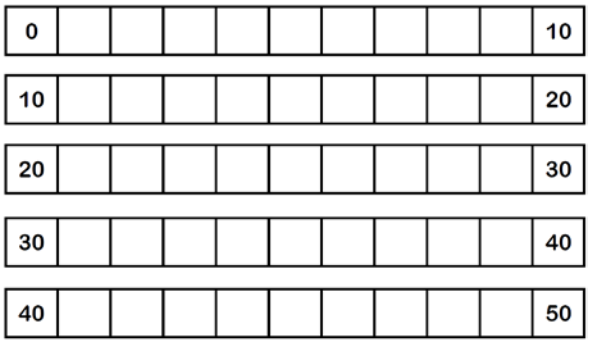
4th Grade - Mathematics				
Reporting Category	**Standard**	**Essential Skills and Knowledge**	**Related Basic Skill or Concept**	**Sample Instructional Activities**
Number, Number Sense, Computation and Estimation	4M-NSCE 1	• Compare numbers to each other based on place value groups by composing and decomposing to 50. • Compare whole numbers. • Round one-and two-digit whole numbers from 0-50 to the nearest 10.	• Counting • Building the value of number with units and rods • Identifying the two closest tens for a number (e.g., 34 is in between 30 and 40) • Understanding of ones and tens and their value	• Use a deck of cards numbered 0-50. Turn over two number cards. Provide the student with a number line numbered 0-50. Have them place markers on the two numbers that they turned over. Have them point to the larger or smaller number. • Provide the student with base 10 blocks. Have them build two two-digit numbers. Have them identify the larger of the two numbers. For example, have them build 32 and 54. They would identify 54 as the larger number since it has more tens than 32. Do this activity using the <,>, and = as well. • Have student roll two 10-sided digit generators. Have the build the largest number with the 2 numbers they rolled. Have them find where the number would belong on the number line below and then identify the closest ten (e.g., If they roll and build the number 36 they would place it between 30 and 40 and see that it would round to 40. 

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	4M-NSCE 2	• Represent equivalent fractions (e.g., 2/4 = 1/2).	• Name and identify fractional parts from a whole • Recognize that shapes can be cut into equal and/or unequal parts	• Use fraction bars and have student find and name fraction pieces that are the equivalent (same) as the named fraction. For example, you may write 1/2 and would build 1/2 with fraction bars and find that 2/4 is equivalent. This activity should also be done with fraction circles. • Use a square piece of paper to represent a whole and have the student fold it in half to represent one-half. Give the student another piece of square paper and have them fold it to show an equivalent fraction to one-half.  one-half  two-fourths This paper folding activity could also be done with circles and/or rectangular strips of paper.
	4M-NSCE 3	• Round money to the nearest dollar.	• Identify the two closest dollar amounts (e.g., $3.13 is more than $3.00 and less than $4.00) • Represent money amounts using numbers, a decimal point, and the dollar or cent symbol.	• Show student an item that costs a certain dollar amount. Have them tell you the two dollar amounts that the amount shown is in between (e.g., You show them an item that costs $2.75. They would tell you it costs more than $2.00 but less than $3.00.). They then identify the dollar amount that is closer. • Give student a dollar amount and have them decide where it would be on the number line below. Have them identify the closest dollar amount. For example $4.10 would be in between $4.00 and $4.50 but is closest to $4.00. (See image below)

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	4M -NSCE 4	• Solve single-step word problems using addition or subtraction.
		• Add and subtract double-digit whole numbers.
			• Understand that addition involves combining and subtraction involves separating.
			• Exposure to using strategies such as counting on, counting back, one-more-than, one-less-than, doubles facts, make-ten facts
			• Understand that estimation skills are valuable in determining the reasonableness of the sum or difference when solving for the exact answer
				• Different strategies can be use to teach students to add two-digit numbers;
				  • Partial sums: 42 + 37 = ___
				  40 + 30 = 70
				  2 + 7 = 9
				  70 + 9 = 79
				  • Counting on: 53 + 28 = ___
				  53 + 20 = 73
				  73 + 8 = 81
				  • Use a hundreds chart or number line
				• Build an understanding of the algorithm by first using concrete materials and then a do-and-write approach connects it to the written form of the algorithm.
				• Different strategies can be use to teach students to add two-digit numbers;
				  • lead-digit or front-end strategy:
				  56 – 21 = __
				  50 – 20 = 30
				  6 – 1 = 5

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			• Understanding of the terms used in addition are 23 → *addend* + 46 → *addend* 69 → *sum* • Understanding of the three terms often used in subtraction are *minuend* → 98 *subtrahend* → – 41 *difference* → 57	30 + 5 = 35 • counting up: 87 – 25 = __ 20 + 60 = 80 5 + 2 = 7 60 + 2 = 62 or 87 – 25 = __ 25 + 60 = 85 85 + 2 = 87 60 + 2 = 62 or 87 – 25 = __ 25 + 2 = 27 27 + 60 = 87 2 + 60 = 62 • partial differences: 98 – 41 = __ 90 – 40 = 50 8 – 1 = 7 50 + 7 = 57. • Use a hundreds chart or number line • Solve single-step word problems using Polya's four-step plan: – Understand: Retell the problem. – Plan: Decide what the operation is. – Solve: Write a number sentence. – Look back: Does the answer make sense? • The problem solving process is enhanced when students model word problems, using manipulatives or drawings.

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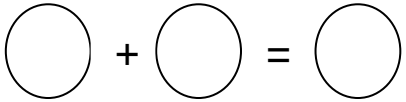
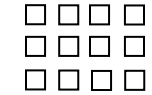
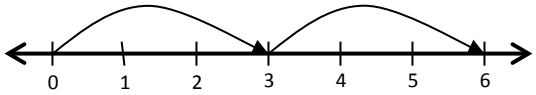
				• Provide student with a problem solving mat so they are able to act out the problem. 

	4M -NSCE 5	• Show one way to arrive at a product.	• Understanding of repeated addition
			• Making equal groups to find a total
				• Different strategies can be used to find the product to a multiplication problem:
				  • Equal sets or equal groups allow students to sort objects into equal groups. This reinforces repeated addition or skip counting.
				  • Students can solve problems using the array model. Give the student tiles to build a multiplication problem. (e.g., 3 x 4 is the same as 3 rows of 4)
				 
				4 + 4 + 4 = (SET)
				  • The length model (e.g., a number line) also reinforces repeated addition or skip counting.
				2 x 3 would be 2 jumps of 3
				 

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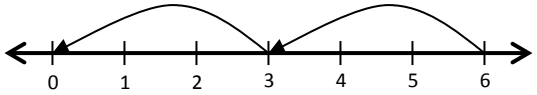
				6 ÷ 3 would show how many groups of 3 it takes to get to zero 
Measurement and Geometry	4M-MG 1	• Identify smaller measurement units that divide a larger unit within a measurement system.	• Understand that things can be measured using various tools. • Identify tools to measure capacity, mass/weight, and length	• Have students measure the mass of an item in ounces and then see how many pounds are equivalent to the item weighed. • Measure the length of something in inches and then measure it using feet.
	4M-MG 2	• Tell time to the half hour using a digital clock or to the hour using an analog clock.	• Recognize and read numbers • Understanding of the minute and hour hand on an analog clock • Experiences in relating time on the hour to daily routines and school schedules	• Use demonstration clocks with gears and have the student demonstrate the times of their daily schedules.
	4M-MG 3	• Distinguish between parallel and intersecting lines.	• Identify models and pictures of plane geometric figures (circle, square, rectangle, and triangle) • Understanding	• Show student an assortment of lines, rays, intersecting lines, parallel line, etc. Have the student find the 3 examples of intersecting lines. • Using a straight edge, have the student draw their own examples of intersecting and

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			similarities and differences between figures	parallel lines.
Probability, Statistics, Patterns, Functions, and Algebra	4M-PSPFA 1	• Use repeating patterns to make predictions	• Understand that patterns can repeat and grow	• Show student a pattern and have them predict what would come next. The pattern could be a row of quarters showing heads and/or tails and they would predict if the next quarter would be heads or tails based on the pattern you create.

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