OA Vertical Knowledge Chart Grades K-6:
MATH: Units & Topics

K	1	2	3	4	5	6
- Numbers to 10 - Two Dimensional and Three Dimensional Shapes - Length, Weight, Capacity, and Numbers to 10 - Number Pairs, Addition and Subtraction to 10 - Numbers 10-20 and Counting to 100 - Analyzing, Comparing, and Composing Shapes	-Addition and subtraction -Counting on from any given number -Measurement -Interpret data from a graph -Place value ten and ones -Solving word problems -Shapes-2D, 3D, halves, quarters -decompose teen numbers -Time-hour, half hour -Money- coins names and their value -Read and write numbers to 120 -Add/Subtract within 100 using place value relationship	**1-Sums and Differences to 100** - Foundations for Fluency with Sums and Differences Within 100 - Initiating fluency with addition & subtraction within 100 **2-Addition & Subtraction of length units** - Understand concepts about the ruler. - Measure & estimate length using different measurement tools. - Measure & compare lengths using different length units. - Relate addition & subtraction to length	**Properties of Multiplication and division solving problems with units of 2-5 and 10** -arrays **Place Value and Problem Solving with units of measure** -Time measurement, elapsed time -Rounding to nearest ten and hundred -two and three digit addition and subtraction using measurements **Multiplication and Division with units of 0,1, 6-9 and multiples of 10** **Multiplication and Area** **Fractions as numbers on the numberline**	**Unit 1: Place Value** -Place value names/ reading numbers -Building numbers standard, expanded, unit, and word form) -Comparing -Rounding -Adding -Subtracting -Word problems **Unit 2: Multiplication and Division** -Multiplication facts -Prime and composite numbers -Factors and multiples -1 digit multiplication - area model and standard -2 by 2 multiplication - area model and standard	Place Value -Patterns on a place value chart from thousandths to billions -Multiply or divide by powers of ten to explain the value of a number -Use exponents to denote powers of ten -Forms of numbers (word, expanded, base ten form) -Round & compare decimals from billions to thousandths Whole Numbers and Decimals -Add, subtract, multiply and divide whole numbers and decimals -Use concrete models -Use standard algorithms fluently -Solve multi-step word problems Fractions -Equivalent, simplify, compare, order, convert improper fractions to mixed numbers -Add, subtract, multiply & divide	1 - Number Sense Fractions and Decimals All operation of each Common denominator GCF/LCM Distributive Property 2 - Ratios and Rates Intro to Ratios Simplifying Ratios Unit Rates Percents Ratio Tables Graphing equation from a ratio table 3 - Integers and Rational Numbers *What is a negative number? *Vocabulary for Negative and Positive numbers - temp - below and above sea level - money and bank accounts

		3-Place Value, Counting, & Comparison of Numbers to 1,000.
		
		● Forming base ten units of ten, a hundred, & a thousand
		● Understanding place value units of one, ten & a hundred
		● Three digit numbers in unit, standard, expanded & word forms
		● Modeling base ten numbers with 1,000 with money
		● Modeling numbers within 1,000 with place value disks.
		● Comparing two three-digit numbers
		● Finding 1, 10 & 100 more or less than a number
		
		4-Addition & Subtraction Within 200 with Word Problems to 100
		
		● Sums & differences within 100.
		
		● Strategies for composing a
			Collecting and Displaying Data
			-categorical data
			-measurement data
			
			Geometry and Measurement
			-solving word problems
			-attributes of 2-D figures
			-Perimeter
			● Strategies for decomposing a ten.
			-problem solving
				-Division - partial quotient and box method
				-Area and perimeter
				-Word problems
				Unit 3: Geometry
				-Terms
				-Angles
				-Measuring angles
				-Drawing angles
				-Missing part angles, angles around a point
				-Symmetry
				-Quadrilaterals
				Unit 4: Fractions
				-Identify fractions
				-Decompose
				-Equivalent
				-comparing
				-Mixed numbers
				-Adding and subtracting
				-Multiplying
				-Word problems
				Unit 5: Decimals
				-Reading decimals/place value
				-Writing (fraction, word form, digit form)
				-Comparin
				-Least to greatest
				-Adding and subtracting
					fractions with like and unlike denominator
					-Use concrete models
					-Use standard algorithms fluently
					-Interpret fractions as division
					-Interpret multiplication as scaling
					-Solve multi-step word problems
					
					`Algebraic Thinking`
					-Order of Operations
					-Write and evaluate expressions
					
					`Measurement and Data`
					-Convert standard measurement units within a standard measurement system.
					-Use conversions to solve multi-step word problems
					-Make a line plot using fraction and solve problems using this data
					-Measure volume, perimeter, area and solve problems using addition and multiplication
					
					`Graphing`
					-Generate patterns using two given rules
					-Identify relationships between corresponding terms
						*Number Line
						*Coordinate Points - all 4 quadrants Shapes on Grid
						*Rational Numbers- fractions and decimals on a number line - meaning on the negative side of the number line
						
						`4 - Algebra - Expressions and Equations- LOTS of VOCAB`
						*Exponents
						*Order of Operations
						*What is an expression versus an equation?
						*Create expressions from words
						*Identify coefficient and variable in a term
						*Factor and Distributive Property to create equivalent expressions
						*Solve when told what variable is Write equations

		ten. ● Strategies for composing tens & hundreds ● Strategies for decomposing tens & hundreds ● Student explanation of written method. **5-Addition & Subtraction Within 1,000 with Word Problems to 100** ● Strategies for adding & subtracting within 1,000. ● Strategies for composing within 1,000 ● Strategies for decomposing tens & hundreds within 1,000 ● Student explanations for Choice of solution methods. **6-Foundations of Multiplication & Division** ● Formation of equal groups ● Arrays & equal groups ● Rectangular arrays as foundations for multiplication		-money	-Form ordered pairs using corresponding terms and graph in the first quadrant Geometry -Classify two-dimensional figures (quadrilaterals) into categories based on properties	*Solve one step equations *Solve two step equations *Inequalities Graphing *Solving Inequalities 5 - Geometry Area and Perimeter Review Volume with fractions Surface Area 6- Probability and Statistics Probability of an event occurring Statistical Question Mean, Median and Mode Describe statistical variability and distribution Create Histograms Dot Plots/Line Plots Identify the skew of information Summarize data

			& division ● The meaning of even & odd numbers **7-Problem solving with Length, Money & Data** ● Problem solving with coins and bills ● Creating an inch ruler ● Measuring & estimating length using customary & metric units ● Problem solving with customary & metric units ● Displaying measurement data **8-Time,Shapes, &Fractions as Equal Parts of a shape** ● attributes of geometric shapes ● Composite shapes &fraction concepts ● *Halves, thirds & fourths of circles & rectangles. ● Telling time.			