

The Carey School Standards for Mathematics Education (2006)

Numbers and Operations 1: Understand numbers, ways of representing numbers, relationships among numbers and number systems.

Count with understanding and recognize “how many” in sets of objects.

<i>B= Beginning, D= Developing, S= Secure</i>	PK	K	1	2	3	4	5
<i>Demonstrate understanding of one-to-one correspondence.</i>	B/D	D/S					
<i>Form groups of 1-10 objects; match correct numbers to groups of 0-10; count 1-10 objects, actions, or sounds.</i>	B/D	S					
<i>Make sensible estimates of groups of objects.</i>		B/D	S				
<i>Skip count by 2,5, and 10.</i>		B	D	S			
<i>Count forward from 0-115 and backwards from 20-0.</i>		B/D	S				
<i>Count on from varying starting points.</i>		B	D/S				
<i>Write and count tally marks.</i>		B	D	S			

Use multiple models to develop initial understandings of place value and the base-ten number system.

<i>B= Beginning, D= Developing, S= Secure</i>	PK	K	1	2	3	4	5
<i>Understand place value for ones, tens, and hundreds</i>		B	D	S			
<i>Express automatically values of digits in 2, 3, and 4 digit numbers with a sense of values in 5 digit numbers.</i>			B	D/S			
<i>Read and write money amounts in decimal notation.</i>			B	D/S			

Develop understanding of the relative position and magnitude of whole numbers and of ordinal and cardinal numbers and their connections.

<i>B= Beginning, D= Developing, S= Secure</i>	PK	K	1	2	3	4	5
<i>Recognize numbers up to 20; write numbers from 1-10; perform rote counting from 1-20</i>	B	D/S					

<i>Write numbers from 1-100.</i>	B	D	S				
<i>Understand concept of 0.</i>		B	D	S			
<i>Understand each “teen” number as a 10 + a digit.</i>		B/D	S				
Develop a sense of whole numbers and represent and use them in flexible ways, including relating, composing and decomposing numbers.							
<i>B= Beginning, D= Developing, S= Secure</i>	PK	K	1	2	3	4	5
<i>Compare groups of objects to determine more, less, same/equal.</i>	B	D	S				
<i>Identify smaller and larger numbers in a number pair.</i>		B/D	D	D/S			
<i>Understand the concept of equivalent names for numbers as name collections.</i>		B	D	D/S			
<i>Identify numbers as odd or even.</i>			B/D	S			
<i>Compare numbers using greater than, less than, or equal to symbols.</i>			B/D	D/S			
Connect number words and numerals to the quantities they represent, using various physical models and representations.							
<i>B= Beginning, D= Developing, S= Secure</i>	PK	K	1	2	3	4	5
<i>Identify pennies, nickels, dimes, and quarters making connections between value and whole numbers.</i>	B	D	S				
<i>Identify one, five, ten and twenty dollar bills making connections between value and whole numbers.</i>		B	D/S				
<i>Understand five minute increments on a clock</i>			B/D	S			
Understand and represent commonly used fractions such as $\frac{1}{4}$, $\frac{1}{3}$, and $\frac{1}{2}$.							
<i>B= Beginning, D= Developing, S= Secure</i>	PK	K	1	2	3	4	5
<i>Identify wholes, halves, quarters, and thirds</i>			B/D	D	S		
<i>Identify fractional parts of a region or set; Understand fractions as names for equal parts</i>			B/D	D	S		

<i>Tell time to the nearest hour and half hour</i>			D	S			
<i>Understand that an amount represented by a fraction depends on the size of the whole</i>			B	D	S		
Understand the place value structure of the base ten number system and be able to represent and compare whole numbers and decimals.							
<i>B= Beginning, D= Developing, S= Secure</i>	PK	K	1	2	3	4	5
<i>Model and write up to 6-digit numbers in standard and expanded form</i>					D/S		
<i>Compare two and three digit numbers using greater than and less than</i>					D/S		
<i>Use place value to order two and three digit numbers from least to greatest and greatest to least</i>					D/S		
<i>Explore the magnitude of 1000</i>				B/D	S		
<i>Read and write fractions and decimals expressed as tenths and hundredths</i>					D	S	
<i>Read and write decimals greater than one</i>					D	S	
<i>Use place value knowledge to round two, three and four digit numbers to the nearest 10, 100, or 1000</i>					D	S	
<i>Round to the nearest \$1.00</i>					S		
<i>Understand decimal values to the thousandth place</i>						D	S
<i>Compare and order decimals to the thousandth place and whole numbers through the billions</i>						D	S
<i>Round decimals to the nearest tenth and nearest whole number</i>						D	S
<i>Read and write whole numbers through the billions</i>						D	S
<i>Compare and order decimals up to the millionths</i>							D
<i>Use place value to explore number through the trillions and decimals through the millionths</i>							D
<i>Round whole numbers through trillions and decimals through millionths</i>							D
Recognize equivalent representations for the same number and generate them by decomposing and composing numbers.							

<i>B= Beginning, D= Developing, S= Secure</i>	PK	K	1	2	3	4	5
<i>Write a fraction with a denominator that is a factor of 100 as a percent and vice versa</i>						D	S
<i>Recognize the equivalency between percent, decimals and fraction</i>						D	S
<i>Use exponents to write whole numbers and decimals in expanded form and write power of ten in exponent form</i>							B/D
<i>Write numbers in scientific notation</i>							B
Develop understanding of fractions as parts of unit wholes, as parts of a collection, as locations on number lines, and as divisions of whole numbers; Use models, benchmarks, and equivalent forms to judge the size of fractions.							
<i>B= Beginning, D= Developing, S= Secure</i>	PK	K	1	2	3	4	5
<i>Compare fractions using a visual model</i>				B/D	S		
<i>Use fraction strips and models to identify fractions as equal parts of a whole or set</i>				B	D	S	
<i>Shade a specific fractional part of a region of set; give fraction name</i>				B/D	D	S	
<i>Compare fractions with like and unlike denominators using fraction strips and number lines</i>					B/D	S	
<i>Use fraction strips to order fractions from least to greatest and greatest to least</i>					B	D	
<i>Use pictorial models and number lines to name mixed numbers</i>					B/D	D	
<i>Write the word name for a fraction and a fraction for the word name</i>				B	D	D/S	
<i>Compare and order fractions and mixed numbers with like and unlike denominators without visuals</i>					B	D	D
<i>Find equivalent fractions with and without models</i>						B	D
<i>Determine if fractions are closer to 0, $\frac{1}{2}$, or 1</i>						B	D

Recognize and generate equivalent forms of commonly used fractions, decimals and percents.							
<i>B= Beginning, D= Developing, S= Secure</i>	PK	K	1	2	3	4	5
<i>Find equivalent fractions for given fractions</i>				B/D	D	D	S
<i>Write improper fractions as mixed numbers and vice versa</i>					B	D	D
<i>Write percents for lowest term fractions</i>						B/D	D
<i>Convert between percents, decimals and fractions</i>						B/D	D
<i>Find the percent of a given number</i>						B/D	D
<i>Express fractions in simplest form</i>					B	D	D
<i>Write percents greater than 100% as decimals and mixed numbers in simplest form</i>							B
<i>Write percents less than 1% as decimals and fractions, and vice versa</i>							B
<i>Solve word problems involving percents</i>							B/D
Explore numbers less than 0 by extending the number line and through familiar applications.							
<i>B= Beginning, D= Developing, S= Secure</i>	PK	K	1	2	3	4	5
<i>Identify negative numbers by naming the opposite of a positive integer</i>						B	D
<i>Use a number line to add and subtract integers with like and unlike signs</i>						B	D
<i>Order up to six integers with and without a number line</i>							B/D
<i>Graph negative and positive integers</i>							B/D
<i>Add and subtract negative and positive integers without a number line</i>							B
<i>Use repeated addition patterns to multiply integers with like and unlike denominators</i>							B
<i>Use inverse of multiplication and rules to divide integers with like and unlike</i>							B

<i>signs</i>								
Describe classes of numbers according to characteristics such as the nature of their factors.								
<i>B= Beginning, D= Developing, S= Secure</i>	PK	K	1	2	3	4	5	
<i>Find the greatest common factor</i>						B/D	D	
<i>Find the least common multiple</i>						D	D/S	
<i>List the factors of a number and find common factors</i>					B	D	D	
<i>Explore 1 and 2 digit prime and composite numbers</i>						B	D	
<i>Find the prime factorization of a number</i>						B	D	
<i>Identify integers</i>						B/D	D	
<i>Identify, compare and order rational numbers</i>							B	
Numbers and Operations 2: Understand meanings of operations and how they relate to one another.								
Understand various meanings of addition and subtraction of whole numbers and the relationships between the two operations.								
<i>B= Beginning, D= Developing, S= Secure</i>	PK	K	1	2	3	4	5	
<i>Develop meanings for addition and subtraction through joining and removing objects</i>	B	D	S					
<i>Tell addition and subtraction stories</i>		B/D	D	S				
<i>Understand the inverse relationship between addition and subtraction</i>			B	D/S				
Understand the effects of adding and subtracting whole numbers.								
<i>B= Beginning, D= Developing, S= Secure</i>	PK	K	1	2	3	4	5	
<i>Describe the effects of joining and removing objects from a group</i>		B/D	D	S				

<i>Subtract by 1's to 0</i>		B/D	S				
Understand situations that entail multiplication and division, such as equal groupings of objects and sharing equally.							
<i>B= Beginning, D= Developing, S= Secure</i>	PK	K	1	2	3	4	5
<i>Divide even groups in half</i>		B/D	S				
<i>Recognize when it is easier to replace addition with multiplication</i>			B/D	D	S		
<i>Understand multiplication as represented by a certain number of equal groups</i>			B/D	D	S		
<i>Solve equal grouping and equal sharing problems</i>			D	D	S		
<i>Construct multiplication and division fact families</i>			D	D	S		
<i>Solve number stories involving multiple of equal groups</i>			D	D	S		
Understand various meanings of multiplication and division; understand the effects of multiplying and dividing whole numbers							
<i>B= Beginning, D= Developing, S= Secure</i>	PK	K	1	2	3	4	5
<i>Use arrays to model multiplication problems</i>				B/D			
<i>Explore the meaning of multiplication as repeated addition and joining of equal groups</i>				B/D	D/S		
<i>Understand the operation of division as sharing equally and separating</i>				B/D	D/S		
<i>Understand and apply the properties of multiplication</i>					B/D	D	
<i>Solve problems involving interpretation of remainders</i>					B/D	D	
Identify and use relationships between operations, such as division as the inverse of multiplication, to solve problems.							
<i>B= Beginning, D= Developing, S= Secure</i>	PK	K	1	2	3	4	5
<i>Recognize the inverse relationship between division and multiplication</i>				B	D	S	

<i>Understand the inverse relationship between addition and subtraction</i>			B	D	S		
<i>Understand relationship between addition and multiplication</i>				B/D	S		
<i>Understand and use properties of operations, such as the distributivity of multiplication over addition.</i>							
<i>B= Beginning, D= Developing, S= Secure</i>	PK	K	1	2	3	4	5
<i>Understand how to use parenthesis in number models</i>				B	D	D	S
<i>Understand the role of 1 and 0 in division</i>					B/D	D/S	
<i>Understand the role of 1 and 0 in addition and multiplication</i>				B	D	S	
<i>Apply the associative property to find the product of three factors</i>					B/D	D	S
<i>Understand the commutative and associative properties for addition and multiplication</i>					B	D	S
<i>Understand the distributive property of addition and multiplication</i>							B
Numbers and Operations 3: Compute fluently and make reasonable estimates.							
Develop and use strategies for whole number computations, with a focus on addition and subtraction; develop fluency with basic number combinations for addition and subtraction.							
<i>B= Beginning, D= Developing, S= Secure</i>	PK	K	1	2	3	4	5
<i>Calculate the values of different types of coins</i>		B	D/S				
<i>Make change for amounts less than one dollar</i>			B	D/S			
<i>Exchange coins using equivalent terms; use equivalent coins to show money amounts in different ways</i>		B	D/S	S			
<i>Solve addition and subtraction number stories</i>			B	D			
<i>Add and subtract multiples of 10</i>			B/D	S			
<i>Find sums and differences of one and two digit numbers</i>			B/D	D			

<i>Know basic addition and subtraction facts automatically.</i>		B/D	D/S	S			
<i>Compute elapsed time for different activities to the hour and half hour</i>			B/D	D/S			
Use a variety of methods and tools to compute, including objects, mental computation, estimation, paper and pencil, and calculators.							
<i>B= Beginning, D= Developing, S= Secure</i>	PK	K	1	2	3	4	5
<i>Use a calculator to count forwards and backwards</i>		B/D	S				
<i>Use a calculator to compute money amounts</i>			B/D	S			
<i>Add three one digit numbers mentally</i>			B/D	S			
<i>Add three two digit numbers mentally</i>			B	D			
Develop fluency in adding, subtracting, multiplying and dividing whole numbers; develop fluency with basic number combinations for multiplication and division and use these combinations to mentally compute related problems.							
<i>B= Beginning, D= Developing, S= Secure</i>	PK	K	1	2	3	4	5
<i>Multiply numbers with 0 or 1 as a factor</i>				D/S			
<i>Solve one digit multiplication problems</i>				D	S		
<i>Multiply numbers with 2, 5, or 10 as a factor</i>				D	S		
<i>Compute multiplication facts through 6</i>				D	S		
<i>Solve simple division problems up to 6</i>				D	S		
<i>Solve multiplication problems with two digits and a single multiplier</i>				B/D	S		
<i>Construct multiplication and division fact families</i>				D	D	S	
<i>Compute multiplication facts 2 through 12</i>				B	D/S		
<i>Explore division facts 2 through 12</i>				B	D/S		
<i>Multiply 2, 3, and 4 digit numbers by one digit numbers with regrouping</i>					B/S	S	
<i>Multiply 3 and 4 digit whole numbers by 3 and 4 digit multipliers</i>						B/D	
<i>Find the missing factor in basic facts</i>				B/D	D/S		
<i>Use patterns of 0 to multiply tens, hundreds, and thousands</i>					B/D		
<i>Add and subtract 2, 3 and 4 digit numbers with and without regrouping</i>				B	D/S		
<i>Add or subtract number through hundred thousands and money amounts up to</i>					B	D	

<i>five digits</i>							
<i>Find the sum of three addends and locate a missing addend in addition facts</i>				D	S		
<i>Regroup when subtracting up to four digit numbers with zeros</i>					B/D		
<i>Add and subtract amounts of money up to \$100</i>				B	D		
<i>Estimate quotients and recognize division patterns</i>					B/D		
<i>Divide 2 and 3 digit divisors by 1-digit quotients</i>					B/D		
<i>Divide whole numbers by 2 and 3 digit numbers to 4 digit quotients, with and without remainders</i>						B	D
<i>Use mental math to find products of 10, 100 or 1000</i>				B	B/D	D	
<i>Divide whole numbers with two and three digit divisors</i>						B/D	
<i>Use patterns to divide whole numbers and decimals by tenths, hundredths and thousandths</i>							B
<i>Use the distributive property to multiply whole numbers up to 6-digits</i>							B/D
<i>Divide when there are zeros in the divisor/dividend</i>						B/D	
<i>Use divisibility rules for 2-10</i>						B/D	D
<i>Use the order of operations to simplify and compute mathematical expressions</i>						B	D
Develop and use strategies to estimate the results of whole-number computations and to judge the reasonableness of such results.							
<i>B= Beginning, D= Developing, S= Secure</i>	PK	K	1	2	3	4	5
<i>Use rounding skills to estimate sums and differences</i>				B	D		
<i>Use rounding skills to estimate quotients</i>					B/D		
<i>Decide when to seek an exact answer or an estimate</i>					B/D	D/S	
<i>Use estimation to determine if answers are reasonable</i>				B	D		
Develop and use strategies to estimate computations involving fractions and decimals in situations relevant to students' experience.							
<i>Multiply money amounts up to 5 cents by single digit multipliers</i>					B/D		

<i>Divide money amounts to 50 cents by 2 through 5</i>						B/D		
<i>Find the unit cost of an item and a fractional part of a money amount</i>						B/D		
<i>Multiply money amounts to \$9.99 by 1 digit</i>						B		
<i>Use mental math strategies to divide a decimal by 10, 100, or 1000</i>							B/D	D
<i>Use estimation to round when finding sums and products of decimals</i>							B/D	D
<i>Estimate fractions as closer to 0, ½, or 1 using compatible numbers</i>						B	D	
<i>Interpret the effects of interest rates on a credit card/mortgage</i>								B
<i>Multiply decimals to thousandths and money amounts by decimals and whole numbers</i>								B
<i>Divide decimals to millionths and money amounts by whole numbers</i>								B
<i>Use percent to find the amount of discount, sale price, sales tax, and total cost of an item</i>								B
<i>Calculate simple interest</i>								B
Use visual models, benchmarks, and equivalent forms to add and subtract commonly used fractions and decimals.								
<i>B= Beginning, D= Developing, S= Secure</i>	PK	K	1	2	3	4	5	
<i>Add and subtract fractions with like and unlike denominators</i>					B/D	D	D	
<i>Add and subtract decimals through hundredths</i>					B/D			
<i>Add and subtract whole numbers with fractions</i>					B/D			
<i>Add and subtract mixed numbers</i>						B/D	D	
<i>Add and subtract decimals to the thousandths place</i>					B	D		
<i>Multiply fractions with whole numbers</i>						B		
<i>Multiply two fractions</i>						B	D	
<i>Multiply mixed numbers</i>						B	D	
<i>Multiply a fraction with a mixed number</i>						B		
<i>Divide whole numbers by fractions and fractions by fractions</i>						B	D	
<i>Divide decimals, mixed numbers and whole numbers by 10, 100 or 1000</i>					B	D	D	

<i>Solve problems involving proportions and ratios</i>							B	D
<i>Find the reciprocal of a number</i>							B	
<i>Estimate quotients with fraction and mixed number divisors</i>								B/D
<i>Apply the order of operations to computations involving fractions</i>								B
Select appropriate methods and tools for computing with whole numbers from among mental computation, estimation, calculators, and paper and pencil according to the context and nature of the computation and use the selected method or tool.								
<i>B= Beginning, D= Developing, S= Secure</i>	PK	K	1	2	3	4	5	
<i>Use addition properties to compute mentally</i>				B	D	S		
<i>Use mental math techniques to find the product of numbers</i>				B	D	D		S
<i>Identify criteria for choosing an operation</i>					B	D		S
Geometry 1: Analyze characteristics and properties of two and three-dimensional geometric shapes and develop mathematical arguments about geometric relationships.								
Recognize, name, build, draw, compare and sort two and three-dimensional shapes.								
<i>B= Beginning, D= Developing, S= Secure</i>	PK	K	1	2	3	4	5	
<i>Recognize basic geometric shapes</i>	B	D/S						
<i>Identify and describe squares, rectangles, triangles, and circles</i>	B	D/S						
<i>Draw shapes with a template</i>		B	D	S				
<i>Identify 2-D and 3-D shapes as well as polygons and recognize characteristics</i>		B	D	S				
<i>Draw line segments</i>				S				
<i>Identify parallel and non-parallel line segments</i>				B/D				
Describe attributes and parts of two and three-dimensional shapes.								
<i>B= Beginning, D= Developing, S= Secure</i>	PK	K	1	2	3	4	5	
<i>Compare and sort basic geometric shapes by common attributes</i>	B	D/S						

<i>Identify common attributes such as faces, sides, edges, vertices and angles</i>			B/D				
Investigate and predict the results of putting together and taking apart two and three-dimensional shapes.							
<i>B= Beginning, D= Developing, S= Secure</i>	PK	K	1	2	3	4	5
<i>Use pattern blocks to copy and create new 2-D and 3-D shapes</i>		B	D	D			
<i>Use manipulatives to create new shapes from individual shapes</i>			B	D			
Identify, compare, and analyze attributes of two and three-dimensional shapes and develop vocabulary to describe the attributes; Classify two and three-dimensional shapes according to their properties and develop definitions of classes of shapes such as triangles and pyramids.							
<i>B= Beginning, D= Developing, S= Secure</i>	PK	K	1	2	3	4	5
<i>Identify three different types of angles: right, obtuse and acute</i>					B/D	D	D/S
<i>Identify and draw lines, line segments, rays</i>					B/D	D	S
<i>Identify parallel, perpendicular and intersecting lines</i>					B/D	D	S
<i>Identify different types of quadrilaterals</i>				B	D	D	S
<i>Identify regular and irregular polygons</i>					B	D	S
<i>Identify the parts of a circle including diameter, radius, circumference, chords</i>						D	D/S
<i>Identify and classify two and three dimensional shapes</i>				D	D	D/S	
<i>Recognize the relationship between two and three dimensional shapes</i>				D	D	D	S
<i>Draw and identify triangles by their sides and angles</i>					B/D	D	S
<i>Understand that the sum of a triangle's angles is 180 degrees</i>						B/D	D/S
<i>Investigate, describe, and reason about the results of subdividing, combining, and transforming shapes</i>					B	D	D
<i>Make and test conjectures about geometric properties and relationships and develop logical arguments to justify conclusions</i>					B	D	D
Explore congruence and similarity.							
<i>B= Beginning, D= Developing, S= Secure</i>	PK	K	1	2	3	4	5

<i>Recognize, identify, and draw congruent and similar figures</i>					B/D	D	D
<i>Construct congruent line segments with a compass and straightedge</i>						B/D	D
<i>Construct congruent angles and angle bisectors</i>							B
Geometry 2: Specify locations and describe spatial relationships using coordinate geometry and other representational systems.							
Describe, name, and interpret relative positions in space and apply ideas about relative position; describe, name and interpret direction and distance in navigating space and apply ideas about direction and distance; find and name locations with simple relationships such as “near to” and in coordinate systems such as maps.							
<i>B= Beginning, D= Developing, S= Secure</i>	PK	K	1	2	3	4	5
<i>Locate objects using position and direction words such as “next to”</i>	B	D					
<i>Identify above, below, left, right, middle, and other words related to relative positions in space.</i>		B/D					
<i>Apply knowledge of directionality to determine North, South, East and West</i>			B/D	D/S			
<i>Locate different cities and countries on maps</i>		B	D	D	D		
Make and use coordinate systems to specify locations and to describe paths; describe location and movement using common language and geometric vocabulary.							
<i>B= Beginning, D= Developing, S= Secure</i>	PK	K	1	2	3	4	5
<i>Provide the coordinates of a point on a graph</i>					D	D	S
<i>Locate a point on a graph when given the coordinates</i>					D	D	S
<i>Use proper notation when citing coordinates on a graph</i>					D	D	S
<i>Graph ordered pairs on a 4-quadrant coordinate plane</i>						B	D
<i>Use a rule/equation to develop a function table to enable graphing a function on a 4-quadrant plane</i>						B	D
<i>Solve linear functions</i>							B
<i>Find the distance between points along horizontal and vertical lines of a coordinate system</i>							B
Geometry 3: Apply transformations and use symmetry to analyze mathematics situations.							

Recognize and apply slides, flips, and turns.							
<i>B= Beginning, D= Developing, S= Secure</i>	PK	K	1	2	3	4	5
<i>Create tessellations using different shapes</i>				B/D			
<i>Use flips, turns, and slide to manipulate and analyze shapes</i>				B/D			
Recognize and create shapes that have symmetry.							
<i>B= Beginning, D= Developing, S= Secure</i>	PK	K	1	2	3	4	5
<i>Identify the line of symmetry using pattern blocks</i>		B	D				
<i>Create symmetrical designs</i>		B	D				
<i>Locate line of symmetry in more complex shapes and reproduce mirrored images</i>			B	D			
Predict and describe the results of sliding, flipping, and turning two-dimensional shapes; Describe a motion or a series of motions that will show that two shapes are congruent.							
<i>B= Beginning, D= Developing, S= Secure</i>	PK	K	1	2	3	4	5
<i>Identify transformations – slides, flips, and turns</i>					B	D	D
<i>Explore translations, reflections and rotations</i>						B	D
<i>Graph reflections, translations, and rotations on a coordinate plane</i>							B
Identify and describe line and rotational symmetry in two and three-dimensional shapes and designs.							
<i>B= Beginning, D= Developing, S= Secure</i>	PK	K	1	2	3	4	5
<i>Identify the line of symmetry in different shapes</i>					B	D	S
<i>Draw lines of symmetry</i>						B/D	S
<i>Draw the matching half of a symmetrical figure</i>					B	D	S
<i>Identify reflection, rotational, and point symmetry</i>							B/D
Geometry 4: Use visualization, spatial reasoning, and geometric modeling to solve problems.							
Relate ideas in geometry to ideas in number and measurement.							
<i>B= Beginning, D= Developing, S= Secure</i>	PK	K	1	2	3	4	5

<i>Measure the distance around a shape (circles, squares, and triangles)</i>		B	D	D/S			
Recognize geometric shapes and structures in the environment and specify their location.							
<i>B= Beginning, D= Developing, S= Secure</i>	PK	K	1	2	3	4	5
<i>Recognize different geometrical shapes in the classroom environment</i>		B					
<i>Relate shapes to everyday objects such as stop signs, windows, diamonds, kites, etc.</i>		B	D	S			
<i>Create mental images of geometric shapes using spatial memory/visualization</i>			B	D			
<i>Recognize and represent shapes from different perspectives</i>			B	D			
Build and draw geometric objects.							
<i>B= Beginning, D= Developing, S= Secure</i>	PK	K	1	2	3	4	5
<i>Identify a circle, its parts, and construct a circle with a compass</i>						B	D
<i>Draw different polygons</i>				B	D	D	D
<i>Create and describe mental images of objects, patterns, and paths.</i>				B	D	D	D
<i>Identify and build a three-dimensional object from two-dimensional representations of that object.</i>					B	D	S
<i>Identify and build a two-dimensional representation of a three-dimensional object.</i>					B	D	S
Measurement 1: Understand measurable attributes of objects and the units, systems, and processes of measurement.							
Recognize the attributes of length, volume, weight, area and time.							
<i>B= Beginning, D= Developing, S= Secure</i>	PK	K	1	2	3	4	5
<i>Explore the purpose and use of clocks and calendars</i>	B	D	S				
<i>Explore length and height measurements</i>		B	D	S			
<i>Explore volume with different size containers</i>		B	D	D			
<i>Measure perimeter and areas concretely</i>				B/D			
Compare and order objects according to these attributes.							
<i>B= Beginning, D= Developing, S= Secure</i>	PK	K	1	2	3	4	5

<i>Compare and order objects by size, height, weight, and length</i>	B	D	S				
<i>Sequence events in the order of occurrence using time concepts</i>	B	D	S				
<i>Identify heavier and lighter objects using a balance</i>		B	D	S			
Understand how to measure using nonstandard and standard units; select an appropriate unit and tool for the attribute being measured							
<i>B= Beginning, D= Developing, S= Secure</i>	PK	K	1	2	3	4	5
<i>Measure objects using non-standard objects</i>	B	D	D	S			
<i>Compare length using vocabulary such as shorter and longer</i>		B	D/S				
<i>Discuss the need for standard measurements</i>		B	D	S			
<i>Use standard units for measuring length</i>			B	D			
<i>Estimate and measure lengths in non-standard units, inches and centimeters</i>			B	D			
<i>Measure to the nearest centimeter and inch</i>			B/D	S			
<i>Use a ruler and other instruments to measure length and width in inches</i>		B	D	D			
<i>Use a ruler to measure to the nearest ½ inch or ½ cm</i>				B/D			
<i>Use appropriate units for measurement and recognize sensible measurements</i>			B	D			
Understand such attributes as length, area, weight, volume, and size of angle and select the appropriate type of unit for measuring each attribute.							
<i>B= Beginning, D= Developing, S= Secure</i>	PK	K	1	2	3	4	5
<i>Find the perimeter of any polygon</i>					B/D	D	S
<i>Estimate and measure length in inches, feet, yards and miles</i>				B	D	D	S
<i>Explore and compare customary units of capacity and weight</i>				B	D	D	D
<i>Find the volume of different rectangular prisms</i>						B	D
<i>Name angles and identify their parts; use a protractor to measure and draw angles</i>					B	D	D/S
Understand the need for measuring with standard units and become familiar with standard units in the customary and metric systems.							
<i>B= Beginning, D= Developing, S= Secure</i>	PK	K	1	2	3	4	5
<i>Measure, compare and choose appropriate metric units of length, capacity and</i>					D	D	S

<i>mass</i>								
<i>Identify the mile as a customary unit for measuring distance and use a map to find and estimate distances</i>					B	D	D/S	
<i>Measure to the nearest inch, half inc, quarter inch, and eighth inch</i>					B	D	D/S	
<i>Measure to the nearest meter, millimeter, centimeter, decimeter, liter, and gram</i>					B	D	D/S	
<i>Explore what happens to measurements of a two dimensional shapes such as its perimeter and area when the shape is changed in some way</i>						B	D	
Carry out simple unit conversions such as from centimeters to meters, within a system of measurement; Understand that measurements are approximations and understand how differences in units affect precision								
<i>B= Beginning, D= Developing, S= Secure</i>	PK	K	1	2	3	4	5	
<i>Identify equivalencies for inches, feet and yards</i>				B/D	D	D	S	
<i>Identify equivalencies for mm, cm, dm, and m</i>				B/D	D	D	S	
<i>Convert units of length, capacity and weight to smaller or larger units</i>					B	D	D	
<i>Compare metric units of length, capacity and mass</i>						B	D	
<i>Estimate, measure and choose appropriate units of length to the nearest yard, foot, inch, half inch, and quarter inch</i>					B	D	D	
<i>Rename units of time and find elapsed time</i>					B	D	D/S	
Measurement 2: Apply appropriate techniques, tools, and formulas to determine measurement.								
Measure with multiple copies of units of the same size, such as paper clips laid out end to end; use repetition of a single unit to measure something larger than the unit, for instance, measuring the length of a room with a single meter stick.								
<i>B= Beginning, D= Developing, S= Secure</i>	PK	K	1	2	3	4	5	
<i>Apply the measuring technique of marking off measures with a definite unit of length</i>		B	D	S				
<i>Develop common referents for measurement to make comparison and estimates</i>		B	D	D				

Use tools to measure.							
<i>B= Beginning, D= Developing, S= Secure</i>	PK	K	1	2	3	4	5
<i>Use a ruler, tape measure, and meter/yardstick correctly</i>		B	D	S			
Develop strategies for estimating the perimeters, areas, and volumes of irregular shapes.							
<i>B= Beginning, D= Developing, S= Secure</i>	PK	K	1	2	3	4	5
<i>Estimate and measure to find perimeter</i>				B	D	D	S
<i>When given the perimeter, draw a polygon</i>					B	D	D
<i>Use centimeter squares to find the area of a given figure</i>					B	D	S
<i>Find the area of irregular shapes, right triangles, and parallelograms</i>						B	D
<i>Use a formula to find the perimeter of simple and complex polygons</i>						B	D
<i>Find the approximate circumference of a circle using Pi</i>						B	D
Select and apply appropriate standard units and tools to measure length, area, volume, weight, time, temperature, and the size of angles.							
<i>B= Beginning, D= Developing, S= Secure</i>	PK	K	1	2	3	4	5
<i>Choose an appropriate tool for measuring length, capacity, weight or mass</i>					D	S	
<i>Explore temperature using degrees Fahrenheit and Celsius</i>			B	D	D	S	
<i>Tell time to the hour, half hour, quarter hour, and minute</i>				B	D	S	
<i>Find elapsed time between two given times</i>				B	D	S	
<i>Relate customary and metric units</i>				D	D	D	S
<i>Select and use benchmarks to estimate measurements</i>				B	D	D	S
Develop strategies to determine the surface areas and volumes of rectangular solids.							
<i>B= Beginning, D= Developing, S= Secure</i>	PK	K	1	2	3	4	5

<i>Use cubes to find the volume of a solid figure</i>						B	D	D
<i>Find the surface area of a solid figure</i>							B	D
<i>Find the volume of a rectangular prism using a formula</i>							B	D
<i>Estimate the volume of a container needed to hold different objects</i>						B	D	D
<i>Find the surface area of a rectangular prism, cube, cylinder, pyramid or prism using a formula</i>								B
<i>Find the volume of a cube, rectangle, triangular prism, cylinder, and square pyramid</i>								B
Develop, understand, and use formulas to find the area of rectangles and related triangles and parallelograms.								
<i>B= Beginning, D= Developing, S= Secure</i>	PK	K	1	2	3	4	5	
<i>Count square units and use a grid to estimate and find the area of a plane figure</i>							B/D	D
<i>Use a formula to find the area of rectangles and squares</i>							B	D
<i>Find the area of a parallelogram</i>							B	D
<i>Solve problems involving irregular or compound figures by using perimeter and area formulas</i>								B
Data, Analysis and Probability 1: Formulate questions that can be addressed with data and collect, organize, and display relevant data to answer them.								
Pose questions and gather data about themselves and their surroundings								
<i>B= Beginning, D= Developing, S= Secure</i>	PK	K	1	2	3	4	5	
<i>Collect data about people, objects and events</i>	B	D	S					
Sort and classify objects according to their attributes and organize data about the objects; represent data using concrete objects, pictures, and graphs								

<i>B= Beginning, D= Developing, S= Secure</i>	PK	K	1	2	3	4	5
<i>Identify, collect, and describe data on a bar or pictograph</i>	B	D/S					
<i>Collect/gather data and record using tally marks and pictographs</i>		B	D/S				
<i>Sort information and create basic bar graphs, picture graphs and pictographs, surveys, real graphs and Venn diagrams using manipulatives</i>		B	D	D/S			
<i>Read different types of graphs to obtain information</i>		B/D	D				
Design investigations to address a question and consider how data collection methods affect the nature of the data set; collect data using observations, surveys, and experiments.							
<i>B= Beginning, D= Developing, S= Secure</i>	PK	K	1	2	3	4	5
<i>Conduct a survey to collect data and display on a tally chart</i>				B	D	D	S
<i>Organize data and use information to create different graphs</i>				B	D	D	S
<i>Organize data using frequency tables</i>					B	D	S
<i>Interpret data</i>					B	D	D/S
Represent data using tables and graphs such as line plots, bar graphs, and line graphs.							
<i>B= Beginning, D= Developing, S= Secure</i>	PK	K	1	2	3	4	5
<i>Read and interpret bar, picture, circle, and line graphs/plots to obtain specific information</i>			B	D	D	S	
<i>Create bar and picture graphs including key elements such as title, scale, key</i>				B	D	D	S
<i>Use graphs to show the results of probability experiments</i>						B	D
<i>Interpret various types of graphs and review the contexts for which each type is best suited</i>					B	D	D
<i>Create, read and interpret line plots, histograms, and circle graphs</i>						B	D
<i>Make and interpret box and whisker plots and stem and leaf plots</i>							B
<i>Interpret line graphs, double line graphs, and double bar graphs</i>							B

<i>Recognize the differences in representing categorical and numerical data</i>					B	D	D/S
Data and Probability 2: Select and use appropriate statistical methods to analyze data.							
Describe parts of the data and the set of data as a whole to determine what the data show.							
<i>B= Beginning, D= Developing, S= Secure</i>	PK	K	1	2	3	4	5
<i>Make a line plot of a set of data and find the mode and median of a set of data</i>			B	D			
<i>Determine the median, maximum, minimum, and range of a data set</i>				B/D			
Describe the shape and important features of a set of data and compare related data sets, with an emphasis on how the data are distributed; use measures of center, focusing on median, and understand what each does and does not indicate about the data set.							
<i>B= Beginning, D= Developing, S= Secure</i>	PK	K	1	2	3	4	5
<i>Find the median, mean, mode, and range of a set of data</i>					B	D	S
<i>Compare different representations of the same data and evaluate how well each representation shows important aspects of the data</i>					B	D	D
<i>Analyze graphs and statistics to determine if they are misleading</i>							B
Data and Probability 3: Develop and evaluate inferences and predictions that are based on data.							
Discuss events related to students' experiences as likely or unlikely.							
<i>B= Beginning, D= Developing, S= Secure</i>	PK	K	1	2	3	4	5
<i>Use number sense to make predictions about specific events</i>			B/D				
<i>Use vocabulary (less than, more than, equal to, etc.) to estimate and predict outcomes</i>				B/D			
Propose and justify conclusions and predictions that are based on data and design studies to further investigate the conclusions or predictions.							

<i>B= Beginning, D= Developing, S= Secure</i>	PK	K	1	2	3	4	5
<i>Interpret the results of surveys</i>						B	D
<i>Understand the use of sampling</i>							B
<i>Understand the effects of bias in a survey</i>							B
Data and Probability 4: Understand and apply basic concepts of probability.							
Describe events as likely or unlikely and discuss the degree of likelihood using such words as certain, equally likely, and impossible; predict the probability of outcomes of simple experiments and test the predictions							
<i>B= Beginning, D= Developing, S= Secure</i>	PK	K	1	2	3	4	5
<i>Choose fair and unfair games based on probability</i>					B	D	D/S
<i>Analyze data to make a prediction regarding an outcome</i>					B	D	D
<i>Find the outcomes of chance events</i>					B	D	D
<i>Find the probability of a simple event or combined event</i>					B	D	D
<i>Compare experimental and theoretical probability</i>						B	D
<i>Find the probability of more than one event and use a tree diagram to identify possible outcomes</i>						B/D	D
<i>Find the probability of independent and dependent events using tree diagrams</i>						B	D
<i>Understand that the measure of the likelihood of an event can be represented by a number from 0-1</i>						B	D
Algebra 1: Understand patterns, relations, and functions.							
Sort, classify, and order objects by size, number, and other properties.							
<i>B= Beginning, D= Developing, S= Secure</i>	PK	K	1	2	3	4	5
<i>Identify and describe similarities and differences among different objects, animals, etc.</i>	B						

<i>Sort and classify concrete objects by an attribute (color, size, shape, etc.)</i>	B	D	D/S				
<i>Sort and classify pennies, nickels, dimes and quarters</i>		B	D	S			
Recognize, describe, and extend patterns such as sequences of sounds and shapes or simple numeric patterns and translate from one representation to another; analyze how both repeating and growing patterns are generated							
<i>B= Beginning, D= Developing, S= Secure</i>	PK	K	1	2	3	4	5
<i>Identify, copy, extend and create a pattern</i>	B						
<i>Pattern by color, size, shape, position, and other like attributes</i>		B	D				
<i>Identify a basic function rule and generate numbers that follow the rule</i>		B	D				
<i>Identify and use patterns on a number grid (100's chart)</i>		B	D/S				
<i>Complete number sequences; identify and use number patterns to solve problems</i>				B/D			
<i>Identify and continue growing and repeating patterns; generate, continue and copy patterns</i>		B	D	S			
Describe, extend and make generalizations about geometric and numeric patterns.							
<i>B= Beginning, D= Developing, S= Secure</i>	PK	K	1	2	3	4	5
<i>Identify patterns in sequences using addition, subtraction and multiplication</i>				B	D	D	D/S
Represent and analyze patterns and functions, using words, tables and graphs.							
<i>B= Beginning, D= Developing, S= Secure</i>	PK	K	1	2	3	4	5
<i>Use multiplication and division function tables to determine the next term in a linear pattern</i>					B	D	D
<i>Identify rules to complete number patterns</i>					B	D	D
Algebra 2: Represent and analyze mathematical situations and structures using algebraic symbols.							

Illustrate general principles and properties of operations, such as commutativity, using specific numbers.							
<i>B= Beginning, D= Developing, S= Secure</i>	PK	K	1	2	3	4	5
<i>Recognize that addition and multiplication are commutative; subtraction and division are not</i>			B	D			
Use concrete, pictorial, and verbal representations to develop an understanding of invented and conventional symbolic notations.							
<i>B= Beginning, D= Developing, S= Secure</i>	PK	K	1	2	3	4	5
<i>Recognize addition, subtraction and equality symbols</i>		B/D	S				
<i>Use P, N, D, and Q to represent given money amounts</i>			B/D	D/S			
Identify such properties as commutativity, associativity, and distributivity and use them to compute with whole numbers.							
<i>B= Beginning, D= Developing, S= Secure</i>	PK	K	1	2	3	4	5
<i>Apply the commutative property of multiplication</i>				B	D	S	
<i>Understand both commutative and associative properties of addition and multiplication</i>					B	D	S
<i>Understand the distributive property of addition and multiplication</i>							B
Represent the idea of a variable as an unknown quantity using a letter or a symbol; express mathematical relationships using equations							
<i>B= Beginning, D= Developing, S= Secure</i>	PK	K	1	2	3	4	5
<i>Solve equations given one or more unknowns</i>							B
<i>Evaluate and simplify algebraic expressions and combine like terms</i>							B
<i>Use a formula to solve problems and for missing dimensions</i>							B
<i>Translate word phrases into mathematical expressions, with and without variables</i>					B	D	D
<i>Determine the missing operation sign that completed a number sentence</i>				B	D	S	

<i>Use operation signs to make two expressions equal in value</i>						B	D	S
Algebra 3: Use mathematical models to represent and understand quantitative relationships.								
Model situations that involve addition and subtraction of whole numbers, using objects, pictures and symbols.								
<i>B= Beginning, D= Developing, S= Secure</i>	PK	K	1	2	3	4	5	
<i>Find missing numbers and/or the missing rule in identifying rule problems</i>			B	D				
<i>Use pictorial representations to write addition and subtraction problems</i>			B/D	D/S				
Model problem situations with objects and use representations such as graphs, tables, and equations to draw conclusions.								
<i>B= Beginning, D= Developing, S= Secure</i>	PK	K	1	2	3	4	5	
<i>Use a rule or equation to make a function table; graph the function on a 4-quadrant coordinate plane</i>						B	D	
<i>Translate words/phrases, graphs, and table into numerical or algebraic expressions</i>					B	D	D	
Algebra 4: Analyze change in various contexts.								
<i>B= Beginning, D= Developing, S= Secure</i>	PK	K	1	2	3	4	5	
<i>Describe qualitative change, such as student's growing taller</i>	B	D	D	S				
<i>Describe quantitative change, such as student's growing two inches in one year</i>		B	D	D/S				
Analyze change in various contexts								
<i>B= Beginning, D= Developing, S= Secure</i>	PK	K	1	2	3	4	5	
<i>Investigate how a change in one variable relates to a change in a second variable</i>								B
<i>Identify and describe situations with constant or varying rates of change and compare them</i>								B

***The Carey School Standards for Mathematics Education are aligned with the National Standards published by the National Council for Teachers of Mathematics (NCTM) in *Principles and Standards for School Mathematics (2000)*. More information regarding the National Standards can be found on nctm.org.**