Grade 3	Grade 4	Grade 5
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.*	***Standard 1 - Number Sense*** *Students understand the place value of whole numbers* and decimals to two decimal places and how whole numbers and decimals relate to simple fractions.*	***Standard 1 - Number Sense*** *Students compute with whole numbers*, decimals, and fractions and understand the relationship among decimals, fractions, and percents. They understand the relative magnitudes of numbers. They understand Prime* and composite* numbers.*
3.1.1 Count, read, and write whole numbers* up to 1,000. Example: Write 349 for the number "three hundred forty-nine". 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. 3.1.3 Use words, models, and expanded form to represent numbers up to 1,000. Example: Recognize that 492 = 400 + 90 + 2. 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.	4.1.1 Read and write whole numbers up to 1,000,000. Example: Read aloud the number 394,734. 4.1.2 Identify and write whole numbers up to 1,000,000, given a place-value model. Example: Write the number that has 2 hundred thousands, 7 ten thousands, 4 thousands, 8 hundreds, 6 tens, and 2 ones. 4.1.3 Round whole numbers up to 10,000 to the nearest ten, hundred, and thousand. Example: is 7,683 closer to 7,600 or 7,700? Explain your answer. 4.1.4 Order and compare whole numbers using symbols for "less than" (<), "equal to" (=), and "greater than" (>). Example: Put the correct symbol in 328 __ 142.	5.1.1 Convert between numbers in words and numbers in figures, for numbers up to millions and decimals to thousandths. Example: Write the number 198,536 in words. 5.1.2 Round whole numbers and decimals to any place value. Example: Is 7,683,559 closer to 7,600,000 or 7,700,000? Explain your answer. 5.1.3 Arrange in numerical order and compare whole numbers or decimals to two decimal places by using the symbols for less than (<), equals (=), and greater than (>). Example: Write from smallest to largest: 0.5, 0.26, 0.08. 5.1.4 Interpret percents as a part of a hundred. Find decimal and percent equivalents for common fractions and explain why they represent the same value.

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.

3.1.6 Rounds numbers less than 1,000 to the nearest ten and the nearest hundred.

Example: Round 548 to the nearest ten.

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.

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.

3.1.9 Identify and use correct names for numerators and denominators.

Example: in the fraction 3/5, name the numerator and denominator.

4.1.5 Rename and rewrite whole numbers as fractions.

Example: $3 = \frac{6}{2} = \frac{9}{3} = \frac{?}{4} = \frac{?}{5}$

4.1.6 Name and write mixed numbers, using objects or pictures.

Example: You have 5 whole straws and half a straw. Write the number that represents these objects.

4.1.7 Name and write mixed numbers as improper fractions, using objects or pictures.

Example: Use a picture of 3 rectangles, each divided into 5 equal pieces, to write $2\frac{3}{5}$ as an improper fraction.

4.1.8 Write tenths and hundredths in decimal and fraction notations. Know the fraction and decimal equivalents for halves and fourths (e.g., $^1/_2 = 0.5 = 0.50$, $^7/_4 = 1\ ^3/_4 = 1.75$).

Example: Write $\frac{26}{10}$ and 2 ¾ as decimals.

4.1.9 Round two-place decimals to tenths or to the nearest whole number.

Example: You ran the 50-yard dash in 6.73 seconds. Round your time to the nearest tenth.

*whole numbers: 0, 1, 2, 3, etc.

Example: Shade a 100-square grid to show 30%. What fraction is this?

5.1.5 Explain different interpretations of fractions: as parts of a whole, parts of a set, and division of whole numbers by whole numbers.

Example: What fraction of a pizza will each person get when 3 pizzas are divided equally among 5 people?

5.1.6 Describe and identify prime and composite numbers.

Example: Which of the following numbers are prime: 3, 7, 12, 17, 18? Justify your choices.

5.1.7 Identify on a number line the relative position of simple positive fractions, positive mixed numbers, and positive decimals.

Example: Find the positions on a number line of 1¼ and 1.4.

*whole numbers: 0, 1, 2, 3, etc.

*prime number: number that can be evenly divided only by 1 and itself (e.g., 2, 3, 5, 7, 11)

*composite number: not a prime number (e.g., 4, 6, 8, 9, 10)

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, 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 solve problems involving addition and subtraction of whole numbers. They model and solve simple problems involving multiplication and division.*	***Standard 2 – Computation*** *Students solve problems involving addition, subtraction, multiplication, and division of whole numbers and understand the relationships among these operations. They extend their use and understanding or whole numbers to the addition and subtraction of simple fractions and decimals.*	***Standard 2 – Computation*** *Students solve problems involving multiplication and division of whole numbers and solve problems involving addition, subtraction, and simple multiplication and division of fractions and decimals.*
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. 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. 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. 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.	4.2.1 Understand and use standard algorithms* for addition and subtraction. Example: 45,329 + 6,984 = ?, 36,296 = 12,075 = ? 4.2.2 Represent as multiplication any situation involving repeated addition. Example: Each of the 20 students in your physical education class has 3 tennis balls. Find the total number of tennis balls in the class. 4.2.3 Represent as division any situation involving the sharing of objects or the number of groups of shared objects. Example: Divide 12 cookies equally among 4 students. Divide 12 cookies equally so that each person gets 4 cookies. Compare your answers and methods. 4.2.4 Demonstrate mastery of the multiplication tables for numbers between 1 and 10 and of the corresponding division facts. Example: Know the answers to 9 x 4	5.2.1 Solve problems involving multiplication and division of any whole numbers. Example: 2,867 x 34 = ? Explain your answer. 5.2.2 Add and subtract fractions (including mixed numbers) with different denominators. Example: $3\frac{4}{5} - 2\frac{2}{3} = ?$ 5.2.3 Use models to show an understanding of multiplication and division of fractions. Example: Draw a rectangle 5 squares long and 3 squares wide. Shade $\frac{4}{5}$ of the rectangle, starting from the left. Shade $\frac{2}{3}$ of the rectangle, starting from the top. Look at the fraction of the squares that you have double-shaded and use that to show how to multiply $\frac{4}{5}$ by $\frac{2}{3}$. 5.2.4 Multiply and divide fractions to solve problems. Example: You have 3½ pizzas left from a party. How many people can

3.2.5 Show mastery of multiplication facts for 2, 5, and 10. Example: Know the answer to 6 x 5.	and 35 ÷7. 4.2.5 Use a standard algorithm to multiply numbers up to 100 by numbers up to 10, using relevant properties of the number system. Example: 67 x 3 = ?	have ¼ of a pizza each? 5.2.5 Add and subtract decimals and verify the reasonableness of the results. Example: Compute 39.46 – 20.89 and check the answer by estimating.
3.2.6 Add and subtract simple fractions with the same denominator. Example: Add 3/8 and 1/8. Explain your answer.	4.2.6 Use a standard algorithm to divide numbers up to 100 by numbers up to 10, without remainders, using relevant properties of the number system. Example: 69 ÷ 3 = ?	5.2.6 Use estimation to decide whether answers are reasonable in addition, subtraction, multiplication, and division problems. Example: Your friend says that 2,867 x 34 = 20,069. Without solving, explain why you think the answer is wrong.
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.	4.2.7 Understand the special properties of 0 and 1 in multiplication and division. Example: Know that 73 x 0 = 0 and that 42 ÷ 1 = 42.	5.2.7 Use mental arithmetic to add or subtract simple decimals. Example: Add 0.006 to .027 without using pencil and paper.
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.	4.2.8 Add and subtract simple fractions with different denominators, using objects or pictures. Example: Use a picture of a circle divided into 6 equal pieces to find $\frac{5}{6} - \frac{1}{3}$.	
	4.2.9 Add and subtract decimals (to hundredths), using objects or pictures. Example: Use coins to help you find $0.43 - $0.29.	

	4.2.10 Use a standard algorithm to add and subtract decimals (to hundredths). Example: 0.74 + 0.800 = ? 4.2.11 Know and use strategies for estimating results of any whole-number computations. Example: your friend says that 45,329 ÷ 6,984 = 5,213. Without solving, explain why you think the answer is wrong. 4.2.12 Use mental arithmetic to add or subtract numbers rounded to hundreds or thousands. Example: Add 3,000 to 8,000 without using pencil and paper. *algorithm: a step-by-step procedure for solving a problem.	

Standard 3 – Algebra and Functions *Students select appropriate symbols, operations, and properties to represent, describe, simplify, and solve simple number and functional relationships.*	***Standard 3 – Algebra and Functions*** *Students use and interpret variables, mathematical symbols, and properties to write and simplify numerical expressions and sentences. They understand relationships among the operations of addition, subtraction, multiplication, and division.*	**Standard 3 – Algebra and Functions** *Students use variables in simple expressions, compute the value of an expression for specific values of the variable, and plot and interpret the results. They use two-dimensional coordinate grids to represent points and graph lines.*
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?	4.3.1 Use letters, boxes, or other symbols to represent any number in simple expressions, equations, or inequalities (i.e., demonstrate an understanding and the use of the concept of a variable). Example: In the expression $3x + 5$, what does x represent? 4.3.2 Use and interpret formulas to answer questions about quantities and their relationships. Example: Write the formula for the area of a rectangle in words. Now let l stand for the length, w for the width, and A for the area. Write the formula using these symbols. 4.3.3 Understand that multiplication and division are performed before addition and subtraction in expressions without parentheses. Example: You go to a store with 90¢ and buy 3 pencils that cost 20¢ each. Write an expression for the amount of money you have left and find its value.	5.3.1 Use a variable to represent an unknown number. Example: When a certain number is multiplied by 3 and then 5 is added, the result is 29. Let x stand for the unknown number and write an equation for the relationship. 5.3.2 Write simple algebraic expressions in one or two variables and evaluate them by substitution. Example: Find the value of $5x + 2$ when $x = 3$. 5.3.3 Use the distributive property* in numerical equations and expressions. Example: Rewrite 3(16-11) by removing the parentheses.

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 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.

4.3.4 Understand that an equation such as $y = 3x + 5$ is a rule for find a second number when a first number is given.

Example: Use the formula $y = 3x + 5$ to find the value of y when $x = 6$.

4.3.5 Continue number patterns using multiplication and division.

Example: What is the next number: 160, 80, 40, 20, …? Explain your answer.

4.3.6 Recognize and apply the relationships between addition and multiplication, between subtraction and division, and the inverse relationship between multiplication and division to solve problems.

Example: Find another way of writing 13 + 13 + 13 + 13 + 13.

4.3.7 Relate problem situations to number sentences involving multiplication and division.

Example: you have 150 jelly beans to share among the 30 members of your class. Write a number sentence for this problem and use it to find the number of jelly beans each person will get.

4.3.8 Plot and label whole numbers on a line up to 100. Estimate positions on the number line.

Example: Draw a number line and label it with 0, 10, 20, 30, …, 90, 100. Estimate the position of 77 on this number line.

5.3.4 Identify and graph ordered pairs of positive numbers.

Example: Plot the points (3, 1), (6, 2), and (9, 3). What do you notice?

5.3.5 Find ordered pairs (positive numbers only) that fit a linear equation, graph the ordered pairs, and draw the line they determine.

Example: For $x = 1, 2, 3$, and 4, find points that fit the equation $y = 2x + 1$. Plot those points on graph paper and join them with a straight line.

5.3.6 Understand that the length of a horizontal line segment on a coordinate plane equals the difference between the x-coordinates and that the length of a vertical line segment on a coordinate plane equals the difference between the y-coordinates.

Example: Find the distance between the points (2, 5) and (7, 5) and the distance between the points (2, 1) and (2, 5).

5.3.7 Use information taken from a graph or equation to answer questions about a problem situation.

Example: The speed (v feet per second) of a car t seconds after it starts is given by the formula $v = 12t$. Find the car's speed after 5 seconds.

*distributive property: e.g., 3 x (5 ÷ 2) = 3 x 5 * 3 x 2

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.*	***Standard 4 – Geometry*** *Students show an understanding of plane and solid geometric objects and use this knowledge to show relationships and solve problems.*	***Standard 4 – Geometry*** *Students identify, describe, and classify the properties of plane and solid geometric shapes and the relationships between them.*
3.4.1 Identify quadrilaterals* as four-sided shapes. Example: Which of these are quadrilaterals: square, triangle, and 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.	4.4.1 Identify, describe, and draw rays, right angles, acute angles, obtuse angles and straight angles using appropriate mathematical tools and technology. Example: Draw two rays that meet in an obtuse angle. 4.4.2 Identify, describe and draw parallel, perpendicular, and oblique lines using appropriate mathematical tools and technology. Example: Use the markings on the gymnasium floor to identify two lines that are parallel. Place a jump rope across the parallel lines and identify any obtuse angles created by the jump rope and the lines. 4.4.3 Identify, describe and draw parallelograms*, rhombuses*, and trapezoids*, using appropriate mathematical tools and technology. Example: Use a geoboard to make a parallelogram. How do you know it is a parallelogram? 4.4.4 Identify congruent* quadrilaterals* and give reasons for congruence using sides, angles, parallels and perpendiculars.	5.4.1 Measure, identify, and draw angles, perpendicular and parallel lines, rectangles, triangles, and circles by using appropriate tools (e.g., ruler, compass, protractor, appropriate technology, media tools). Example: Draw a rectangle with sides 5 in and 3 in. 5.4.2 Identify, describe, draw, and classify triangles as equilateral*, isosceles*, scalene*, right*, acute*, obtuse*, and equiangular*. Example: Draw an isosceles right triangle. 5.4.3 Identify congruent* triangles and justify your decisions by referring to sides and angles. Example: In a collection of triangles, pick out those that are the same shape and size and explain your answers. 5.4.4 Identify, describe, draw, and classify polygons*, such as pentagons and hexagons. Example: In a collection of polygons, pick out those with the same number of sides.

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.	Example: In a collection of parallelograms, rhombuses, and trapezoids, pick out those that are the same shape and size and explain your decisions. 4.4.5 Identify and draw lines of symmetry in polygons. Example: Draw a rectangle and then draw all its lines of symmetry. 4.4.6 Construct cubes and prisms* and describe their attributes. Example: Make a 6-sided prism from construction paper. *parallelogram: a four-sided figure with both pairs of opposite sides parallel *rhombus: a parallelogram with all sides equal *trapezoid: a four-sided figure with one pair of opposite sides parallel *congruent: two figures that are the same shape and size *quadrilateral: a two-dimensional figure with four sides *prism: solid shape with fixed cross-section (right prism is a solid shape with two Parallel faces that are congruent polygons and other faces that are rectangles.	5.4.5 Identify and draw the radius and diameter of a circle and understand the relationship between the radius and diameter. Example: On a circle, draw a radius and a diameter and describe the differences and similarities between the two. 5.4.6 Identify shapes that have reflectional and rotational symmetry*. Example: What kinds of symmetries have the letters M, N, and O? 5.4.7 Understand that 90˚, 180˚, 270˚, and 360˚ are associated with ¼, ½, ¾, and full turns, respectively. Example: Face the front of the room. Turn through four right angles. Which way are you now facing? 5.4.8 Construct prisms* and pyramids using appropriate materials. Example: Make a square-based pyramid from construction paper. 5.4.9 Given a picture of a three-dimensional object, build the object with blocks. Example: Given a picture of a house made of cubes and rectangular prisms, build the house. *equilateral triangle: all sides are congruent *isosceles triangle: at least two sides are congruent *scalene triangle: no sides are equal *right triangle: one angle measures 90 degrees

*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		*acute triangle: all angles are less than 90 degrees *obtuse triangle: one angle is more than 90 degrees *equiangular triangle: all angles are of equal measure *congruent: two figures that are the same shape and size *polygon: two-dimensional shape with straight sides (e.g., triangle, rectangle, pentagon) *reflectional and rotational symmetry: letter M has reflectional symmetry in a line down the middle; letter N has rotational symmetry around its center *prism: solid shape with fixed cross-section (right prism is a solid shape with two parallel faces that are polygons and other faces that are rectangles)

Standard 5 – Measurement *Students choose and use appropriate units and measurement tools for length, capacity, weight, temperature, time and money.*	***Standard 5 – Measurement*** *Students understand perimeter and area, as well as measuring volume, capacity, time and money.*	***Standard 5 – Measurement*** *Students understand and compute the areas and volumes of simple objects, as well as measuring weight, temperature, time, and money.*
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?	4.5.1 Measure length to the nearest quarter-inch, eighth-inch, and millimeter. Example: Measure the width of a sheet of paper to the nearest millimeter. 4.5.2 Subtract units of length that may require renaming of feet to inches or meters to centimeters. Example: The shelf was 2 feet long. Jane shortened it by 8 inches. How long is the shelf now? 4.5.3 Know and use formulas for finding the perimeters of rectangles and squares. Example: The length of a rectangle is 4 cm and its perimeter is 20 cm. What is the width of the rectangle? 4.5.4 Know and use formulas for finding the areas of rectangles and squares. Example: Draw a rectangle 5 inches by 3 inches. Divide it into one-inch squares and count the squares to find its area. Can you see another way to find the area? Do this with other rectangles.	5.5.1 Understand and apply the formulas for the area of a triangle, parallelogram, and trapezoid. Example: Find the area of a triangle with base 4 m and height 5 m. 5.5.2 Solve problems involving perimeters and areas of rectangles, triangles, parallelograms, and trapezoids, using appropriate units. Example: A trapezoidal garden bed has parallel sides of lengths 14 m and 11 m and its width is 6 m. Find its area and the length of fencing needed to enclose it. Be sure to use correct units. 5.5.3 Use formulas for the areas of rectangles and triangles to find the area of complex shapes by dividing them into basic shapes. Example: A square room of length 17 feet has a tiled fireplace area that is 6 feet long and 4 feet wide. You want to carpet the floor of the room, except the fireplace area. Find the area to be carpeted. 5.5.4 Find the surface area and volume of rectangular solids using appropriate

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?	4.5.5 Estimate and calculate the area of rectangular shapes by using appropriate units, such as square centimeter (cm^2) square meter (m^2), square inch (in^2), or square yard (yd^2). Example: Measure the length and width of a basketball court and find its area in suitable units.	units. Example: Find the volume of a shoe box with length 30 cm, width 15 cm, and height 10 cm.
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.	4.5.6 Understand that rectangles with the same area can have different perimeters and that rectangles with the same perimeter can have different areas. Example: Make a rectangle of area 12 units on a geoboard and find its perimeter. Can you make other rectangles with the same area? What are their perimeters?	5.5.5 Understand and use the smaller and larger units for measuring weight (ounce, gram, and ton) and their relationship to pounds and kilograms. Example: How many ounces are in a pound?
3.5.7 Estimate and measure weight using pounds and kilograms. Example: Estimate the weight of your book bag in pounds.	4.5.7 Find areas of shapes by dividing them into basic shapes such as rectangles and triangles. Example: Find the perimeter and area of your school building.	5.5.6 Compare temperatures in Celsius and Fahrenheit, knowing that the freezing point of water is 0˚C and 32˚F and that the boiling point is 100˚C and 212˚F. Example: What is the Fahrenheit equivalent of 50˚C? Explain your answer.
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?	4.5.8 Use volume and capacity as different ways of measuring the space inside a shape. Example: Use cubes to find the volume of a fish tank and a pint jug to find its capacity.	5.5.7 Add and subtract with money in decimal notation. Example: You buy articles that cost $3.45, $6.99, and $7.95. How much change will you receive from $20?
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?	4.5.9 Add time intervals involving hours and minutes. Example: During the school week, you have 5 recess periods of 15 minutes.	

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. 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)	Find how long that is in hours and minutes. 4.5.10 Determine the amount of change from a purchase. Example: You buy a chocolate bar priced at $1.75. How much change do you get if you pay for it with a five-dollar bill?	

	Standard 6 – Data Analysis and Probability *Students organize, represent, and interpret numerical and categorical data and clearly communicate their findings. They show outcomes for simple probability situations.*	***Standard 6 – Data Analysis and Probability*** *Students collect, display, analyze, compare, and interpret data sets. They use the results of probability experiments to predict future events.*
	4.6.1 Represent data on a number line and in tables, including frequency tables. Example: The students in your class are growing plants in various parts of the classroom. Plan a survey to measure the height of each plant in centimeters on a certain day. Record your survey results on a line plot. 4.6.2 Interpret data graphs to answer questions about a situation. Example: The line plot below shows the heights of fast-growing plants reported by third-grade students. Describe any patterns that you can see in the data using the words "most," "few," and "none." 4.6.3 Summarize and display the results of probability experiments in a clear and organized way. Example: roll a number cube 36 times and keep a tally of the number of times that 1, 2, 3, 4, 5, and 6 appear. Draw a bar graph to show your results.	5.6.1 Explain which types of displays are appropriate for various sets of data. Example: Conduct a survey to find the favorite movies of the students in your class. Decide whether to use a bar, line, or picture graph to display the data. Explain your answer. 5.6.2 Find the mean*, median*, mode*, and range* of a set of data and describe what each does, and does not, tell about the data set. Example: Find the mean, median, and mode of a set of test results and describe how well each represents the data. 5.6.3 Understand that probability can take any value between 0 and 1, events that are not going to occur have probability 0, events certain to occur have probability 1, and more likely events have a high probability than less likely events. Example: What is the probability of rolling a 7 with a number cube? 5.6.4 Express outcomes of experimental probability situations verbally and numerically (e.g., 3 out of 4, ¾). Example: What is the probability of

		rolling an odd number with a number cube? *mean: the average obtained by adding the values of and dividing by the number of values *median: the value that divides a set of data written in order of size into two equal parts *mode: the most common value in a set of data *range: the difference between the largest and smallest number

Standard 6 – Problem Solving *Students make decisions about how to set up a problem.*	***Standard 7 – Problem Solving*** *Students make decisions about how to set up a problem.*	***Standard 7 – Problem Solving*** *Students make decisions about how to set up a problem.*
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 make decisions about how to approach problems and communicate their ideas.** 4.7.1 Analyze problems by identifying relationships, telling relevant from irrelevant information, sequencing and prioritizing information, and observing patterns. Example: Solve the problem: "Find a relationship between the number of faces, edges, and vertices of a solid shape with flat surfaces." Try two or three shapes and look for patterns. 4.7.2 Decide when and how to break a problem into simpler parts. Example: In the first example, find what happens to cubes and rectangular solids.	**Students make decisions about how to approach problems and communicate their ideas.** 5.7.1 Analyze problems by identifying relationships, telling relevant from irrelevant information, sequencing and prioritizing information, and observing patterns. Example: Solve the problem: "When you flip a coin 3 times, you can get 3 heads, 3 tails, 2 heads, and 1 tail, or 1 head and 2 tails. Find the probability of each of these combinations." Notice that the case of 3 heads and the case of 3 tails are similar. Notice that the case of 2 heads and 1 tail and the case of 1 head and 2 tails are similar. 5.7.2 Decide when and how to break a problem into simpler parts. Example: In the first example, decide to look at the case of 3 heads and the case of 2 heads and 1 tail.
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 to find what happens to all the	**Students use strategies, skills, and concepts in finding and communicating solutions to problems.** 4.7.3 Apply strategies and results from simpler problems to solve more complex problems. Example: In the first example, use your method for cubes and rectangular solids to find what happens to other prisms	**Students use strategies, skills, and concepts in finding and communicating solutions to problems.** 5.7.3 Apply strategies and results from simpler problems to solve more complex problems. Example: In the first example, begin with the situation where you flip the coin twice.

	number up to 10.		and to pyramids.		
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.	4.7.4	Use a variety of methods, such as words, numbers, symbols, charts, graphs, tables, diagrams, tools, and models to solve problems, justify arguments, and make conjectures. Example: In the first example, make a table to help you explain your results to another student.	5.7.4	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, make a table or tree diagram to show another student what is happening.
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?	4.7.5	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 with all the shapes that you tried.	5.7.5	Recognize the relative advantages of exact and approximate solutions to problems and give answers to a specified degree of accuracy. Example: You are buying a piece of plastic to cover the floor of your bedroom before you paint the room. How accurate should you be: to the nearest inch, foot, or yard? Explain your answer.
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?	4.7.6	Recognize the relative advantages of exact and approximate solutions to problems and give answers to a specified degree of accuracy. Example: You are telling a friend the time of a TV program. How accurate should you be: to the nearest day, hour, minute, or second?	5.7.6	Know and apply appropriate methods for estimating results of rational-number computations. Example: Will 7 x 18 be smaller or larger than 100? Explain your answer.
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.	4.7.7	Know and use appropriate methods for estimating results of whole-number computations. Example: You buy 2 CDs for $15.95 each. The cashier tells you that will be $49.90. Does that surprise you?	5.7.7	Make precise calculations and check the validity of the results in the context of the problem. Example: A recipe calls for $\frac{3}{8}$ of a cup of sugar. You plan to double the recipe for a party and you have only one cup of sugar in the house. Decide whether you have enough sugar and explain how you know.

	4.7.8 Make precise calculations and check the validity of the results in the context of the problem. Example: The buses you use for a school trip hold 55 people each. How many buses will you need to seat 180 people?	
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.	**Students determine when a solution is complete and reasonable and move beyond a particular problem by generalizing to other situations.** 4.7.9 Decide whether a solution is reasonable in the context of the original situation. Example: In the last example, would an answer of 3.27 surprise you? 4.7.10 Note the method of finding the solutions and show a conceptual understanding of the method by solving similar problems. Example: Change the first example so that you look at shapes with curved surfaces.	**Students determine when a solution is complete and reasonable and move beyond a particular problem by generalizing to other situations.** 5.7.8 Decide whether a solution is reasonable in the context of the original situation. Example: In the first example about flipping a coin, check that your probabilities add to 1. 5.7.9 Note the method of finding the solution and show a conceptual understanding of the method by solving similar problems. Example: Find the probability of each of the combinations when you flip a coin 4 times.