VSC - Mathematics

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Grade PK	Grade K	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade
Standard 6.0 Knowledge of Number Relationships and Computation/Arithmetic: Students will describe, represent, or apply numbers or their relationships or will estimate or compute using mental strategies, paper/pencil or technology.	**Standard 6.0** Knowledge of Number Relationships and Computation/Arithmetic: Students will describe, represent, or apply numbers or their relationships or will estimate or compute using mental strategies, paper/pencil or technology.	**Standard 6.0** Knowledge of Number Relationships and Computation/Arithmetic: Students will describe, represent, or apply numbers or their relationships or will estimate or compute using mental strategies, paper/pencil or technology.	**Standard 6.0** Knowledge of Number Relationships and Computation/Arithmetic: Students will describe, represent, or apply numbers or their relationships or will estimate or compute using mental strategies, paper/pencil or technology.	**Standard 6.0** Knowledge of Number Relationships and Computation/Arithmetic: Students will describe, represent, or apply numbers or their relationships or will estimate or compute using mental strategies, paper/pencil or technology.	**Standard 6.0** Knowledge of Number Relationships and Computation/Arithmetic: Students will describe, represent, or apply numbers or their relationships or will estimate or compute using mental strategies, paper/pencil or technology.	**Standard 6.0** Knowledge of Number Relationships and Computation/Arithmetic: Students will describe, represent, or apply numbers or their relationships or will estimate or compute using mental strategies, paper/pencil or technology.	**Standard 6.0** Knowledge of Number Relationships and Computation/Arithmetic: Students will describe, represent, or apply numbers or their relationships or will estimate or compute using mental strategies, paper/pencil or technology.	**Standard 6.0** Knowledge of Number Relationships and Computation/Arithmetic: Students will describe, represent, or apply numbers or their relationships or will estimate or compute using mental strategies, paper/pencil or technology.	**Standard 6.0** Knowledge of N Relationships a Computation/A Students will de represent, or ap numbers or the relationships or estimate or con using mental st paper/pencil or technology.
A. Knowledge of Number	**A**. Knowledge of Number and Place Value	**A**. Knowledge of Number and Place Value	**A**. Knowledge of Number and Place Value	**A**. Knowledge of Number and Place Value	**A**. Knowledge of Number and Place Value	**A**. Knowledge of Number and Place Value	**A**. Knowledge of Number and Place Value	**A**. Knowledge of Number and Place Value	**A**. Knowledge o Number and Pla
1. Apply knowledge of whole numbers	**1.** Apply knowledge of whole numbers and place value	**1.** Apply knowledge of whole numbers and place value	**1.** Apply knowledge of whole numbers and place value	**1.** Apply knowledge of whole numbers and place value	**1.** Apply knowledge of whole numbers and place value	**1.** Apply knowledge of fractions, decimals, and place value	**1.** Apply knowledge of rational numbers and place value	**1.** Apply knowledge of rational numbers and place value	**1.** Apply knowle rational numbe place value
a. Build concept of number	**a.** Extend concept of number	**a.** Use concrete materials to compose and decompose quantities up to 20	**a.** Use concrete materials to compose and decompose quantities up to 100	**a.** Read, write, and represent whole numbers using symbols, words, and models **Assessment limit:** • Use whole numbers (0 - 10,000)	**a.** Read, write, and represent whole numbers using symbols, words, and models **Assessment limit:** • Use whole numbers (0 - 1,000,000)	**a.** Read, write, or represent fractions or mixed numbers using symbols, models, and words **Assessment limit:** • Use denominators that are factors of 24 and numbers (0 – 200)	**a.** Read, write, and represent whole numbers **Assessment limit:** • Use exponential form with powers of 10 (0 - 100,000)	**a.** Read, write, and represent whole numbers **Assessment limit:** • Use exponential notation with bases no more than 12 and exponents no more than 3 in standard form (0 – 1000)	**a.** Read, write, represent ratio numbers **Asses limit:** • Use ex notatio scienti notatio (-10,0 1,000,
b. Show an understanding of quantity ***27. Every Tree for Itself***	**b.** Construct relationships between and among quantities using language such as: more than, less than, fewer than, as many as, one more, one less	**b.** Identify multiple representations for a number, such as: 12, 6 + 6, dozen	**b.** List multiple representations for a number	**b.** Express whole numbers using expanded form **Assessment limit:** • Use whole numbers (0 - 10,000)	**b.** Express whole numbers in expanded form **Assessment limit:** • Use whole numbers (0 - 1,000,000)	**b.** Read, write, or represent decimals using symbols, words, or models **Assessment limit:** • Use no more than 3 decimal places (0 – 100)	**b.** Read, write, and represent integers **Assessment limit:** • Use integers from (-100 to 100)	**b.** Express decimals using expanded form **Assessment limit:** • Use decimals with no more than 4 decimal places (0 – 100)	**b.** Compare, or describe rationa numbers with a without relation symbols (<, >, **Asses limit:** • Use no than 4 intege to 100 positiv rationa numbe 100) u equiva forms

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c. Construct relationships based on quantity	**c.** Demonstrate cardinality by answer of how many	**c.** Demonstrate instant recognition of quantities in patterned sets	**c.** Develop a sense of the size of a number in relation to other numbers	**c.** Identify the place value of a digit in a whole number **Assessment limit:** • Use whole numbers (0 - 9,999)	**c.** Identify the place value of a digit in a number **Assessment limit:** • Use whole numbers (0 - 1,000,000)	**c.** Identify and determine equivalent forms of proper fractions **Assessment limit:** • Use denominators that are factors of 100, decimals, or percents (0 – 200)	**c.** Identify and determine equivalent forms of fractions as decimals, as percents, and as ratios **Assessment limit:** • Use proper fractions with denominators as factors of 100, decimals, percents, or ratios (0 – 1000)	**c.** Determine equivalent forms of rational numbers expressed as fractions, decimal, percents, and ratios **Assessment limit:** • Use positive rational numbers (0 – 100)	
d. Use classroom experiences to indicate same, more, or less	**d.** Build meaningful relationships by using 5 and 10 frames	**d.** Use the numbers of 5 and 10 as anchors in relationship to other numbers	**d.** Use the numbers of 10, 50, and 100 as anchors in relationship to other numbers	**d.** Compare, order, and describe whole numbers with or without using relational symbols (<, >, =) **Assessment limit:** • Use no more than four whole numbers (0 - 10,000)	**d.** Compare, order, and describe whole numbers **Assessment limit:** • Use no more than 4 whole numbers with or without using the symbols (<, > , =) and whole numbers (0 - 1,000,000)	**d.** Compare or order fractions with or without using the symbols (<, >, or =) **Assessment limit:** • Use no more than 4 fractions or mixed numbers with denominators that are factors of 100 and numbers (0 – 100)	**d.** Compare and order fractions, decimals alone or mixed together, with and without relational symbols (<, >, =) **Assessment limit:** • Include no more than 4 fractions with denominators with factors of 100 or decimals with up to 2 decimal places (0 – 100)	**d.** Compare, order, and describe rational numbers with or without relational symbols (<, >, =) **Assessment limit:** • Use no more than 4 fractions with denominators that are factors of 300 that are less than 101 (0-100), decimals with no more than 4 decimal places (0-100), percents (0-100) or integers (-100 to 100)	
e. Count and discuss quantity ***27. Every Tree for Itself***	**e.** Use concrete materials to build sets 0 to 10	**e.** Read, write, and represent whole numbers up to 100 and beyond using models, symbols, and words	**e.** Read, write, and represent whole numbers using models, symbols, and words through 1000			**e.** Compare, order, and describe decimals with or without using the symbols (<, >, or =) **Assessment limit:** • Use no more than 4 decimals with no more	**e.** Compare and order integers	**e.** Express whole numbers and decimals in scientific notation	

						than 3 decimal places and numbers (0 – 100)			
f. Use concrete materials to build sets 0 to 5	**f.** Use concrete materials to compose and decompose quantities up to 10	**f.** Express whole numbers up to 99 using expanded form	**f.** Express whole numbers up to 999 using expanded form						
g. Match a numeral to a set 0 to 5	**g.** Match a numeral to a set	**g.** Identify the place value of a digit in a whole number up to 99	**g.** Identify the place value of a digit in whole numbers up to 999						
h. Count to 10	**h.** Count to 31	**h.** Compare and order whole numbers up to 99 using terms such as: greater than, less than, equal to	**h.** Compare and order whole numbers up to 999 using words and relational symbols (>, <, =)						
i. Use ordinal words to indicate position such as: first, next, last	**i.** Count backward from 10	**i.** Estimate quantities up to 50 and use the term "about"	**i.** Estimate quantities up to 100 using a reference point such as 10 and the terminology "about"						
	j. Use ordinal numbers to indicate position such as: first, second, third, fourth, fifth	**j.** Count to 100	**j.** Count forward by 2s, 5s, and 10s starting with numbers other than one						
		k. Count forward and backward starting with numbers other than one	**k.** Count backward by 2s, 5s, and 10s from a multiple of that number						
		l. Use ordinal numbers to indicate position: first through tenth	**l.** Use ordinal numbers to indicate position up to thirty-first						
	2. Recognize fractions	**2.** Apply knowledge of fractions	**2.** Apply knowledge of fractions	**2.** Apply knowledge of fractions	**2.** Apply knowledge of fractions and decimals				
	a. Show initial awareness of fractional parts (halves) using concrete materials	**a.** Read, write, and represent fractions as parts of a single region using symbols and models with denominators of 2 or 4	**a.** Read, write, and represent fractions as parts of a single region using symbols or models with denominators of 2, 3, or 4	**a.** Read, write, and represent fractions as parts of a single region using symbols, words, and models **Assessment limit:** • Use fractions with denominators of 2, 3, or 4	**a.** Read, write, and represent proper fractions of a single region using symbols, words, and models **Assessment limit:** • Use denominators 6, 8, and 10				

		b. Read, write, and represent halves as parts of a set using pictures and models	**b.** Read, write, and represent halves or fourths as parts of a set using symbols, words, and models	**b.** Read, write, and represent fractions as parts of a set using symbols, words, and models **Assessment limit:** • Use fractions with denominators of 2, 3, or 4, and use sets of 2, 3, 4 items, respectively	**b.** Read, write, or represent proper fractions of a set which has the same number of items as the denominator using symbols, words, and models **Assessment limit:** • Use denominators of 6, 8, and 10 with sets of 6, 8, and 10, respectively				
					c. Find equivalent fractions				
					d. Read, write, and represent mixed numbers using symbols, words, and models				
					e. Read, write, and represent decimals using symbols, words and models **Assessment limit:** • Use no more than 2 decimal places and numbers (0-100)				
					f. Express decimals in expanded form **Assessment limit:** • Use no more than 2 decimal places and numbers (0-100)				
					g. Compare and order fractions and mixed numbers with or without using the symbols (<,				

					>, or =) **Assessment limit:** • Use like denominators and no more than 3 numbers (0-20)				
					h. Compare, order, and describe decimals with or without using the symbols (<, >, or =) **Assessment limit:** • Use no more than 3 decimals with no more than 2 decimal places and numbers (0 – 100)				
	3. Recognize and use money	**3.** Apply knowledge of money	**3.** Apply knowledge of money	**3.** Apply knowledge of money	**3.** Apply knowledge of money				
	a. Identify and name the value of pennies, nickels, and dimes	**a.** Determine the value of a given set of mixed currency up to $1	**a.** Determine the value of a given set of mixed currency up to $10	**a.** Represent money amounts in different ways **Assessment limit:** • Use money amounts ($0 - $100)	**a.** Compare the value of sets of mixed currency **Assessment limit:** • Use 2 sets of mixed currency and money ($0 - $100)				
	b. Choose the coin named from a given set of mixed coins	**b.** Demonstrate monetary value using real or play coins	**b.** Represent money amounts up to $10	**b.** Determine the value of a given set of mixed currency **Assessment limit:** • Use coins and bills ($0 - $100)	**b.** Determine the change from $100				
	c. Use money in real-world situations such as a classroom store	**c.** Compare the value of 2 sets of same currency up to $1.00	**c.** Compare the value of 2 sets of mixed currency up to $10	**c.** Compare the value of two sets of mixed currency					
B. Number Theory	**B**. Number Theory	**B**. Number Theory	**B**. Number Theory	**B**. Number Theory	**B**. Number Theory	**B**. Number Theory	**B**. Number Theory	**B**. Number Theory	**B**. Number The

			1. Apply number relationships	**1.** Apply number relationships to:	**1.** Apply number relationships	**1.** Apply number relationships	**1.** Apply number relationships		
			a. Build and describe models of even and odd numbers using concrete materials, and discuss the models	**a.** Identify and describe whole numbers as even or odd **Assessment limit:** • Use whole numbers (0 – 100)	**a.** Identify and use divisibility rules **Assessment limit:** • Use the rules for 2, 5, or 10 with whole numbers (0 – 1000)	**a.** Identify or describe numbers as prime or composite **Assessment limit:** • Use whole numbers (0 – 100)	**a.** Determine prime factorizations for whole numbers and express them using exponential form		
					b. Identify factors **Assessment limit:** • Use whole numbers (0 – 24)	**b.** Identify and use rules of divisibility **Assessment limit:** • Use rules for 2, 3, 5, 9, or 10 and whole numbers (0 - 10,000)			
					c. Identify multiples **Assessment limit:** • Use the first 5 multiples of any single digit whole number	**c.** Identify the greatest common factor **Assessment limit:** • Use 2 numbers whose GCF is no more than 10 and whole numbers (0 – 100)			
						d. Identify a common multiple and the least common multiple **Assessment limit:** • Use no more than 4 single digit whole numbers			
C. Number Computation	**C**. Number Computation	**C**. Number Computation	**C**. Number Computation	**C**. Number Computation	**C**. Number Computation	**C**. Number Computation	**C**. Number Computation	**C**. Number Computation	**C**. Number Com
	1. Analyze number relations and compute	**1.** Analyze number relations and compute	**1.** Analyze number relations and compute	**1.** Analyze number relations and compute	**1.** Analyze number relations and compute	**1.** Analyze number relations and compute	**1.** Analyze number relations and compute	**1.** Analyze number relations and compute	**1.** Analyze num relations and co
	a. Model addition by combining sets of	**a.** Develop strategies for addition and subtraction	**a.** Demonstrate proficiency with addition	**a.** Add numbers using a variety of strategies	**a.** Add whole numbers **Assessment**	**a.** Multiply whole numbers	**a.** Add and subtract fractions and mixed	**a.** Add, subtract, multiply, and divide	**a.** Add, subtrac multiply and di

	concrete objects and describe the results using words and pictures	basic facts such as: counting on, counting back, making ten, doubles, and doubles plus one	and subtraction basic facts using a variety of strategies	**Assessment limit:** • Use no more than 3 addends, with no more than 3 digits in each addend and whole numbers (0 – 1000)	**limit:** • Use up to 3 addends with no more than 4 digits in each addend and whole numbers (0 - 10,000) ***67. How Big is Your Tree; Enrichment*** ***73. Waste Watchers***	**Assessment limit:** Use a 3-digit factor by another factor with no more than 2-digits and whole numbers (0 - 10,000) ***12. Invasive Species; Enrichment*** ***67. How Big is Your Tree?*** ***67. How Big is Your Tree; Enrichment***	numbers and express answers in simplest form **Assessment limit:** • Use proper fractions and denominators as factors of 60 (0–20)	integers **Assessment limit:** • Use one operation (-100 to 100)	integers **Asses limit:** • Use or operat 1000 t
	b. Model subtraction by separating sets of concrete objects and describe the results using words and pictures	**b.** Solve a given word problem based on addition or subtraction situation	**b.** Add no more than 3 whole number addends with no more than 2 digits in each addend and a sum of no more than 100	**b.** Subtract numbers using a variety of strategies **Assessment limit:** • Use no more than 3 digits in the minuend or subtrahend and whole numbers (0 – 999)	**b.** Subtract whole numbers **Assessment limit:** • Use a minuend and subtrahend with no more than 4 digits in each and whole numbers (0 – 9999) ***73. Waste Watchers***	**b.** Divide whole numbers **Assessment limit:** • Use a dividend with no more than a 4-digits by a 2-digit divisor and whole numbers (0 - 9,999) ***67. How Big is Your Tree?*** ***85. In the Driver's Seat; Enrichment***	**b.** Multiply fractions and mixed numbers and express in simplest form **Assessment limit:** • Use denominators as factors of 24 not including 24 (0 – 20)	**b.** Add, subtract, and multiply positive fractions and mixed numbers **Assessment limit:** • Use no more than 2 operations and positive fractions or mixed numbers with denominators as factors of 300 less than 101 (0 – 2000)	**b.** Calculate po integers and sq roots of perfect whole numbers **Asses limit:** • Use po with ba more t and ex no mo 3, or s roots o square more t
	c. Solve a given story problem cooperatively that is based on the combining and separating of models	**c.** Identify the concept of inverse operation to addition and subtraction	**c.** Subtract whole numbers with no more than 2 digits in the minuend or the subtrahend	**c.** Solve addition and subtraction word problems	**c.** Multiply whole numbers **Assessment limit:** • Use a one 1-digit factor by up to a 3-digit factor using whole numbers (0 – 1000) ***38. Every Drop Counts; Part A***	**c.** Interpret quotients and remainders mathematically and in the context of a problem **Assessment limit:** • Use dividend with no more than a 3-digits by a 1 or 2 digit divisor and whole numbers (0 – 999)	**c.** Multiply decimals **Assessment limit:** • Use a decimal with no more than 3 digits multiplied by a 2-digit decimal (0 – 1000)	**c.** Divide fractions and mixed numbers	**c.** Identify and laws of exponer simplify expres **Asses limit:** • Use th power power divided power same i as a ba to 20) expon

									10)
			d. Solve word problems based on addition or subtraction situations	**d.** Add and subtract money amounts	**d.** Divide whole numbers **Assessment limit:** • Use up to a 3-digit dividend by a 1-digit divisor and whole numbers with no remainders (0 - 999)	**d.** Add and subtract proper fractions and mixed numbers with answers in simplest form **Assessment limit:** • Use denominators as factors of 24 and numbers (0 – 20)	**d.** Divide decimals **Assessment limit:** • Use a decimal with no more than 5 digits divided by a whole number with no more than 2 digits without annexing zeros (0 – 1000) ***66. Germinating Giants***	**d.** Calculate powers of integers and square roots of perfect square whole numbers **Assessment limit:** • Use exponents of no more than 3 for integers (-10 to 20) or square roots of perfect square whole numbers (0–100)	**d.** Use properti addition and multiplication to expressions **Asses limit:** • Use th commu proper additio multip associa proper additio multip additiv proper distrib proper identit proper one or with in 100 to
			e. Write word problems for addition and subtraction situations	**e.** Identify and apply the concept of inverse operations to addition and subtraction	**e.** Add and subtract proper fractions and mixed numbers **Assessment limit:** • Use 2 proper fractions with a single digit like denominators, 2 mixed numbers with single digit like denominators, or a whole number and a proper fraction with a single digit denominator and numbers (0 – 20)	**e.** Add decimals including money **Assessment limit:** • Use no more than 4 addends and no more than 3 decimal places in each addend and numbers (0 – 1000)	**e.** Determine a percent of a whole number **Assessment limit:** • Use 10%, 20%, 25% or 50% of a whole number (0 – 1000)	**e.** Use the laws of exponents to simplify expressions **Assessment limit:** • Use the rules of exponents (power times power or power divided by power) with the same whole number base (0 – 100) and exponents (0 – 10)	
			f. Add and subtract money amounts up to $1	**f.** Represent multiplication and division basic facts using number sentences,	**f.** Add 2 decimals **Assessment limit:**	**f.** Subtract decimals including money **Assessment limit:**	**f.** Simplify numeric expressions using the properties of addition and multiplication	**f.** Identify and use the properties of addition and multiplication to simplify expressions	

				pictures, and drawings **Assessment limit:** • Use basic facts of no more than 9 x 9 = 81	• Use the same number of decimal places but no more than 2 decimal places and no more than 4 digits including monetary notation and numbers (0 – 100)	• Use a minuend and subtrahend with no more than 3 decimal places and numbers (0 – 1000)	**Assessment limit:** • Use the distributive property to simplify numeric expressions and whole numbers (0 – 1000)	**Assessment limit:** • Use the commutative property of addition or multiplication, associative property of addition or multiplication, or the identity property for one or zero with whole numbers (0 – 100)	
			g. Apply the concept of inverse operations to addition and subtraction	**g.** Identify and use properties of multiplication **Assessment limit:** • Use the properties of commutative, identity, or zero and whole numbers (0 – 20)	**g.** Subtract decimals **Assessment limit:** • Use the same number of decimal places but no more than 2 decimal places and no more than 4 digits including monetary notation and numbers (0 – 100)	**g.** Multiply decimals **Assessment limit:** • Use a decimal in monetary notation by a single digit whole number and numbers (0 – 100)		**g.** Determine percent of a number	
			h. Build equal groups to model multiplication	**h.** Multiply a one-digit factor by a two-digit factor using models, pictures, and drawings		**h.** Divide decimals by whole numbers			
			i. Build groups that share equally for division	**i.** Divide a two-digit dividend by a one-digit divisor using models, pictures, and drawings					
				j. Identify and apply the concept of inverse operations to multiplication and division					
				k. Write a word problem based on multiplication or division number					

				sentences					
			2. Estimation	**2.** Estimation	**2.** Estimation	**2.** Estimation	**2.** Estimation	**2.** Estimation	**2.** Estimation
			a. Determine the reasonableness of sums and differences	**a.** Determine the reasonableness of sums and differences	**a.** Determine the approximate sum and difference of 2 numbers **Assessment limit:** • Use no more than 2 decimal places in each and numbers (0 – 100)	**a.** Determine the approximate sum and difference of decimals **Assessment limit:** • Use no more than 3 addends with no more than 3 decimal places in each addend or the difference of a minuend and subtrahend with no more than 3 decimal places and numbers (0 – 1000)	**a.** Determine the approximate products and quotients of decimals **Assessment limit:** • Use a decimal with no more than a 3 digits multiplied by a 2-digit whole number, or the quotient of a decimal with no more than 4 digits in the dividend divided by a 2-digit whole number (0 – 1000)	**a.** Determine approximate sums, differences, products, and quotients **Assessment limit:** • Use no more than 3 positive rational numbers (0 – 1000)	**a.** Estimate the roots of whole n **Asses limit:** • Use wh numbe 100)
					b. Determine the approximate product or quotient of 2 numbers **Assessment limit:** • Use a 1-digit factor with the other factor having no more than 2-digits or a 1-digit divisor and no more than a 2-digit dividend and whole numbers (0 – 1000) ***38. Every Drop Counts; Part A***	**b.** Determine approximate product and quotient of whole numbers **Assessment limit:** • Use a 1-digit factor with the other factor having no more than 3 digits or a dividend having no more than 3 digits and a 1-digit divisor and whole numbers (0 – 5000)			
						c. Determine the approximate product of decimals **Assessment limit:** • Use a decimal in monetary			

						notation and a single digit whole number (0 – 100)			
							3. Analyze ratios, proportions, and percents	**3.** Analyze ratios, proportions, or percents	**3.** Analyze ratio proportions, an percents
							a. Represent ratios in a variety of forms	**a.** Determine equivalent ratios **Assessment limit:** • Use denominators as factors of 300 but less than 101 and whole numbers (0-100)	**a.** Determine u **Asses limit:** • Use po rationa numbe 100)
							b. Use ratios and unit rates to solve problems	**b.** Determine and use rates, unit rates, and percents as ratios in the context of a problem **Assessment limit:** • Use whole numbers (0-1000)	**b.** Determine o percents, rates increase and de discount, comm sales tax, and s interest in the c a problem **Asses limit:** • Use po rationa numbe 10,000
								c. Determine rate of increase and decrease, discounts, simple interest, commission, sales tax	**c.** Solve proble proportional rea **Asses limit:** • Use po rationa numbe 1000)
								d. Determine percent of a number	

Note: Highlighted assessment limits will be tested in the no calculator section of MSA. In the assessment limit, (0-10) or (-10 to 10) means all numbers in the problem or the answer will fall within the range of 0 to 10 (including endpoints) or -10 to 10 (including endpoints), respectively. All content standards are tested in MSA but not all objectives. Objectives that have an assessment limit are tested on MSA. Objectives without an assessment limit are not tested on MSA.