MAKING MATH MEANINGFUL
Embracing the Principles of Analysis and Induction

ALGEBRAIC REASONING & ALGEBRA

	K / LK	1 / L1	2 / L2	3 / L3	4 / L4	5 / L5	6 / L6
Duplicate patterns in a variety of contexts.							
Given more than two objects, puts them in order from shortest to longest or from longest to shortest.	●	✔					
Given two groups of objects, determines whether the groups are equal or unequal.	●	✔	▶				
Given two groups of objects, determines which group is less than/ greater than.	●	✔	▶				
Given two groups of objects, makes them equal by adding on to the smaller or taking away from the larger.	●	✔	▶				
Given more than two groups of objects, puts them in order from smallest to largest or from largest to smallest.	●	✔					
Given a sentence comparing two numbers (for example, $6 = 6, 5 \neq 7$), reads it.		●/✔					
Given two objects or groups, chooses an appropriate comparison sentence.		●/✔					
Given two objects or groups, writes an appropriate comparison sentence.		●/✔	▶				
Given a comparison sentence, validates (confirms) it physically or pictorially.		●/✔	▶				
Given an unfinished comparison sentence, completes it.		●/✔	▶				
Given an order sentence (for example, $5 < 7, 6 = 6, 8 > 5$), reads it.		●/✔					
Given two objects or groups, chooses an appropriate order sentence.		●/✔					
Given two objects or groups, writes an appropriate order sentence.		●/✔	▶				
Given an order sentence, validates (confirms) it physically or pictorially.		●/✔					
Given an unfinished order sentence, completes it.		●/✔					
Use number sentences involving unknowns to represent and solve real-world & mathematical problems.							
Given an open (unfinished) equalizing situation involving the numbers 0-20 in which the amount to be added on or taken away is unknown, writes a sentence which represents that situation (for example: $5 + \square = 14, 13 - \square = 6$).		●	✔	▶			
Given an open equalizing situation involving the numbers 0-20 in which the amount to be added on or taken away is unknown, chooses a sentence which represents that situation.		●	✔	▶			
Given an open equalizing situation involving the numbers 0-20 in which one of the groups to be equalized is unknown, writes a sentence which represents the situation (for example, $\square - 2 = 4, 5 = \square + 3, 2 + 6 = \square, \square = 10 - 3$).		●	✔	▶			
Given an open equalizing situation involving the numbers 0-20 in which one of the groups to be equalized is unknown, chooses a sentence which represents that situation.		●	✔				
Given an open equalizing, or joining, or separating situation involving the numbers 0 - 99, writes a sentence that represents that situation.			●/✔				
Given an open addition or subtraction sentence involving the numbers 0 - 99, solves it.			●/✔	▶			
Given a grouped set of objects, writes the grouping notation that represents that set (for example, $5(3) + 2$ which is read 'five groups of three objects plus two leftover').			●/✔	▶			
Given a math sentence (an equation) with an unknown part or whole, decides which operation (addition, subtraction, multiplication, or division) is necessary to solve, and then solves it.		●	✔	▶	▶	▶	▶
Given a story problem with an unknown part or whole, writes a math sentence (an equation) to represent the story.		●	✔	▶	▶	▶	▶
Given a story problem with an unknown part or whole, solves by using addition, subtraction.		●	✔	▶	▶	▶	▶
Given an incomplete math sentence involving addition and subtraction of the numbers 0 -999, solves it.				●/✔	▶		
Use number sentences involving addition, subtraction, multiplication, division and unknowns to represent and solve real-world and mathematical problems.							
Given a story problem involving an unknown, decides if addition, subtraction, multiplication, or division is needed to find the solution.			●	✔	▶	▶	▶
Given a story problem involving addition, subtraction, multiplication, or division, and an unknown, writes a math sentence to represent the story.			●	✔	▶	▶	▶
Given a word problem involving addition or subtraction, using common fractions, you will be able to decide which operation to use in order to solve the problem.				●	●	●/✔	▶
Given a word problem involving addition, subtraction, multiplication, division, using decimals, you will be able to decide which operation to use to solve the problem.						●	●/✔
Given two numbers and an unknown number involving tenths, hundredths, or thousandths, you will be able to decide if you should add, subtract, multiply, or divide to find the missing number and then solve.						●	●/✔
Understand and interpret expressions, equations, and inequalities involving variables and whole numbers, and use them to represent and evaluate real-world and mathematical problems.							
Given a multiplication fact involving the numbers 1x1 - 10x10, applies the commutative, associative, and/or distributive property to find the product.			●	●/✔	▶		
Use properties of arithmetic to generate equivalent numerical expressions and evaluate expressions involving positive rational numbers.							
Given a multiplication or division sentence, writes three other multiplication or division sentences equivalent to the given sentence.					●/✔	▶	
Given an arithmetic situation and a set of statements related to that situation, classifies the related statement(s) as true, false, or need more information in the context of the situation.						●	●
Given two or more attributes, groups another object or numbers with those attributes.						●	
Given an equation with several mathematical operations, you will be able to decide the order of operations.							●
Given an arithmetic situation involving addition or subtraction and an unknown, writes a simple algebraic equation and then solves it.		●	✔	▶	▶	▶	▶
Given an arithmetic situation involving the multiplication facts, writes a linear algebraic equation and then solves it.			●	✔	▶		
Given an multiplication situation involving double digit numbers 11-19, writes the two factors as two binomials and then solves.					●/✔	▶	

Legend:

Exploring the Idea - ●

Explaining the Idea - ✔

Expanding the Idea - ▶