

## Numbers Up! Volcanic Panic™

### Match to California Content Standards & Frameworks for Mathematics K-7

\* **Note: All MR Standards are addressed in the design of NUVP questions.**

\*\***Assessment is via the User Statistics feature of the program.**

1. Standards-based instructional content as stated in the California Mathematics Framework listed by Strand and standards	2. Standard Development				3. Citations (Corresponding NUVP Level)	4. Assessment Y/N	5. Assessment Citations			
	Y	N	M R *	P			**	M R		
<b>Kindergarten</b>										
<i>Number Sense</i>										
1.0 Students understand the relationship between numbers and quantities (i.e., that a set of objects has the same number of objects in different situations regardless of its position or arrangement):	✓		✓	✓	Levels 1-5	✓	See User Statistics in Admin Section.	x		
1.1 Compare two or more sets of objects (up to ten objects in each group) and identify which set is equal to, more than, or less than the other.	✓			✓		✓		x		
1.2 Count, recognize represent, name, and order a number of objects (up to 30)	✓			✓		✓		x		
1.3 Know that the larger numbers describe sets with more objects in them than the smaller numbers do.	✓			✓		✓		x		
2.0 Students understand and describe simple additions and subtractions:	✓			✓		✓		x		
2.1 Use concrete objects to determine answers to addition and subtraction problems (for two numbers that are each less than 10)	✓			✓		✓		x		
3.0 Students use estimation strategies in computation and problem solving that involve numbers that use the ones and tens places:	✓			✓		✓		x		
3.1 Recognize when an estimate is reasonable.	✓			✓		✓		x		
<b>1. Standards-based instructional content as stated in the California Mathematics Framework</b>	<b>Y</b>	<b>N</b>	<b>M R</b>	<b>P</b>		<b>(NUVP Level)</b>		<b>Y/N</b>		<b>M R</b>
	<b>2. Standard Development</b>					<b>3. Citations</b>		<b>4. Assessment</b>	<b>5. Assessment Citations</b>	

1. Standards-based instructional content as stated in the California Mathematics Framework listed by Strand and standards	2. Standard Development				3. Citations  (NUVP Level)	4. Assessment  Y/N	5. Assessment Citations	
	Y	N	M R	P				M R
<i>Algebra and Functions</i>					Levels 1-5			
1.0 Students sort and classify objects:	✓			✓		✓		x
1.1 Identify, sort and classify objects by attribute and identify objects that do not belong to a particular group.	✓			✓		✓		x
<b>Grade One</b>								
<i>Number Sense</i>					Levels 6-11			
1.0 Students understand and use numbers up to 100:	✓			✓		✓		x
1.1 Count, read, and write whole numbers to 100.	✓			✓		✓		x
1.3 Represent equivalent forms of the same number through the use of physical models, diagrams and number expressions (to 20).	✓			✓		✓		x
1.4 Count and group objects in ones and tens	✓			✓		✓		x
2.0 Students demonstrate the meaning of addition and subtraction and use these operations to solve problems:	✓			✓		✓		x
2.1 Know the addition facts (sums to 20) and the corresponding subtraction facts and commit them to memory.	✓			✓		✓		x
2.2 Use the inverse relationship between addition and subtraction to solve problems.	✓			✓		✓		x
2.3 Identify 1 more than, 1 less than, 10 more than, 10 less than a given number.	✓			✓		✓		x
2.4 Count by 2s, 5s, and 10s to 100,	✓			✓		✓		x
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	Y	N	M R	P				M R

1. Standards-based instructional content as stated in the California Mathematics Framework listed by Strand and standards	2. Standard Development				3. Citations  (NUVP Level)	4. Assessment  Y/N	5. Assessment Citations	
	Y	N	M R	P				M R
2.5 Show the meaning of addition (putting together, increasing) and subtraction (taking away, comparing, finding the difference).	✓			✓	Levels 6-11	✓		x
2.6 Solve addition and subtraction problems with one- and two-digit numbers.	✓			✓		✓		x
2.7 Find the sum of three one-digit numbers.	✓			✓		✓		x
<i>Algebra and Functions</i>								
1.0 Students use number sentences with operational symbols and expressions to solve problems.	✓			✓		✓		x
1.1 Write and solve number sentences from problem situations that express relationships involving addition and subtraction.	✓			✓		✓		x
1.2 Understand the meaning of the symbols +, -, =.	✓			✓		✓		x
<b>Grade Two</b>								
<i>Number Sense</i>								
1.0 Students understand the relationship between numbers, quantities, and place value in whole numbers up to 1,000:	✓			✓	Levels 12-15	✓		x
1.1 Count, read and write whole numbers up to 1,000 and identify the place value for each digit.	✓			✓		✓		x
1.2 Use words, models and expanded forms to represent numbers (to 1,000).	✓			✓		✓		x
1.3 Order and compare whole numbers to 1,000.	✓			v		✓		x
1. Standards-based instructional content as stated in the California Mathematics Framework listed by Strand and standards	2. Standard Development				3. Citations  (NUVP Level)	4. Assessment  Y/N	5. Assessment Citations	
	Y	N	M R	P				M R

1. Standards-based instructional content as stated in the California Mathematics Framework listed by Strand and standards	2. Standard Development				3. Citations  (NUVP Level)	4. Assessment  Y/N	5. Assessment Citations	
	Y	N	M R	P				M R
2.0 Students estimate calculate, and solve problems involving addition and subtraction of two- and three-digit numbers:	✓			✓	Levels 12-15	✓		x
2.1 Understand and use the inverse relationship between addition and subtraction to solve problems and heck solutions.	✓			✓		✓		x
2.2 Find the sum or difference of two whole numbers up to three digits long.	✓			✓		✓		x
2.3 Use mental arithmetic to find the sum or difference of two two-digit numbers.	✓			✓		✓		x
3.0 Students model and solve simple problems involving multiplication and division.	✓			✓		✓		x
3.1 Use repeated addition, arrays, and counting by multiples to do multiplication.	✓			✓		✓		x
3.2 Use repeated subtraction, equal sharing, and forming equal groups with remainders to do division.	✓			✓		✓		x
3.3 Know the multiplication tables of 2s, 5s, and 10s (to "times 10") and commit them to memory.	✓			✓		✓		x
4.0 Students understand that fractions and decimals may refer to parts of a set and parts of a whole.	✓			✓		✓		x
4.1 Recognize, name, and compare unit fractions from 1/12 to 1/2	✓			✓		✓		x
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	Y	N	M R	P				M R

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	Y	N	M R	P				M R
4.2 Recognize fractions of a whole and parts of a group.	✓			✓	Levels 12-15	✓		x
4.3 Know that when all fractional parts are included, such as four-fourths, the result is equal to the whole and to one.	✓			✓		✓		x
5.0 Students model and solve problems by representing, adding, and subtracting amounts of money.	✓			✓		✓		x
5.2 Know and use the decimal notation and the dollar and cent symbols for money.	✓			✓		✓		x
6.0 Students use estimation strategies in computation and problem solving that numbers that use the ones, tens, hundreds, and thousands places:	✓			✓		✓		x
<i>Algebra and Functions</i>								
1.0 Students model, represent, and interpret number relationships to create and solve problems involving addition and subtraction:	✓			✓		✓		x
1.1 Use the commutative and associative rules to simplify mental calculations and to check results.	✓			✓		✓		x
1.2 Relate problem situations to number sentences involving addition and subtraction.	✓			✓		✓		x
1.3 Solve addition and subtraction problems by using data from simple number sentences.	✓			✓	✓		x	
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	Y	N	M R	P				M R

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	Y	N	M R	P				M R
<b>Grade Three</b>								
<i>Number Sense</i>								
1.0 Students understand the place value of whole numbers:	✓			✓	<b>Levels 16-17</b>	✓		x
1.1 Count, read, and write whole numbers to 10,000.	✓			✓		✓		x
1.2 Compare and order whole numbers up to 10,000.	✓			✓		✓		x
1.3 Identify the place value for each digit in numbers up to 10,000.	✓			✓		✓		x
1.4 Round off numbers to 10,000 to the nearest ten, hundred, and thousand.	✓			✓		✓		x
1.5 Use expanded notation to represent numbers.	✓			✓		✓		x
2.0 Students calculate and solve problems involving addition, subtraction, multiplication and division:	✓			✓		✓		x
2.1 Find the sum or difference of two whole numbers between 0 and 10,000.	✓			✓		✓		x
2.2 Memorize to automaticity the multiplication table for numbers between 1 and 10.	✓			✓		✓		x
2.3 Use the inverse relationship between multiplication and division to compute and check results.	✓			✓		✓		x
2.4 Solve simple problems involving the multiplication of multidigit numbers by one-digit numbers.	✓			✓	✓		x	
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	Y	N	M R	P				M R

1. Standards-based instructional content as stated in the California Mathematics Framework listed by Strand and standards	2. Standard Development				3. Citations  (NUVP Level)	4. Assessment  Y/N	5. Assessment Citations	
	Y	N	M R	P				M R
2.5 Solve division problems in which a multidigit number is evenly divided by a one-digit number.	✓			✓	Levels 16-18	✓		x
2.6 Understand the special properties of 0 and 1 in multiplication and division.	✓			✓		✓		x
2.7 Determine the unit cost when given the total cost and the number of units.	✓			✓		✓		x
2.8 Solve problems that require two or more of the skills above.	✓			✓		✓		x
3.0 Students understand the relationship between whole numbers, simple fractions, and decimals:	✓			✓	Level 19	✓		x
3.1 Compare fractions represented by drawings or concrete materials to show equivalency and to add and subtract simple fractions in context.	✓			✓		✓		x
3.2 Add and subtract simple fractions	✓			✓		✓		x
3.3 Solve problems involving addition, subtraction, multiplication, and division of money amounts in decimal notation by using whole-number multipliers and divisors.	✓			✓		✓		x
3.4 Know and understand that fractions and decimals are two different representations of the same concept.	✓			✓		✓		x
<i>Algebra and Functions</i>								
2.0 Students represent simple functional relationships.	✓			✓	Levels 17-19	✓		x
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	Y	N	M R	P				M R

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	Y	N	M R	P				M R
2.1 Solve simple problems involving a functional relationship between two quantities.	✓			✓	Levels 16-19	✓		x
2.2 Extend and recognize a linear pattern by its rules.	✓			✓		✓		x
<b>Grade Four</b>								
<i>Number Sense</i>								
1.0 Students understand the place value of whole numbers and decimals to two decimal places, and how whole numbers and decimals relate to simple fractions. Students use the concepts of negative numbers:	✓			✓	Level 20	✓		x
1.1 Read and write whole numbers in the millions.	✓			✓	Levels 18-22	✓		x
1.2 Order and compare whole numbers and decimals to two decimal places.	✓			✓	Levels 20-22	✓		x
1.3 Round whole numbers through the millions to the nearest ten, hundred, thousand, ten thousand, or hundred thousand.	✓			✓	Levels 18-22	✓		x
1.4 Decide when a rounded solution is called for.	✓			✓	Levels 18-22	✓		x
1.6 Write tenths and hundredths in decimal and fraction notations and know the fraction and decimal equivalents for halves and fourths.	✓			✓	Levels 19-22	✓		x
1.7 Write the fraction represented by a drawing of parts of a figure; represent a given fraction by using drawings.	✓			✓	Levels 18-22	✓		x
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	Y	N	M R	P				M R



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	Y	N	M R	P				M R
1.8 Use concepts of negative numbers.	✓			✓	Levels 22-26 Level 19⇨	✓		x
2.0 Students extend their use and understanding of whole numbers to the addition and subtraction of simple decimals:	✓			✓		✓		x
2.1 Estimate and compute the sum of whole numbers and positive decimals to two places.	✓			✓		✓		x
2.2 Round two-place decimals to one decimal or the nearest whole number.	✓			✓		✓		x
3.0 Students solve problems involving addition, subtraction, multiplication, and division of whole numbers and understand the relationships between the operations:	✓			✓		✓		x
3.1 Demonstrate an understanding of, and the ability to use, standard algorithms for the addition and subtraction of multidigit numbers.	✓			✓		✓		x
3.4 Solve problems involving division of multidigit numbers by one-digit numbers.	✓			✓		✓		x
4.0 Students know how to factor small whole numbers.	✓			✓		✓		x
4.1 Understand that many whole numbers break down in different ways.	✓			✓		✓		x
4.2 Know that numbers such as 2,3,5,7,and 11 do not have any factors except themselves and 1 and that such numbers are called prime numbers.	✓			✓	✓		x	
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	Y	N	M R	P				M R

1. Standards-based instructional content as stated in the California Mathematics Framework listed by Strand and standards	2. Standard Development				3. Citations  (NUVP Level)	4. Assessment  Y/N	5. Assessment Citations	
	Y	N	M R	P				M R
<i>Algebra and Functions</i>								
1.0 Students use and interpret variables, mathematical symbols, and properties to write and simplify expressions and sentences.	✓			✓	Level 14⇨	✓		x
1.1 Use letters, boxes, or other symbols to stand for any number in simple expressions or equations.	✓			✓		✓		x
1.2 Interpret and evaluate mathematical expressions that now use parentheses.	✓			✓	Level 20⇨	✓		x
<b>Grade Five</b>								
<i>Number Sense</i>								
1.0 Students compute with very large and very small numbers, positive integers, decimals, and fractions and understand the relationship between decimals, fractions, and percents. They understand the relative magnitude of numbers:	✓			✓	Level 20⇨	✓		x
1.1 Estimate, round, and manipulate very large (e.g., millions) and very small (e.g., thousandths) numbers.	✓			✓		✓		x
1.2 Interpret percents as a part of a hundred; find decimal and percent equivalents for common fractions and explain why they represent the same value; compute a given percent of a whole number.	✓			✓		✓		x
1.3 Understand and compute positive integer powers of nonnegative integers.	✓			✓	Level 23 Level 20⇨	✓		x
<b>1. Standards-based instructional content as stated in the California Mathematics Framework listed by Strand and standards</b>								
<b>2. Standard Development</b>								
<b>3. Citations</b>								
<b>4. Assessment</b>								
<b>5. Assessment Citations</b>								
	Y	N	M R	P	(NUVP Level)	Y/N		M R

1. Standards-based instructional content as stated in the California Mathematics Framework listed by Strand and standards	2. Standard Development				3. Citations  (NUVP Level)	4. Assessment  Y/N	5. Assessment Citations	
	Y	N	M R	P				M R
2.0 Students perform calculations and solve problems involving addition, subtraction, and simple multiplication and division of fractions and decimals:	✓			✓	Level 20⇨	✓		x
2.1 Add, subtract, multiply, and divide with decimals; add with negative integers; subtract positive integers from negative integers.	✓			✓	Level 23⇨	✓		x
2.4 Understand the concept of multiplication and division of fractions.	✓			✓	Level 23⇨	✓		x
2.5 Compute and perform simple multiplication and division of fractions and apply these procedures to solving problems.	✓			✓	Level 20⇨	✓		x
<b>Grade Six</b>								
<i>Number Sense</i>								
1.0 Students compare and order positive and negative fractions, decimals, and mixed numbers. Students solve problems involving fractions, ratios, proportions, and percentages:	✓			✓	Level 20⇨	✓		x
1.1 Compare and order positive and negative fractions, decimals, and mixed numbers.	✓			✓		✓		x
1.2 Interpret and use ratios in different contexts to show the relative size of two quantities.	✓			✓		✓		x
1.3 Use proportions to solve problems.	✓			✓		✓		x
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	Y	N	M R	P				M R

1. Standards-based instructional content as stated in the California Mathematics Framework listed by Strand and standards	2. Standard Development				3. Citations  (NUVP Level)	4. Assessment  Y/N	5. Assessment Citations	
	Y	N	M R	P				M R
1.4 Calculate given percentages of quantities and solve problems involving discounts at sales, interest earned, and tips.	✓			✓	Level 20 ⇨	✓		x
2.0 Students calculate and solve problems involving addition, subtraction, multiplication, and division.	✓			✓		✓		x
2.1 Solve problems involving addition, subtraction, multiplication, and division of positive fractions.	✓			✓		✓		x
2.3 Solve addition, subtraction, multiplication, and division problems, including those arising in concrete situations, that use positive and negative integers and combinations of these operations.	✓			✓	Level 22 ⇨	✓		x
2.4 Determine the least common multiple and the greatest common divisor of whole numbers; use them to solve problems with fractions.	✓			✓		✓		x
<b>Grade Seven</b>								
<i>Number Sense</i>								
1.0 Students know the properties of, and compute with, rational numbers expressed in a variety of forms:	✓			✓	Level 22 ⇨	✓		x
1.1 Read, write, and compare rational numbers in scientific notation (positive and negative powers of ten) with approximate numbers using scientific notation.	✓			✓		✓		x
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	Y	N	M R	P				M R

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	Y	N	M R	P				M R
1.2 Add, subtract, multiply, and divide rational numbers (integers, fractions, and terminating decimals) and take positive rational numbers to whole-number powers.	✓			✓	Level 23↔	✓		x
1.3 Convert fractions to decimals and percents and use these representations in estimations, computations and applications.	✓			✓		✓		x
1.6 Calculate the percentage of increases and decreases of a quantity.	✓			✓		✓		x
1.7 Solve problems that involve discounts, markups, commissions, and profit and compute simple interest.	✓			✓		✓		x
2.0 Students use exponents, powers, and roots and use exponents in working with fractions:	✓			✓		✓		x
2.1 Understand negative whole-number exponents.	✓			✓		✓		x
2.2 Add and subtract fractions by using factoring to find common denominators.	✓			✓		✓		x
2.3 Multiply, divide, and simplify rational numbers using exponent rules.	✓			✓		✓		x
2.4 Use the inverse relationship between raising to a power and extracting the root of a perfect square integer.	✓			✓		✓		x
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	Y	N	M R	P				M R