SHENENDEHOWA
Mathematics
Essential Content and Competencies

CONTENT STRANDS

Kindergarten through Grade 5

Based on the New York State Standards

Bold items indicate competencies designed for Shenendehowa's standards

CONTENT STRANDS

Counting	Counting	Counting	Counting	Counting	Counting
K.N.1 Count the items in a collection and know the last counting word tells how many items are in the collection (1 to 10)	1.N.1 Count the items in a collection and know the last counting word tells how many items are in the collection (1 to 100)				
K.N.2 Count out (produce) a collection of a specified size 1 to 10	1.N.2 Count out (produce) a collection of a specified size (10 to 100 items), using groups of ten				
K.N.3 Numerically label a data set of 1 to 5 K.N.9 Write numbers 1-10 to represent a collection	1.N.3 Quickly see and label with a number, collections of 1 to 10				
K.N.4 Verbally count by 1's to 20	1.N.4 Count by 1's to 100				
	1.N.8 Verbally count from a number other than one by 1's	2.N.9 Name the number before and the number after a given number, and name the number(s) between two given numbers up to 100 (with and without the use of a number line or a hundreds chart)			

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	1.N.7 Skip count by 2's to 20 1.N.5 Skip count by 10's to 100 1.N.6 Skip count by 5's to 50	2.N.1 Skip count to 100 by 2's, 5's, 10's 2.N.3 Skip count by 3's to 36 for multiplication readiness 2.N.4 Skip count by 4's to 48 for multiplication readiness	3.N.1 Skip count by 25's, 50's, 100's to 1,000	4.N.1 Skip count by 1,000's	
K.N.5 Verbally count backwards from 10	1.N.9 Count backwards from 20 by 1's	2.N.2 Count back from 100 by 1's, **2's**, 5's, 10's using a number chart	**SHEN 3.N.AA** **Count back from 100 by 1's, 2's, 5's, 10's**		
Reading and Writing Whole Numbers	**Reading and Writing Whole Numbers**	**Reading and Writing Whole Numbers**	**Reading and Writing Whole Numbers**	**Reading and Writing Whole Numbers**	**Reading and Writing Whole Numbers**
K.N.6 Represent collections with a finger pattern up to 10					
K.N.7 Draw pictures or other informal symbols to represent a spoken number up to 10					
K.N.8 Draw pictures or other informal symbols to represent how many in a collection up to 10	1.N.10 Draw pictures or other informal symbols to represent a spoken number up to 20				
	1.N.13 Write numbers to 100		3.N.2 Read and write whole numbers to 1,000	4.N.2 Read and write whole numbers to 10,000	5.N.1 Read and write whole numbers to millions
	1.N.14 Read the number words *one, two, three…ten*	**SHEN 2.N.A** **Read number words to one hundred and write number words ten, eleven, twelve…twenty**	**SHEN 3.N.A** **Read number words to one thousand and write number words to one hundred**	**SHEN 4.N.A** **Read number words to ten thousand and write number words to one thousand**	**SHEN 5.N.A** **Read number words to millions and write number words to ten thousand**

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Place Value	Place Value	Place Value	Place Value	Place Value	Place Value
	1.N.15 Explore and use place value 1.N.17 Develop an initial understanding of the base ten system: 10 ones = 1 ten; 10 tens = 1 hundred	2.N.6 Develop an understanding of the base ten system: 10 ones = 1 ten; 10 tens = 1 hundred; 10 hundreds = 1 thousand	3.N.4 Understand the place value structure of the base ten number system: 10 ones = 1 ten; 10 tens = 1 hundred; 10 hundreds = 1 thousand	4.N.4 Understand the place value structure of the base ten number system: 10 ones = 1 ten; 10 tens = 1 hundred; 10 hundreds = 1 thousand; 10 thousands = 1 ten thousand	5.N.3 Understand the place value structure of the base ten number system: 10 ones = 1 ten; 10 tens = 1 hundred; 10 hundreds = 1 thousand; 10 thousands = 1 ten thousand; 10 ten thousands = 1 hundred thousand; 10 hundred thousands = 1 million
	1.N.18 Use a variety of strategies to compose and decompose one-digit numbers	2.N.7 Use a variety of strategies to compose and decompose two-digit numbers	3.N.5 Use a variety of strategies to compose and decompose three-digit numbers	4.N.5 Recognize equivalent representations for numbers up to four digits and generate them by decomposing and composing numbers	
	SHEN 1.N.B Introduce zero and its uses (i.e., # of items in an empty set…)	2.N.13 Recognize the meaning of zero in the place value system (0-100)	**SHEN 3.N.B Recognize the meaning of zero in the place value system (0-1,000)**	**SHEN 4.N.B Recognize the meaning of zero in the place value system (0-10,000)**	**SHEN 5.N.B Recognize the meaning of zero in the place value system (0-1,000,000)**
Compare and Order Numbers	**Compare and Order Numbers**	**Compare and Order Numbers**	**Compare and Order Numbers**	**Compare and Order Numbers**	**Compare and Order Numbers**
	1.N.11 Identify that spacing of the same number of objects does not affect the quantity (conservation)				
	1.N.12 Arrange objects in size order (increasing and decreasing)				
	1.N.16 Compare and order whole numbers up to 100	2.N.5 Compare and order numbers to 100	3.N.3 Compare and order numbers to 1,000	4.N.3 Compare and order numbers to 10,000	5.N.2 Compare and order numbers to millions

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K.N.10 Visually determine how many more or less, and then using the verbal counting sequence, match and count 1-10	1.N.20 Name the numbers before and after a given number, and name the numbers between two given numbers up to 100 (with and without the use of a number line or a hundreds chart) Note: counting by 1's 1.N.21 Use before, after, or between to order numbers to 100 (with or without the use of a number line)	**SHEN 2.N.C** **Name the numbers before and after a given number, and name the numbers between two given numbers up to 100 (without the use of a number line or a hundreds chart)** **Note: counting by 2's 3's, 4's, 5's, 10's**			
	1.N.22 Use the words higher, lower, greater, and less to compare two numbers	2.A.1 Use the symbols <, >, = (with and without the use of a number line) to compare whole numbers up to 100	3.A.1 Use the symbols <, >, = (with and without the use of a number line) to compare whole numbers and unit fractions $\left(\frac{1}{2}, \frac{1}{3}, \frac{1}{4}, \frac{1}{5}, \frac{1}{6}, \text{and } \frac{1}{10}\right)$	4.A.2 Use the symbols <, >, =, and ≠ (with and without the use of a number line) to compare whole numbers and unit fractions and decimals (up to hundredths)	
Rounding and Estimation	**Rounding and Estimation**	**Rounding and Estimation**	**Rounding and Estimation**	**Rounding and Estimation**	**Rounding and Estimation**
	1.N.30 Estimate the number in a collection to 50 and then compare by counting the actual items in the collection	2.N.22 Estimate the number in a collection to 100 and then compare by counting the actual items in the collection	3.N.25 Estimate numbers up to 500 3.N.26 Recognize real world situations in which an estimate (rounding) is more appropriate	4.N.26 Round numbers less than 1,000 to the nearest tens and hundreds	5.N.24 Round numbers to the nearest hundredth and up to 10,000
			3.N.27 Check reasonableness of an answer by using estimation	4.N.27 Check reasonableness of an answer by using estimation	5.N.27 Justify the reasonableness of answers using estimation

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Ordinal Numbers	Ordinal Numbers	Ordinal Numbers	Ordinal Numbers	Ordinal Numbers	Ordinal Numbers
K.N.11 Use and understand verbal ordinal terms, first to tenth	1.N.23 Use and understand verbal ordinal terms, first to twentieth	2.N.10 Use and understand verbal ordinal terms			
		2.N.11 Read written ordinal terms (first through ninth) and use them to represent ordinal relations	**SHEN 3.N.D Read and write ordinal terms (first through twentieth) and use them to represent ordinal relations**		
Number Properties	**Number Properties**	**Number Properties**	**Number Properties**	**Number Properties**	**Number Properties**
	1.N.19 Understand the commutative property of addition name the number(s) between two given numbers up to 100 (with and without the use of a number line or a hundreds chart)	2.N.8 Understand and use the commutative property of addition	3.N.6 Use and explain the commutative property of addition and multiplication		
		2.N.12 Use zero as the identity element for addition	3.N.7 Use 1 as the identity element for multiplication 3.N.8 Use the zero property of multiplication	**SHEN 4.N.E Use proper terminology for the identity properties**	**SHEN 5.N.E Use proper terminology for the identity properties**
			3.N.9 Understand and use the associative property of addition	4.N.6 Understand, use, and explain the associative property of multiplication	

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Odd & Even Numbers	Odd & Even Numbers	Odd & Even Numbers	Odd & Even Numbers	Odd & Even Numbers	Odd & Even Numbers
		2.N.14 Use concrete materials to justify a number as odd or even	3.N.16 Identify odd and even numbers		
			3.N.17 Develop an understanding of the properties of odd/even numbers as a result of addition or subtraction	4.N.13 Develop an understanding of the properties of odd/even numbers as a result of multiplication	
Whole Number Addition/Subtraction	**Whole Number Addition/Subtraction**	**Whole Number Addition/Subtraction**	**Whole Number Addition/Subtraction**	**Whole Number Addition/Subtraction**	**Whole Number Addition/Subtraction**
K.N.13 Determine sums and differences by various means	1.N.29 Understand that different parts can be added to get the same whole	2.N.15 Determine sums and differences of number sentences by various means (i.e., families, related facts, inverse operations, addition doubles, and doubles plus one)			
	1.N.28 Demonstrate fluency and apply addition and subtraction facts to and including 10	2.N.17 Demonstrate fluency and apply addition and subtraction facts up to and including 18			
K.N.12 Solve and create addition and subtraction verbal word problems (use counting-based strategies, such as counting on and to ten)	1.N.24 Develop and use strategies to solve addition and subtraction word problems 1.N.25 Represent addition and subtraction word problems and their solutions as number sentences 1.N.26 Create problem situations that represent a given number sentence	2.N.16 Use a variety of strategies to solve addition and subtraction problems using one- and two-digit numbers with and without regrouping	3.N.18 Use a variety of strategies to add and subtract 3-digit numbers (with and without regrouping) (i.e., compensation, doubles, doubles plus 1…)	4.N.14 Use a variety of strategies to add and subtract numbers up to 10,000	

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	1.N.27 Use a variety of strategies to solve addition and subtraction problems with one- and two-digit numbers without regrouping	2.N.18 Use doubling to add 2-digit numbers 2.N.19 Use compensation to add 2-digit numbers			
Whole Number Multiplication	**Whole Number Multiplication**	**Whole Number Multiplication**	**Whole Number Multiplication**	**Whole Number Multiplication**	**Whole Number Multiplication**
		2.N.20 Develop readiness for multiplication by using repeated addition	3.N.21 Use the area model, tables, patterns, arrays, and doubling to provide meaning for multiplication		
			3.N.19 Develop fluency with single-digit multiplication facts		
			3.N.20 Use a variety of strategies to solve multiplication problems with factors up to 12 x 12	4.N.18 Use a variety of strategies to multiply two-digit numbers by one-digit numbers (with and without regrouping) 4.N.19 Use a variety of strategies to multiply two-digit numbers by two-digit numbers (with and without regrouping)	5.N.16 Use a variety of strategies to multiply three-digit by three-digit numbers Note: Multiplication by anything greater than a three-digit multiplier/ multiplicand should be done using technology
Whole Number Division	**Whole Number Division**	**Whole Number Division**	**Whole Number Division**	**Whole Number Division**	**Whole Number Division**
		2.N.21 Develop readiness for division by using repeated subtraction, dividing objects into groups (fair share)	3.N.23 Use tables, patterns, halving, and manipulatives to provide meaning for division	4.N.16 Understand various meanings of multiplication and division	
			3.N.22 Demonstrate fluency and apply single-digit division facts	4.N.20 Develop fluency in multiplying and dividing multiples of 10 and 100 up to 1,000	

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			3.N.24 Develop strategies for selecting the appropriate computational and operational method in problem solving situations	4.N.17 Use multiplication and division as inverse operations to solve problems	
				4.N.15 Select appropriate computational and operational methods to solve problems	
				4.N.21 Use a variety of strategies to divide two-digit dividends by one-digit divisors (with and without remainders) 4.N.22 Interpret the meaning of remainders	5.N.17 Use a variety of strategies to divide three-digit numbers by one- and two-digit numbers Note: Division by anything greater than a two-digit divisor should be done using technology.
					5.N.18 Evaluate an arithmetic expression using order of operations including multiplication, division, addition, subtraction and parentheses
Decimals	**Decimals**	**Decimals**	**Decimals**	**Decimals**	**Decimals**
				4.N.10 Develop an understanding of decimals as part of a whole	

				4.N.11 Read and write decimals to hundredths, using money as a context 4.N.12 Use concrete materials and visual models to compare and order decimals (less than 1) to the hundredths place in the context of money	5.N.8 Read, write, and order decimals to thousandths
				4.A.2 Use the symbols <, >, =, and ≠ (with and without the use of a number line) to compare whole numbers and unit fractions and decimals (up to hundredths)	5.N.10 Compare decimals using <, >, =, or ≠
				4.N.24 Express decimals as an equivalent form of fractions to tenths and hundredths	**SHEN 5.N.F Express decimals as an equivalent form of fractions to tenths, hundredths and thousandths**
				4.N.25 Add and subtract decimals to tenths and hundredths using a hundreds chart	5.N.23 Use a variety of strategies to add, subtract, multiply, and divide decimals to thousandths
					5.N.26 Estimate sums differences, products, and quotients of decimals

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Factors and Multiples	Factors and Multiples	Factors and Multiples	Factors and Multiples	Factors and Multiples	Factors and Multiples
					5.N.12 Recognize that some numbers are only divisible by one and themselves (prime) and others have multiple divisors (composite)
					5.N.13 Calculate multiples of a whole number and the least common multiple of two numbers
					5.N.14 Identify the factors of a given number
					5.N.15 Find the common factors and the greatest common factor of two numbers
Fractions	**Fractions**	**Fractions**	**Fractions**	**Fractions**	**Fractions**
		SHEN 2.N.G Develop an understanding of ½ as part of a whole unit and as parts of a collection	3.N.10 Develop an understanding of fractions as part of a whole unit and as parts of a collection 3.N.13 Recognize fractional numbers as equal parts of a whole	4.N.7 Develop an understanding of fractions as locations on number lines and as divisions of whole numbers	

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		SHEN 2.N.H Use manipulatives, visual models, and illustrations to name and represent ½ as part of a whole or a set of objects	3.N.11 Use manipulatives, visual models, and illustrations to name and represent unit fractions $\left(\frac{1}{2}, \frac{1}{3}, \frac{1}{4}, \frac{1}{5}, \frac{1}{6}, \text{and } \frac{1}{10}\right)$ as part of a whole or a set of objects		
		SHEN 2.N.I Understand and recognize the meaning of numerator and denominator in the symbolic form of ½	3.N.12 Understand and recognize the meaning of numerator and denominator in the symbolic form of a fraction		
			3.N.14 Explore equivalent fractions	4.N.8 Recognize and generate equivalent fractions (halves, fourths, thirds, fifths, sixths, and tenths) using manipulatives, visual models, and illustrations *5.N.4 Create equivalent fractions, given a fraction*	5.N.4 Create equivalent fractions, given a fraction
					5.N.19 Simplify fractions to lowest terms
		SHEN 2.N.J Compare and order unit fraction ½ with the use of manipulatives (i.e., a ruler, number line…)	3.N.15 Compare and order unit fractions (½, ⅓, ¼) and find their approximate locations on a number line	4.N.9 Use concrete materials and visual models to compare and order unit fractions or fractions with the same denominator (with and without the use of a number line)	5.N.5 Compare and order fractions including unlike denominators (with and without the use of a number line) Note: Commonly used fractions such as those that might be indicated on a ruler, measuring cup, etc.

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			3.A.1 Use the symbols <, >, = (with and without the use of a number line) to compare whole numbers and unit fractions $\left(\frac{1}{2}, \frac{1}{3}, \frac{1}{4}, \frac{1}{5}, \frac{1}{6}, \text{and } \frac{1}{10}\right)$	4.A.2 Use the symbols <, >, =, and ≠ (with and without the use of a number line) to compare whole numbers and unit fractions and decimals (up to hundredths)	5.N.9 Compare fractions using <, >, =, or ≠ **with like and unlike denominators**
					5.N.20 Convert improper fractions to mixed numbers, and mixed numbers to improper fractions
				4.N.23 Add and subtract proper fractions with common denominators *5.N.22 Add and subtract mixed numbers with common denominators*	5.N.21 Use a variety of strategies to add and subtract fractions with common denominators
					5.N.22 Add and subtract mixed numbers with common denominators
					5.N.25 Estimate sums and differences of fractions with common denominators
					5.N.6 Understand the concept of ratio 5.N.7 Express ratios in different forms

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					5.N.11 Understand that percent means part of 100, and write percents as fractions and decimals
Algebra	**Algebra**	**Algebra**	**Algebra**	**Algebra**	**Algebra**
			SHEN 3.A.A Solve open sentences with one operation	4.A.1 Evaluate and express relationships using open sentences with one operation	5.A.1 Define and use appropriate terminology when referring to constants, variables, and algebraic expressions
			SHEN 3.A.B Introduce the term variable	*5.A.2 Translate simple verbal expressions into algebraic expressions*	5.A.2 Translate simple verbal expressions into algebraic expressions
			SHEN 3.A.C Given an open sentence that contains < or >, find a value that makes it true	4.A.3 Find the value or values that will make an open sentence true, if it contains < or > *5.A.3 Substitute assigned values into variable expressions*	5.A.3 Substitute assigned values into variable expressions and evaluate using order of operations
				5.A.4 Solve simple one-step equations using basic whole-number facts	5.A.4 Solve simple one-step equations using basic whole-number facts
				5.A.5 Solve and explain simple one-step equations using inverse operations involving whole numbers	5.A.5 Solve and explain simple one-step equations using inverse operations involving whole numbers

CONTENT STRANDS

Patterns	Patterns	Patterns	Patterns	Patterns	Patterns
K.A.1 Use a variety of manipulatives to create patterns using attributes of color, size, or shape	1.A.1 Determine and discuss patterns in arithmetic (what comes next in a repeating pattern, using numbers or objects)	2.A.2 Describe and extend increasing or decreasing (+,-) sequences and patterns (numbers or objects up to 100)	3.A.2 Describe and extend numeric (+, -) and geometric patterns	4.A.4 Describe, extend, and make generalizations about numeric (+,−,×,÷) and geometric patterns	5.A.7 Create and explain patterns and algebraic relationships (i.e. 2,4,6,8...) algebraically: 2n (doubling) 5.A.8 Create algebraic or geometric patterns using concrete objects or visual drawings (i.e., rotate and shade geometric shapes)
K.A.2 Recognize, describe, extend, and create patterns that repeat (i.e., ABABAB or ABAABAAAB)			**SHEN 3.A.D Analyze a pattern or a whole-number function (+, -) and state the rule, given a table or an input/output box**	4.A.5 Analyze a pattern or a whole-number function and state the rule, given a table or an input/output box	**SHEN 5.A.D Analyze a pattern or a whole-number function that requires a multi-step process and state the rule, given a table or an input/output box (i.e., 2x + 1)**

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Geometry	Geometry	Geometry	Geometry	Geometry	Geometry
K.G.1 Describe characteristics and relationships of geometric objects (circle, square)	1.G.5 Recognize geometric shapes and structures in the environment (circle, square, rectangle and triangle)	2.G.2 Identify and appropriately name two-dimensional shapes: circle, square, rectangle, and both a regular and an irregular triangle 2.G.3 Compose (put together) and decompose (break apart) two-dimensional shapes	3.G.1 Define and use correct terminology when referring to shapes (circle, triangle, square, rectangle, parallelogram, rhombus, trapezoid, and hexagon) *4.G.1 Identify and name polygons, recognizing that their names are related to the number of sides*	4.G.1 Identify and name polygons, recognizing that their names are related to the number of sides and angles (triangle, trapezoid, quadrilateral, pentagon, rhombus, parallelogram, hexagon, and octagon)	**SHEN 5.G.A** **Identify and name polygons, recognizing that their names are related to the number of sides and angles (triangle, trapezoid, quadrilateral, pentagon, rhombus, parallelogram, hexagon, and octagon) and be able to name the set that they belong to** 5.G.4 Classify quadrilaterals by properties of their angles and sides 5.G.5 Know that the sum of the interior angles of a quadrilateral is 360 degrees
K.G.2 Sort groups of objects by size and size order (increasing and decreasing) K.S.3 Sort and organize objects by two attributes (i.e., color, size, or shape)	1.S.5 Use Venn diagrams to sort and describe data	2.G.4 Group objects by like properties			

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K.G.5 Understand and use ideas such as over, under, above, below, on, beside, next to, and between					
				4.G.2 Identify points and line segments when drawing a plane figure **using proper notation**	
				4.G.6 Draw and identify intersecting, perpendicular, and parallel lines **using proper notation**	
				4.G.7 Identify points and rays when drawing angles **using proper notation**	5.M.8 Measure and draw angles using a protractor
				4.G.8 Classify angles as acute, obtuse, right, and straight	5.G.6 Classify triangles by properties of their angles and sides 5.G.7 Know that the sum of the interior angles of a triangle is 180 degrees 5.G.8 Find a missing angle when given two angles of a triangle

CONTENT STRANDS

Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5
K.G.3 Explore vertical and horizontal orientation of objects	1.G.1 Match shapes and parts of shapes to justify congruency **with the use of manipulatives**	**SHEN 2.G.B Identify congruent figures without the use of manipulatives**	3.G.2 Identify congruent and similar figures	**SHEN 4.G.B Identify and draw congruent and similar figures**	5.G.2 Identify pairs of similar triangles 5.G.9 Identify pairs of congruent triangles 5.G.3 Identify the ratio of corresponding sides of similar triangles 5.G.10 Identify corresponding parts of congruent triangles
	1.G.3 Experiment with slides, flips, and turns of two-dimensional shapes	2.G.1 Experiment with slides, flips, and turns to compare two-dimensional shapes 2.G.5 Explore and predict the outcome of slides			
K.G.4 Manipulate two- and three-dimensional shapes to explore symmetry	1.G.4 Identify symmetry in two-dimensional shapes	2.G.6 Explore line symmetry flips, and turns of two-dimensional shapes	3.G.5 Identify and construct lines of symmetry	**SHEN 4.G.C Identify and draw lines of symmetry of basic geometric shapes**	5.G.11 Identify and draw **all** lines of symmetry of basic geometric shapes (i.e., all 4 lines on a square)
	1.G.2 Recognize, name, describe, create, sort, and compare two dimensional and three-dimensional shapes		3.G.3 Name, describe, compare, and sort three-dimensional shapes: cube, cylinder, sphere, prism, and cone 3.G.4 Identify the faces on a three-dimensional shape as two-dimensional shapes	4.G.5 Define and identify vertices, faces, and edges of three-dimensional shapes	

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			4.G.3 Find perimeter of polygons by adding sides	4.G.3 Find perimeter of polygons by adding sides *5.G.1 Calculate the perimeter of regular and irregular polygons*	5.G.1 Calculate the perimeter of regular and irregular polygons 5.A.6 Evaluate the perimeter formulas for given input values
			4.G.4 Find the area of a rectangle by counting the number of squares needed to cover the rectangle	4.G.4 Find the area of a rectangle by counting the number of squares needed to cover the rectangle **and use the formula for area**	**SHEN 5.G.D** **Find the area of irregular polygons by counting the number of squares**
					5.G.12 Identify and plot points in the first quadrant 5.G.13 Plot points to form basic geometric shapes (identify and classify) 5.G.14 Calculate perimeter of basic geometric shapes drawn on a coordinate plane (rectangles and shapes composed of rectangles having sides with integer lengths and parallel to the axes)

CONTENT STRANDS

Measurement	Measurement	Measurement	Measurement	Measurement	Measurement
K.M.1 Name, discuss, and compare attributes of length (longer than, shorter than) K.M.2 Compare the length of two objects by representing each length with string or a paper strip	1.M.1 Recognize length as an attribute that can be measured 1.M.2 Use non-standard units (including finger lengths, paper clips, students' feet and paces) to measure both vertical and horizontal lengths 1.M.3 Informally explore the standard unit of measure, inch	2.M.1 Use non-standard and standard units to measure both vertical and horizontal lengths 2.M.2 Use a ruler to measure standard units (including whole inches and whole feet)	3.M.1 Select tools and units (customary) appropriate for the length measured 3.M.2 Use a ruler/yardstick to measure to the nearest standard unit (whole and ½ inches, whole feet, and whole yards)	4.M.1 Select tools and units (customary and metric) appropriate for the length being measured 4.M.2 Use a ruler to measure to the nearest standard unit (whole, ½ and ¼ inches, whole feet, whole yards, whole centimeters, and whole meters	5.M.1 Use a ruler to measure to the nearest inch, $\frac{1}{2}$, $\frac{1}{4}$, and $\frac{1}{8}$ inch 5.M.6 Determine the tool and technique to measure with an appropriate level of precision: lengths and angles
		2.M.3 Compare and order objects according to the attribute of length	**SHEN 3.M.A Understand how more than one unit of measurement can be used to measure the same object**	4.M.3 Know and understand equivalent standard units of length: 12 inches = 1 foot 3 feet = 1 yard	5.M.2 Identify customary equivalent units of length **(ex. 4 x ¼ inch = 1 inch, 2 x 1 x ¼ inch = ½ inch)** 5.M.4 Identify equivalent metric units of length **(m, mm, cm, km)** 5.M.5 Convert measurement within a given system

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Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5
	1.M.11 Select and use non-standard units to estimate measurements	2.M.10 Select and use standard (customary) and non-standard units to estimate measurements	3.M.10 Select and use standard (customary) and non-standard units to estimate measurements	**SHEN 4.M.B Select and use appropriate metric units to estimate measurements (centimeter, meter, kilometer)**	5.M.9 Determine personal references for customary units of length (i.e., your pace is approximately 3 feet, your height is approximately 5 feet, etc.) 5.M.10 Determine personal references for metric units of length 5.M.11 Justify the reasonableness of estimates
				SHEN 4.M.C Measure to the nearest centimeter	5.M.3 Measure to the nearest **millimeter,** centimeter **and meter**
		2.M.4 Recognize mass as a qualitative measure (i.e., Which is heavier? Which is lighter?) 2.M.5 Compare and order objects, using lighter than and heavier than	3.M.3 Measure objects, using ounces and pounds	4.M.4 Select tools and units appropriate to the mass of the object being measured (grams and kilograms) 4.M.5 Measure mass, using grams	

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			3.M.4 Recognize capacity as an attribute that can be measured 3.M.5 Compare capacities (i.e., Which contains more? Which contains less?) 3.M.6 Measure capacity, using cups, pints, quarts, and gallons	4.M.6 Select tools and units appropriate to the capacity being measured (milliliters and liters) 4.M.7 Measure capacity, using milliliters and liters	
K.M.3 Relate specific times such as morning, noon, afternoon, and evening to activities and absence or presence of daylight	1.M.7 Recognize specific times (morning, noon, afternoon, evening) 1.M.8 Tell time to the hour, using both digital and analog clocks	2.M.9 Tell time to the half hour and five minutes using both digital and analog clocks	3.M.9 Tell time to the minute, using digital and analog clocks 3.M.8 Relate unit fractions to the face of the clock: Whole = 60 minutes; 1/2 = 30 minutes; 1/4 = 15 minutes *4.M.9 Calculate elapsed time in hours and half hours, not crossing A.M./P.M.*	4.M.9 Calculate elapsed time in hours and half hours, not crossing A.M./P.M.	5.M.7 Calculate elapsed time in hours and minutes
	1.M.9 Know the days of the week and months of the year in sequence		**SHEN 3.M.D Calculate elapsed time in days (up to 10 days using a calendar)**	4.M.10 Calculate elapsed time in days and weeks, using a calendar	

CONTENT STRANDS

	1.M.10 Classify months and connect to seasons and other events	**SHEN 2.M.E Relate numerical value to month of the year**	**SHEN 3.M.E Write date in numerical form**		
	1.M.4 Know vocabulary and recognize coins (penny, nickel, dime, quarter)	2.M.6 Know and recognize coins (penny, nickel, dime, quarter) and bills ($1, $5, $10, and $20)	3.M.7 Count and represent combined coins and dollars, using currency symbols ($0.00) *4.M.8 Make change, using combined coins and dollar amounts*	4.M.8 Make change, using combined coins and dollar amounts	
	1.M.5 Recognize the cent notation as ¢	2.M.7 Recognize the whole dollar notation as $1, etc.			
	1.M.6 Use different combinations of coins to make money amounts up to 25 cents	2.M.8 Identify equivalent combinations to make one dollar			
Graphing	**Graphing**	**Graphing**	**Graphing**	**Graphing**	**Graphing**
K.S.1 Gather data in response to questions posed by the teacher and students	1.S.9 Construct a question that can be answered by using information from a graph 1.S.1 Pose questions about themselves and their surrounding	2.S.1 Formulate questions about themselves and their surroundings	3.S.1 Formulate questions about themselves and their surroundings	4.S.1 Design investigations to address a question from given data	
	1.S.2 Collect and record data related to a question	2.S.2 Collect and record data (using tallies) related to the question	3.S.2 Collect data using observation and surveys, and record appropriately	4.S.2 Collect data using observations, surveys, and experiments and record appropriately	5.S.1 Collect and record data from a variety of sources (i.e., newspapers, magazines, polls, charts, and surveys)

CONTENT STRANDS

Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5
K.S.2 Help to make simple pictographs for quantities up to 10, where one *a* picture represents 1	1.S.3 Display data in simple pictographs for quantities up to 20 with units of one	2.S.3 Display data in pictographs and bar graphs using concrete objects or a representation of the object		4.S.3 Represent data using tables, bar graphs, and pictographs	5.S.2 Display data in a line graph to show an increase or decrease over time
K.S.4 Represent data using manipulatives	1.S.4 Display data in bar graphs using concrete objects with intervals of one	2.S.4 Compare and interpret data in terms of describing quantity (similarity or differences)	3.S.4 Identify the parts of pictographs and bar graphs 3.S.5 Display data in pictographs and bar graphs **(stress proper spacing between bars and pictures)**	4.S.4 Read and interpret line graphs	
K.S.5 Identify more, less, and same amounts from pictographs or concrete models	1.S.8 Discuss conclusions and make predictions in terms of the words likely and unlikely	2.S.5 Discuss conclusions and make predictions from graphs	3.S.8 Formulate conclusions and make predictions from graphs	4.S.6 Formulate conclusions and make predictions from graphs	5.S.4 Formulate conclusions and make predictions from graphs **(line, bar and pictographs)**
	1.S.7 Answer simple questions related to data displayed in pictographs (i.e., category with most, how many more in a category compared to another, how many all together in two categories)	**SHEN 2.S.A Answer simple questions related to data displayed in pictographs (i.e., category with most, how many more in a category compared to another, how many all together in two or more categories)**		4.S.5 Develop and make predictions that are based on data	5.S.3 Calculate the mean, **median and mode** for a given set of data and use to describe a set of data

CONTENT STRANDS

Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5
	1.S.6 Interpret data in terms of the words: most, least, greater than, less than, or equal to	*3.S.7 Read and interpret data in bar graphs and pictographs*	3.S.3 Construct a frequency table to represent a collection of data 3.S.6 State the relationships between pictographs and bar graphs 3.S.7 Read and interpret data in bar graphs and pictographs		
Probability	**Probability**	**Probability**	**Probability**	**Probability**	**Probability**
					5.S.5 List the possible outcomes for a single-event experiment 5.S.6 Record experiment results using fractions/ratios
					5.S.7 Create a sample space and determine the probability of a single event, given a simple experiment (i.e., rolling a number cube)