when adding numbers makes no difference (e.g., 5 + 3 = 3 + 5) *associative rule: the grouping when adding numbers makes no difference (e.g., 5 + 3 + 2, adding 5 and 3 and then adding 2 is the same as 5 added to 3 + 2). Note that this rule is not true for subtraction.

Standard 4 – Geometry *Students identify common objects around them and describe their geometric features and position.*	***Standard 4 – Geometry*** *Students identify common geometric shapes, classify them by common attributes, and describe their relative position or their location in space.*	***Standard 4 – Geometry*** *Students identify and describe the attributes of common shapes in the plane and of common objects in space.*
K.4.1 Identify and describe common geometric objects: circle, triangle, square, rectangle, and cube. Example: Look for cubes and circles at home and at school. K.4.2 Compare and sort common objects by position, shape, size, roundness, and number of corners. Example: Compare the numbers of corners of triangles, squares, and rectangles. K.4.3 Identify and use the terms: inside, outside, between, above, and below. Example: Tell when a block is inside or outside a box.	1.4.1 Identify, describe, compare, sort, and draw triangles, rectangles, squares, and circles. Example: Draw a square and a circle and write their names next to them. 1.4.2 Identify triangles, rectangles, squares, and circles as the faces* of three-dimensional objects. Example: Look at a collection of solid objects and find triangles and squares on their sides. 1.4.3 Classify and sort familiar plane and solid objects by position, shape, size, roundness, and other attributes. Explain the rule you used. Example: Group a collection of objects by something they have in common. Explain your grouping. 1.4.4 Identify objects as two- or three-dimensional. Example: Sort various objects (cube, square, triangle, prism) into the categories “two-dimensional” and “three-dimensional.” Explain your choices.	2.4.1 Construct squares, rectangles, triangles, cubes and rectangular prisms* with appropriate materials. Example: Use blocks to make a rectangular prism. 2.4.2 Describe, classify, and sort plane and solid geometric shapes (triangle, square, rectangle, cube, rectangular prism) according to the number and shape of faces*, and the number of edges and vertices*. Example: How many corners does a cube have? 2.4.3 Investigate and predict the result of putting together and taking apart two- and three-dimensional shapes. Example: Use objects or a drawing program to find other shapes that can be made from a rectangle and a triangle. Use sketches or a drawing program to show several ways that a rectangle can be divided into three triangles. 2.4.4 Identify congruent* two-dimensional shapes in any position. Example: In a collection of rectangles, pick out those that are the same shape and size.

	1.4.5 Give and follow directions for find a place or object. Example: Show someone how to get to the school library by making a map or diagram. 1.4.6 Arrange and describe objects in space by position and direction: near, far, under, over, up, down, behind, in front of, next to, to the left or right of. Example: Name objects that are near your desk and objects that are in front of it. Explain why there may be some objects in both groups. 1.4.7 Identify geometric shapes and structures in the environment and specify their location. Example: Find as many rectangles as you can in your classroom. Record the rectangles that you found by making drawings or using a camera. *face: flat side	2.4.5 Recognize geometric shapes and structures in the environment and specify their locations. Example: Look for combinations of shapes in the buildings around you. *rectangular prism: box with 6 rectangles for sides, like a cereal box *face: flat side, like the front of the cereal box *vertices: corners (vertex: corner) *congruent: same shape and size, like the front and back of a cereal box.

Standard 5 – Measurement *Students understand the concept of time and units to measure it. They understand that objects have length, capacity, weight, and temperature, and that they can compare objects using these qualities.*	***Standard 5 – Measurement*** *Students learn how to measure length, as well as how to compare, order, and describe other kinds of measurement.*	***Standard 5 – Measurement*** *Students understand how to measure length, temperature, capacity, weight, and time in standard units.*
K.5.1 Make direct comparisons of the length, capacity, weight, and temperature of objects and recognize which object is shorter, longer, taller, lighter, heavier, warmer, cooler or holds more. Example: Hold two blocks side by side to see which is shorter. Hold one in each hand to see which is heavier. K.5.2 Understand concepts of time: morning, afternoon, evening, today, yesterday, tomorrow, week, month, and year. Understand that clocks and calendars are tools that measure time. Example: Use a calendar to find the number of days in the month of your birthday.	1.5.1 Measure the length of objects by repeating a non-standard unit or a standard unit. Example: Measure the length of your desk in pencil-lengths. 1.5.2 Use different units to measure the length of the same object and predict whether the measure will be greater or smaller when a different unit is used. Example: If you measure your desk with a shorter pencil, will the number of pencil-lengths be more or less? Measure the desk to find out your answer. 1.5.3 Recognize the need for a fixed unit of length. Example: Give students different lengths of string and have them measure the width of a doorway. Talk about why their answers are different and the kinds of problems this can cause. 1.5.4 Measure and estimate the length of an object to the nearest inch and centimeter. Example: Have some students measure the width of the doorway in	2.5.1 Measure and estimate length to the nearest inch, foot, yard, centimeter, and meter. Example: Measure the length of your classroom to the nearest foot. 2.5.2 Describe the relationships among inch, foot, and yard. Describe the relationship between centimeter and meter. Example: How many inches are in a yard? 2.5.3 Decide which unit of length is most appropriate in a given situation. Example: Would you use yards or inches to measure the length of your school books? Explain your answer. 2.5.4 Estimate area and use a given object to measure the area of other objects. Example: Make a class estimate the number of sheets of notebook paper that would be needed to cover the classroom door. Then use measurements to compute the area of the door.

	inches and some measure it in centimeters. Discuss why these are better ways of measuring than using the pieces of string. 1.5.5 Compare and order objects according to area, capacity, weight, and temperature, using direct comparison or a non-standard unit. Example: Use a scale or balance to see how many crayons weigh the same as a shoe. 1.5.6 Tell time to the nearest half-hour and relate time events (before/after, shorter/longer). Example: Is recess before or after lunch? 1.5.7 Identify and give the values of pennies, nickels, and dimes. Example: How many pennies have the same value as two nickels?	2.5.5 Estimate and measure capacity using cups and pints. Example: Make a reasonable estimate of the number of pints a juice pitcher holds. 2.5.6 Estimate weight and use a given object to measure the weight of other objects. Example: About how many jellybeans will you need to put on one side of a balance scale to balance with a box of chalk? Count out the number of jellybeans that you guessed would be needed and see whether your estimate was close. Explain the results of your estimation and weighing. 2.5.7 Recognize the need for a fixed unit of weight. Example: Estimate the number of paperclips needed to balance a box of chalk. Will it be the same as the number of jellybeans? Explain your answer. 2.5.8 Estimate temperature. Read a thermometer in Celsius and Fahrenheit. Example: What do you think the temperature is today? Look at the thermometer to check. 2.5.9 Tell time to the nearest quarter hour, be able to tell five-minute intervals, and know the difference between a.m. and p.m. Example: When does your favorite TV program start? 2.5.10 Know relationships of time: seconds in a minute, minutes in an hour, hours in a day, days in a week, and days, weeks,

		and months in a year. Example: How many days are in a year? 2.5.11 Find the duration of intervals of time in hours. Example: Your trip began at 9:00 a.m. and ended at 3:00 p.m. How long were you traveling? 2.5.12 Find the value of a collection of pennies, nickels, dimes, quarters, half-dollars, and dollars? Example: You have 3 pennies, 4 nickels, and 2 dimes. How much money do you have? Explain your answer.

Standard 6 – Problem Solving *Students make decisions about how to set up a problem*	***Standard 6 – Problem Solving*** *Students make decisions about how to set up a problem.*	***Standard 6 – Problem Solving*** *Students make decisions about how to set up a problem.*
Students make decisions about how to set up a problem. K.6.1 Choose the approach, materials, and strategies to use in solving problems. Example: Solve the problem: "There are four blocks on the table and a box of blocks that is closed. The teacher says that there are five blocks in the box. Find the number of blocks in all, without opening the box". Decide to draw a picture. K.6.2 Use tools such as objects or drawings to model problems. Example: In the first example, draw a picture of the four blocks that you can see, and then draw five more blocks for the ones that you cannot see.	**Students make decisions about how to set up a problem.** 1.6.1 Choose the approach, materials, and strategies to use in solving problems. Example: Solve the problem: "The number 10 can be written in different ways using addition: 10 = 4 + 6 or 10 = 1 + 9 … Find how many ways you can write 10 by adding two numbers." Use blocks to set up the problem. 1.6.2 Use tools such as objects or drawings to model problems. Example: In the first example, show the number 10 using addition of whole numbers by counting out ten blocks. Divide them into two piles and write a number sentence that shows the number in each pile of blocks.	**Students make decisions about how to set up a problem.** 2.6.1 Choose the approach, materials, and strategies to use in solving problems. Example: Solve the problem: "Count the number of squares on the surface of a cube. Put two cubes together and count the number of visible squares. Repeat this step with 3, 4, 5, … cubes in a line. Find a rule for the number of squares." Use blocks to set up the problem. 2.6.2 Use tools such as objects or drawings to model problems. Example: In the first example, place blocks together. Each time you add a block, count the number of squares and record it.

Students solve problems in reasonable ways and justify their reasoning.	**Students solve problems and justify their reasoning.**	**Students solve problems and justify their reasoning.**
K.6.3 Explain the reasoning used with concrete objects and pictures. Example: In the first example, count the number of blocks that you have drawn and write the number that represents the total. K.6.4 Make precise calculations and check the validity of the results in the context of the problem. Example: In the first example, open the box of blocks and place them on the table. Count the total number of blocks on the table to see whether your drawing was correct.	1.6.3 Explain the reasoning used and justify the procedures selected in solving a problem. Example: In the first example, make two piles of ten blocks; separate one block from the first pile and count the number of blocks left. Separate two blocks from the second pile and count the number left. Describe any patter of numbers that you find. 1.6.4 Make precise calculations and check the validity of the results in the context of the problem. Example: In the first example, check your results by setting out 10 blocks showing 1 + 9, another 10 blocks showing 2 + 8, and so on. Continue to count out piles of 10 blocks to find the total number of ways that ten blocks can be separated into two piles. Describe the patterns that you find and how you find that you have found all of them. 1.6.5 Understand and use connections between two problems. Example: Use the problem you have just solved to find how many ways you can write 16 by adding two numbers.	2.6.3 Explain the reasoning used and justify the procedures selected in solving a problem. Example: In the first example, notice that the number goes up by 4 each time a block is added. Observe that, as you add each cube, you gain 6 squares but lose 2 where the blocks are joined. 2.6.4 Make precise calculations and check the validity of the results in the context of the problem. Example: In the first example, check your results by set ting out 10 blocks and counting the number of squares on each long side and then the two at the ends. See how this fits with your rule of adding 4 each time. 2.6.5 Understand and use connections between two problems. Example: Use the method of the problem you have just solved to find what happens when the cubes are not all in a line.