Grade 1	Grade 2	Grade 3
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.*	***Standard 1 – Number Sense*** *Students understand the relationships among numbers, quantities, and place value in whole numbers* up to 1,000. They understand the relationship among whole numbers, simple fractions, and decimals.*
1.1.1 Count, read, and write whole numbers* up to 100. Example: Write 72 for the number "seventy-two."	2.1.1 Count by ones, twos, fives, and tens to 100. Example: Count 74 pencils by groups of tens and twos.	3.1.1 Count, read, and write whole numbers* up to 1,000. Example: Write 349 for the number "three hundred forty-nine".
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.	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.?	3.1.2 Identify and interpret place value in whole numbers up to 1,000. Example: Understand the 7 in 479 represents 7 tens or 70.
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.	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.	3.1.3 Use words, models, and expanded form to represent numbers up to 1,000. Example: Recognize that 492 = 400 + 90 + 2.
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.	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.	3.1.4 Identify any number up to 1,000 in various combinations of hundreds, tens, and ones. Example: 325 can be written as 3 hundreds, 2 tens, and 5 ones, or as 2 hundreds 12 tens, and 5 ones, etc.
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.	2.1.5 Compare whole numbers up to 100 and arrange them in numerical order. Example: Put the number in order of size: 95, 28, 42, 31.	3.1.5 Compare whole numbers up to 1,000 and arrange them in numerical order. Example: What is the smallest whole number you can make using the digits 4, 9, and 1? Use each digit

		exactly once.
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.	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.	3.1.6 Rounds numbers less than 1,000 to the nearest ten and the nearest hundred. Example: Round 548 to the nearest ten.
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.	2.1.7 Identify odd and even numbers up to 100. Example: Find the odd numbers in this set: 44, 31, 100, 57, 28.	3.1.7 Identify odd and even numbers up to 1,000 and describe their characteristics. Example: Find the even number: 47, 106, 357, 629.
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.	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.	3.1.8 Show equivalent fractions* using equal parts. Example: Draw pictures to show that 3/5, 6/10, and 9/15 are equivalent fractions.
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.	2.1.9 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.	3.1.9 Identify and use correct names for numerators and denominators. Example: in the fraction 3/5, name the numerator and denominator.

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.	3.1.10 Given a pair of fractions, decide which is larger or smaller by using objects or pictures. Example: Is ¾ of a medium pizza larger or smaller than ½ of a medium pizza? Explain your answer. 3.1.11 Given a set* of objects or a picture, name and write a decimal to represent tenths and hundredths. Example: You have a pile of 100 beans and 72 of them are lima beans. Write the decimal that represents lima beans as a part of the whole pile of beans. 3.1.12 Given a decimal for tenths, show it as a fraction using a place-value model. Example: Show the decimal 0.7 as a fraction using pennies. 3.1.13 Interpret data displayed in a circle graph and answer questions about the situation. Example: Have the students in your class choose the pizza they like best from these choices: cheese, sausage, and pepperoni. Use a spreadsheet to enter the number of students who chose each kind and make a circle graph of the data. Determine the most popular and the least popular kind of pizza, and explain what the circle and each pie slice represent.

		3.1.14 Identify whether everyday events are certain, likely, unlikely, or impossible. Example: It is raining in your neighborhood. Is it certain, likely, unlikely, or impossible that the tree in your front yard will get wet? 3.1.15 Record the possible outcomes for a simple probability experiment. Example: Predict how many heads and tails will occur if a coin is tossed 10 times. Have a partner toss a coin while you keep a tally of the outcomes. Exchange places with your partner and repeat the experiment. Explain your results to the class. *whole numbers: 0, 1, 2, 3, etc. *equivalent fractions: fractions with the same value (e.g., ½, $\frac{2}{4}$, $\frac{3}{6}$, etc.) *set: collection of objects, numbers, etc.

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.*	***Standard 2 – Computation*** *Students solve problems involving addition and subtraction of whole numbers. They model and solve simple problems involving multiplication and division.*
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.	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.	3.2.1 Add and subtract whole numbers up to 1,000 with or without regrouping, using relevant properties of the number system. Example: 854 – 427 = ? Explain your method.
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.	2.2.2 Add two whole numbers less than 100 with and without regrouping. Example: 36 + 45 = ?	3.2.2 Represent the concept of multiplication as repeated addition. Example: Lynn made 3 baskets each week for 4 weeks. Draw a picture to show how many baskets she made.
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.	2.2.3 Subtract two whole numbers less than 100 without regrouping. Example: 86 – 55 = ?	3.2.3 Represent the concept of division as repeated subtraction, equal sharing, and forming equal groups. Example: Bob shared 10 cookies among 5 friends. Draw a picture to show how many cookies each friend got.
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.	2.2.4 Understand and use the inverse relationship between addition and subtraction. Example: Understand that 89 – 17 = 72 means that 72 + 17 = 89.	3.2.4 Know and use the inverse relationship between multiplication and division facts, such as 6 X 7 = 42, 42 ÷ 7 = 6, 7 x 6 = 42, 42 ÷ 6 = 7. Example: Find other facts related to 8 x 3 = 24.
1.2.5 Understand the meaning of the symbols +, -, and =. Example: Use symbols to write the number sentence "one added to three equals four."	2.2.5 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.	3.2.5 Show mastery of multiplication facts for 2, 5, and 10.

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.	Example: Know the answer to 6 x 5. 3.2.6 Add and subtract simple fractions with the same denominator. Example: Add 3/8 and 1/8. Explain your answer. 3.2.7 Use estimation to decide whether answers are reasonable in addition and subtraction problems. Example: Your friend says that 79 – 22 = 27. Without solving, explain why you think the answer is wrong. 3.2.8 Use mental arithmetic to add or subtract with numbers less than 100. Example: Subtract 35 from 86 without using pencil and paper.

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.*	***Standard 3 – Algebra and Functions*** *Students select appropriate symbols, operations, and properties to represent, describe, simplify, and solve simple number and functional relationships.*
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?	3.3.1 Represent relationships of quantities in the form of a numeric expression or equation. Example: Bill's mother gave him money to buy three drinks that cost 45 cents each at the concession stand. When he returned to the bleachers, he gave 25 cents change to his mother. Write an equation to find the amount of money Bill's mother originally gave him. 3.3.2 Solve problems involving numeric equations. Example: Use your equation from the last example to find the amount of money that Bill's mother gave him, and justify your answer. 3.3.3 Choose appropriate symbols for operations and relations to make a number sentence true. Example: What symbol is needed to make the number sentence 4 _ 3 = 12 true? 3.3.4 Understand and use the commutative* and associative* rules of multiplication. Example: Multiply the numbers 7,2, and 5 in this order. Now multiply them in the order 2, 5, and 7. Which was

	*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.	easier? Why? 3.3.5 Create, describe, and extend number patterns using multiplication. Example: What is the next number: 3, 6, 12, 24, …? How did you find your answer? 3.3.6 Solve simple problems involving a functional relationship between two quantities. Example: Ice cream sandwiches cost 20 cents each. Find the cost of 1, 2, 3, 4, … ice cream sandwiches. What pattern do you notice? Continue the pattern to find the cost of enough ice cream sandwiches for the class. 3.3.7 Plot and label whole numbers on a number line up to 10. Example: Mark the position of 7 on a number line up to 10. *commutative rule: the order when multiplying numbers make no difference (e.g., 5 X 3 = 3 X 5), but note that his rule is not true for division *associative rule: the grouping when multiplying numbers makes no difference (e.g., in 5 x 3 x 2, multiplying 5 and 3 and then multiplying by 2 is the same as 5 multiplied by 3 X 2), but note that this rule is not true for division.

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.*	***Standard 4 – Geometry*** *Students describe and compare the attributes of plane and solid geometric shapes and use their understanding to show relationships and solve problems.*
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.	3.4.1 Identify quadrilaterals* as four-sided shapes. Example: Which of these are quadrilaterals: square, triangle, rectangle? 3.4.2 Identify right angles in shapes and objects and decide whether other angles are greater or less than a right angle. Example: Identify right angles in your classroom. Open the classroom door until it makes a right angle with one wall and explain what you are doing. 3.4.3 Identify, describe, and classify: cube, sphere*, prism*, pyramid, cone, cylinder. Example: Describe the faces of a pyramid and identify its characteristics. 3.4.4 Identify common solid objects that are the parts needed to make a more complex solid object. Example: Describe and draw a house made from a prism and a pyramid.

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.	3.4.5 Draw a shape this is congruent* to another shape. Example: Draw a triangle that is congruent to a given triangle. You may use a ruler and pencil or the drawing program on a computer. 3.4.6 Use the terms point, line, and line segment in describing two-dimensional shapes. Example: Describe the way a triangle is made of points and line segments and how you know it is a triangle. 3.4.7 Draw line segments and lines. Example: Draw a line segment three inches long. 3.4.8 Identify and draw lines of symmetry in geometric shapes (by hand or using technology). Example: Use pencil and paper or a drawing program to draw lines of symmetry in a square. Discuss your findings. 3.4.9 Sketch the mirror image reflections of shapes. Example: Hold up a cardboard letter F to a mirror. Draw the letter and the shape you see in the mirror. 3.4.10 Recognize geometric shapes and their properties in the environment and specify their locations. Example: Write the letters of the alphabet and draw all the lines of

		symmetry that you see. *quadrilateral: a two-dimensional figure with four sides *sphere: round ball like a baseball *prism: solid shape with fixed cross-section (a right prism is a solid shape with two parallel faces that are congruent polygons and other faces that are rectangles. *congruent: two figures that are the same shape and size

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.*	***Standard 5 – Measurement*** *Students choose and use appropriate units and measurement tools for length, capacity, weight, temperature, time and money.*
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 inches and some measure it in centimeters. Discuss why these are	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.	3.5.1 Measure line segments to the nearest half-inch. Example: Measure the length of a side of a triangle. 3.5.2 Add units of length that may require regrouping of inches to feet or centimeters to meters. Example: Add the lengths of three sheets of paper. Give your answer in feet and inches. 3.5.3 Find the perimeter of a polygon*. Example: Find the perimeter of a table in centimeters. Explain your method. 3.5.4 Estimate or find the area of shapes by covering them with squares. Example: How many square tiles do we need to cover this desk?

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,	3.5.5 Estimate or find the volume of objects by counting the number of cubes that would fill them. Example: How many of these cubes will fill the box? 3.5.6 Estimate and measure capacity using quarts, gallons, and liters. Example: This bottle holds one liter. Estimate how many liters the sink holds. 3.5.7 Estimate and measure weight using pounds and kilograms. Example: Estimate the weight of your book bag in pounds. 3.5.8 Compare temperatures in Celsius and Fahrenheit. Example: Measure the room temperature using a thermometer that has both Celsius and Fahrenheit units. If the temperature in the room measures 70˚F, will the Celsius measurement be higher or lower? 3.5.9 Tell time to the nearest minute and find how much time has elapsed. Example: You start a project at 9:10 a.m. and finish the project at 9:42 a.m. How much time has passed? 3.5.10 Find the value of any collection of coins and bills. Write the amounts less than a dollar using the ¢ symbol and write larger amounts in decimal notation using the $ symbol.

	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.	Example: You have 5 quarters and 2 dollar bills. How much money is that? Write the amount. 3.5.11 Use play or real money to decide whether there is enough money to make a purchase. Example: You have $5. Can you buy two books that cost $2.15 each? What about three books that cost $1.70 each. Explain how you know. 3.5.12 Carry out simple unit conversions within a measurement system (e.g., centimeters to meters, hours to minutes). Example: How many minutes are in 3 hours? *polygon: two-dimensional shape with straight sides (e.g., triangle, rectangle, pentagon)

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. 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 make decisions about how to approach problems and communicate their ideas.** 3.6.1 Analyze problems by identifying relationships, telling relevant from irrelevant information, sequencing and prioritizing information, and observing patterns. Example: Solve the problem: "Start with any number. If it is even, halve it. If it is odd, add 1. Do the same with the result and keep doing that. Find what happens by trying different numbers." Try two or three numbers and look for patterns. 3.6.2 Decide when and how to break a problem into simpler parts. Example: In the first example, find what happens to all the numbers up to 10.
Students solve problems and justify their reasoning. 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	**Students solve problems and justify their reasoning.** 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	**Students use strategies, skills, and concepts in finding and communicating solutions to problems.** 3.6.3 Apply strategies and results from simpler problems to solve more complex problems. Example: In the first example, use your results for the numbers up to 10

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.	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.	to find what happens to all the number up to 10. 3.6.4 Express solutions clearly and logically by using the appropriate mathematical terms and notation. Support solutions with evidence in both verbal and symbolic work. Example: In the first example, explain what happens to all the numbers that you tried. 3.6.5 Recognize the relative advantages of exact and approximate solutions to problems and give answers to a specified degree of accuracy. Example: Measure the length and width of a room to the nearest meter to find how many student desks will fit in it. Would this be an accurate enough method if you were carpeting the room? 3.6.6 Know and use strategies for estimating results of whole-number addition and subtraction. Example: You buy 2 bags of candy for $1.05 each. The cashier tells you that will be $1.70. Does that surprise you? Why or why not? 3.6.7 Make precise calculations and check the validity of the results in the context of the problem. Example: In the first example, notice that the result of adding 1 to an odd number is always even. Use this to check your calculations.

		Students determine when a solution is complete and reasonable and move beyond a particular problem by generalizing to other situations. 3.6.8 Decide whether a solution is reasonable in the context of the original situation. Example: In the example about fitting desks into a room, would an answer of 1,000 surprise you? 3.6.9 Note the method of finding the solution and show a conceptual understanding of the method by solving similar problems. Example: Change the first example so that you multiply odd numbers by 2 or 3 or 4 or 5, before adding 1. Describe the pattern you see.