Mathematics Vertical Alignment, *Prekindergarten – Grade 2*

	Prekindergarten-PK3/PK4	Kindergarten	Grade 1	Grade 2
Standards	**Texas Prekindergarten Guidelines**	**Texas Essential Knowledge and Skills (TEKS)**	**Texas Essential Knowledge and Skills (TEKS)**	**Texas Essential Knowledge and Skills (TEKS)**
Domain(s) / Content Area	**V. Mathematics**	**Mathematics**	**Mathematics**	**Mathematics**
Sub-Domains / Strands	A. Number Sense B. Joining and Separating C. Geometry and Spatial Sense D. Measurement E. Classification and Patterns	1. Mathematical Process Standards 2. Number and Operation 3. Algebraic Reasoning 4. Geometry and Measurement 5. Data Analysis 6. Personal Financial Literacy	1. Mathematical Process Standards 2. Number and Operation 3. Algebraic Reasoning 4. Geometry and Measurement 5. Data Analysis 6. Personal Financial Literacy	1. Mathematical Process Standards 2. Number and Operation 3. Algebraic Reasoning 4. Geometry and Measurement 5. Data Analysis 6. Personal Financial Literacy

*Refers to the Mathematics TEKS adopted in 2012

MATHEMATICAL PROCESS STANDARDS*

Kindergarten Grade 1 Grade 2
(1) Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:
(A) apply mathematics to problems arising in everyday life, society, and the workplace.
(B) use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution.
(C) select tools, including real objects, manipulatives, paper and pencil, and technology as appropriate, and techniques, including mental math, estimation, and number sense as appropriate, to solve problems.
(D) communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate.
(E) create and use representations to organize, record, and communicate mathematical ideas.
(F) analyze mathematical relationships to connect and communicate mathematical ideas.
(G) display, explain, and justify mathematical ideas and arguments using precise mathematical language in written or oral communication.

*No PK3/PK4 present in this vertical progression

Counting and Recognizing Whole Numbers

Prekindergarten-PK3 V.A. Number Sense	**Prekindergarten-PK4** V.A. Number Sense	**Kindergarten** K(2) Number and operations. The student applies mathematical process standards to understand how to represent and compare whole numbers, the relative position and magnitude of whole numbers, and relationships within the numeration system. The student is expected to:	**Grade 1** 1(2) Number and operations. The student applies mathematical process standards to represent and compare whole numbers, the relative position and magnitude of whole numbers, and relationships within the numeration system related to place value. The student is expected to:	**Grade 2** 2(2) Number and operations. The student applies mathematical process standards to understand how to represent and compare whole numbers, the relative position and magnitude of whole numbers, and relationships within the numeration system related to place value. The student is expected to:
PK3.V.A.1 Child rote counts from 1 to 10. **PK3.V.A.2** Child counts up to 5 objects with one-to-one correspondence.	**PK4.V.A.1** Child rote counts from 1 to 30. **PK4.V.A.2** Child counts up to 10 objects with one-to-one correspondence.	**K(2)(A)** count forward and backward to at least 20 with and without objects.	No standard present in the vertical progression	No standard present in the vertical progression
PK3.V.A.3 Child counts up to 5 items and demonstrates cardinality by communicating that the last number indicates how many items are in the set.	**PK4.V.A.3** Child counts up to 10 items and demonstrates cardinality by communicating that the last number indicates how many items are in the set.	**K(2)(C)** count a set of objects up to at least 20 and demonstrate that the last number said tells the number of objects in the set regardless of their arrangement or order.	No standard present in the vertical progression	No standard present in the vertical progression
PK3.V.A.4 Child instantly recognizes the quantity of up to 3 objects without counting (subitizes).	**PK4.V.A.4** Child instantly recognizes the quantity of up to 6 objects without counting (subitizes).	**K(2)(D)** recognize instantly the quantity of a small group of objects in organized and random arrangements.	**1(2)(A)** recognize instantly the quantity of structured arrangements.	No standard present in the vertical progression

Prekindergarten-PK3 V.A. Number Sense	**Prekindergarten-PK4** V.A. Number Sense	**Kindergarten** K(2) Number and operations. The student applies mathematical process standards to understand how to represent and compare whole numbers, the relative position and magnitude of whole numbers, and relationships within the numeration system. The student is expected to:	**Grade 1** 1(2) Number and operations. The student applies mathematical process standards to represent and compare whole numbers, the relative position and magnitude of whole numbers, and relationships within the numeration system related to place value. The student is expected to:	**Grade 2** 2(2) Number and operations. The student applies mathematical process standards to understand how to represent and compare whole numbers, the relative position and magnitude of whole numbers, and relationships within the numeration system related to place value. The student is expected to:
PK3.V.A.5 Child recognizes numerals 0-5. **PK3.V.A.6** Child represents quantities up to 5.	**PK4.V.A.5** Child recognizes numerals 0-10. **PK4.V.A.6** Child represents quantities up to 10.	**K(2)(B)** read, write, and represent whole numbers from 0 to at least 20 with and without objects or pictures.	No standard present in the vertical progression	No standard present in the vertical progression
PK3.V.A.8 Child compares sets of objects up to 5 using comparative language (e.g., more than, less than, same number of).	**PK4.V.A.8** Child compares sets of objects up to 10 using comparative language (e.g., greater/more than, less/fewer than, equal to/same number of).	**K(2)(E)** generate a set using concrete and pictorial models that represents a number that is more than, less than, and equal to a given number up to 20	No standard present in the vertical progression	No standard present in the vertical progression
PK3.V.A.8 Child compares sets of objects up to 5 using comparative language (e.g., more than, less than, same number of).	**PK4.V.A.8** Child compares sets of objects up to 10 using comparative language (e.g., greater/more than, less/fewer than, equal to/same number of).	**K(2)(F)** generate a number that is one more than or one less than another number up to at least 20.	**1(2)(D)** generate a number that is greater than or less than a given whole number up to 120.	**2(2)(C)** generate a number that is greater than or less than a given whole number up to 1,200.

COMPARING AND ORDERING NUMBERS

Prekindergarten-PK3 V.A. Number Sense	**Prekindergarten-PK4** V.A. Number Sense	**Kindergarten** K(2) Number and operations. The student applies mathematical process standards to understand how to represent and compare whole numbers, the relative position and magnitude of whole numbers, and relationships within the numeration system. The student is expected to:	**Grade 1** 1(2) Number and operations. The student applies mathematical process standards to represent and compare whole numbers, the relative position and magnitude of whole numbers, and relationships within the numeration system related to place value. The student is expected to:	**Grade 2** 2(2) Number and operations. The student applies mathematical process standards to understand how to represent and compare whole numbers, the relative position and magnitude of whole numbers, and relationships within the numeration system related to place value. The student is expected to:
PK3.V.A.8 Child compares sets of objects up to 5 using comparative language (e.g., more than, less than, same number of).	**PK4.V.A.8** Child compares sets of objects up to 10 using comparative language (e.g., greater/more than, less/fewer than, equal to/same number of).	**K(2)(G)** compare sets of objects up to at least 20 in each set using comparative language. **K(2)(H)** use comparative language to describe two numbers up to 20 presented as written numerals.	**1(2)(E)** use place value to compare whole numbers up to 120 using comparative language.	**2(2)(D)** use place value to compare and order whole numbers up to 1,200 using comparative language, numbers, and symbols (>, <, or =).
No standard present in the vertical progression	No standard present in the vertical progression	No standard present in the vertical progression	**1(2)(F)** order whole numbers up to 120 using place value and open number lines. **1(2)(G)** represent the comparison of two numbers to 100 using the symbols >, <, or =.	**2(2)(D)** use place value to compare and order whole numbers up to 1,200 using comparative language, numbers, and symbols (>, <, or =).

REPRESENTING AND RELATING NUMBERS USING NUMBER LINES

Prekindergarten-PK3 N/A	**Prekindergarten-PK4** N/A	**Kindergarten** N/A	**Grade 1** 1(2) Number and operations. The student applies mathematical process standards to represent and compare whole numbers, the relative position and magnitude of whole numbers, and relationships within the numeration system related to place value. The student is expected to:	**Grade 2** 2(2) Number and operations. The student applies mathematical process standards to understand how to represent and compare whole numbers, the relative position and magnitude of whole numbers, and relationships within the numeration system related to place value. The student is expected to:
No standard present in the vertical progression	No standard present in the vertical progression	No standard present in the vertical progression	**1(2)(F)** order whole numbers up to 120 using place value and open number lines.	**2(2)(E)** locate the position of a given whole number on an open number line.
No standard present in the vertical progression	No standard present in the vertical progression	No standard present in the vertical progression	No standard present in the vertical progression	**2(2)(F)** name the whole number that corresponds to a specific point on a number line.

COMPOSING AND DECOMPOSING NUMBERS: PLACE VALUE

Prekindergarten-PK3 V.A. Number Sense	**Prekindergarten-PK4** V.A. Number Sense	**Kindergarten** K(2) Number and operations. The student applies mathematical process standards to understand how to represent and compare whole numbers, the relative position and magnitude of whole numbers, and relationships within the numeration system. The student is expected to:	**Grade 1** 1(2) Number and operations. The student applies mathematical process standards to represent and compare whole numbers, the relative position and magnitude of whole numbers, and relationships within the numeration system related to place value. The student is expected to:	**Grade 2** 2(2) Number and operations. The student applies mathematical process standards to understand how to represent and compare whole numbers, the relative position and magnitude of whole numbers, and relationships within the numeration system related to place value. The student is expected to:
PK3.V.A.7 *There is not enough research to support the inclusion of a PK3 outcome*	**PK4.V.A.7** Child begins to understand that numbers 0-10 can be composed and decomposed in various ways to represent a quantity.	**K(2)(I)** compose and decompose numbers up to 10 with objects and pictures.	**1(2)(B)** use concrete and pictorial models to compose and decompose numbers up to 120 in more than one way as so many hundreds, so many tens, and so many ones.	**2(2)(A)** use concrete and pictorial models to compose and decompose numbers up to 1,200 in more than one way as a sum of so many thousands, hundreds, tens, and ones.
No standard present in the vertical progression	No standard present in the vertical progression	No standard present in the vertical progression	**1(2)(C)** use objects, pictures, and expanded and standard forms to represent numbers up to 120.	**2(2)(B)** use standard, word, and expanded forms to represent numbers up to 1,200.

COMPOSING AND DECOMPOSING NUMBERS: PLACE VALUE

Prekindergarten-PK3 N/A	**Prekindergarten-PK4** N/A	**Kindergarten** N/A	**Grade 1** N/A	**Grade 2** 2(3) Number and operations. The student applies mathematical process standards to recognize and represent fractional units and communicates how they are used to name parts of a whole. The student is expected to:
No standard present in the vertical progression	No standard present in the vertical progression	No standard present in the vertical progression	No standard present in the vertical progression	**2(3)(A)** partition objects into equal parts and name the parts, including halves, fourths, and eighths, using words.
No standard present in the vertical progression	No standard present in the vertical progression	No standard present in the vertical progression	No standard present in the vertical progression	**2(3)(B)** explain that the more fractional parts used to make a whole, the smaller the part; and the fewer the fractional parts, the larger the part.
No standard present in the vertical progression	No standard present in the vertical progression	No standard present in the vertical progression	No standard present in the vertical progression	**2(3)(C)** use concrete models to count fractional parts beyond one whole using words and recognize how many parts it takes to equal one whole.
No standard present in the vertical progression	No standard present in the vertical progression	No standard present in the vertical progression	No standard present in the vertical progression	**2(3)(D)** identify examples and non-examples of halves, fourths, and eighths.

ADDING AND SUBTRACTING WHOLE NUMBERS, DECIMALS, AND RATIONAL NUMBERS

Prekindergarten-PK3 V.B. Joining and Separating	**Prekindergarten-PK4** V.B. Joining and Separating	**Kindergarten** K(3) Number and operations. The student applies mathematical process standards to develop an understanding of addition and subtraction situations in order to solve problems. The student is expected to:	**Grade 1** 1(3) Number and operations. The student applies mathematical process standards to develop and use strategies for whole number addition and subtraction computations in order to solve problems. The student is expected to:	**Grade 2** 2(4) Number and operations. The student applies mathematical process standards to develop and use strategies and methods for whole number computations in order to solve addition and subtraction problems with efficiency and accuracy. The student is expected to:
PK3.V.B.1 Child uses objects to demonstrate that adding one or more objects to a set will increase the number of objects in the set. **PK3.V.B.2** Child uses objects to demonstrate that taking away one or more objects from a set will decrease the number of objects in the set.	**PK4.V.B.1** Child uses objects, pictorial models, and/or a verbal word problem to represent adding up to 5 objects. **PK4.V.B.2** Child uses objects, pictorial models, and/or a verbal word problem to represent subtracting objects from a set of 5.	**K(3)(A)** model the action of joining to represent addition and the action of separating to represent subtraction. **K(3)(B)** solve word problems using objects and drawings to find sums up to 10 and differences within 10.	**1(3)(B)** use objects and pictorial models to solve word problems involving joining, separating, and comparing sets within 20 and unknowns as any one of the terms in the problem such as 2 + 4 = [ ]; 3 + [ ] = 7; and 5 = [ ] - 3. **1(3)(C)** compose 10 with two or more addends with and without concrete objects.	No standard present in the vertical progression
PK3.V.B.1 Child uses objects to demonstrate that adding one or more objects to a set will increase the number of objects in the set. **PK3.V.B.2** Child uses objects to demonstrate that taking away one or more objects from a set will decrease the number of objects in the set.	**PK4.V.B.1** Child uses objects, pictorial models, and/or a verbal word problem to represent adding up to 5 objects. **PK4.V.B.2** Child uses objects, pictorial models, and/or a verbal word problem to represent subtracting objects from a set of 5.	**K(3)(C)** explain the strategies used to solve problems involving adding and subtracting within 10 using spoken words, concrete and pictorial models, and number sentences.	**1(3)(E)** explain strategies used to solve addition and subtraction problems up to 20 using spoken words, objects, pictorial models, and number sentences.	**2(4)(B)** add up to four two-digit numbers and subtract two-digit numbers using mental strategies and algorithms based on knowledge of place value and properties of operations.

Prekindergarten-PK3 V.B. Joining and Separating	**Prekindergarten-PK4** V.B. Joining and Separating	**Kindergarten** K(3) Number and operations. The student applies mathematical process standards to develop an understanding of addition and subtraction situations in order to solve problems. The student is expected to:	**Grade 1** 1(3) Number and operations. The student applies mathematical process standards to develop and use strategies for whole number addition and subtraction computations in order to solve problems. The student is expected to:	**Grade 2** 2(4) Number and operations. The student applies mathematical process standards to develop and use strategies and methods for whole number computations in order to solve addition and subtraction problems with efficiency and accuracy. The student is expected to:
No standard present in the vertical progression	No standard present in the vertical progression	No standard present in the vertical progression	**1(3)(A)** use concrete and pictorial models to determine the sum of a multiple of 10 and a one-digit number in problems up to 99.	**2(4)(C)** solve one-step and multistep word problems involving addition and subtraction within 1,000 using a variety of strategies based on place value, including algorithms.
No standard present in the vertical progression	No standard present in the vertical progression	No standard present in the vertical progression	**1(3)(D)** apply basic fact strategies to add and subtract within 20, including making 10 and decomposing a number leading to a 10.	**2(4)(A)** recall basic facts to add and subtract within 20 with automaticity.
No standard present in the vertical progression	No standard present in the vertical progression	No standard present in the vertical progression	**1(3)(F)** generate and solve problem situations when given a number sentence involving addition or subtraction of numbers within 20.	**2(4)(D)** generate and solve problem situations for a given mathematical number sentence involving addition and subtraction of whole numbers within 1,000.

REPRESENTING AND DETERMINING THE VALUE OF COINS AND BILLS

Prekindergarten-PK3 N/A	**Prekindergarten-PK4** N/A	**Kindergarten** K(4) Number and operations. The student applies mathematical process standards to identify coins in order to recognize the need for monetary transactions. The student is expected to:	**Grade 1** 1(4) Number and operations. The student applies mathematical process standards to identify coins, their values, and the relationships among them in order to recognize the need for monetary transactions. The student is expected to:	**Grade 2** 2(5) Number and operations. The student applies mathematical process standards to determine the value of coins in order to solve monetary transactions. The student is expected to:
No standard present in the vertical progression	No standard present in the vertical progression	**K(4)(A)** identify U.S. coins by name, including pennies, nickels, dimes, and quarters.	**1(4)(A)** identify U.S. coins, including pennies, nickels, dimes, and quarters, by value and describe the relationships among them.	No standard present in the vertical progression
No standard present in the vertical progression	No standard present in the vertical progression	No standard present in the vertical progression	**1(4)(B)** write a number with the cent symbol to describe the value of a coin.	**2(5)(B)** use the cent symbol, dollar sign, and the decimal point to name the value of a collection of coins.
No standard present in the vertical progression	No standard present in the vertical progression	No standard present in the vertical progression	**1(4)(C)** use relationships to count by twos, fives, and tens to determine the value of a collection of pennies, nickels, and/or dimes.	**2(5)(A)** determine the value of a collection of coins up to one dollar.

MULTIPYING/DIVIDING WHOLE NUMBERS, DECIMALS, FRACTIONS, AND RATIONAL NUMBERS

Prekindergarten-PK3 N/A	**Prekindergarten-PK4** N/A	**Kindergarten** N/A	**Grade 1** N/A	**Grade 2** 2(6) Number and operations. The student applies mathematical process standards to connect repeated addition and subtraction to multiplication and division situations that involve equal groupings and shares. The student is expected to:
No standard present in the vertical progression	No standard present in the vertical progression	No standard present in the vertical progression	No standard present in the vertical progression	**2(6)(A)** model, create, and describe contextual multiplication situations in which equivalent sets of concrete objects are joined.
No standard present in the vertical progression	No standard present in the vertical progression	No standard present in the vertical progression	No standard present in the vertical progression	**2(6)(B)** model, create, and describe contextual division situations in which a set of concrete objects is separated into equivalent sets.

PATTERN SKILLS

Prekindergarten-PK3 V.E. Classification and Patterns	**Prekindergarten-PK4** V.E. Classification and Patterns	**Kindergarten** N/A	**Grade 1** N/A	**Grade 2** N/A
PK3.V.E.3 Child recognizes and duplicates patterns.	**PK4.V.E.3** Child recognizes, duplicates, extends, and creates patterns.	No standard present in the vertical progression	No standard present in the vertical progression	No standard present in the vertical progression

CONNECTING COUNTING AND RECITING

Prekindergarten-PK3 V.A. Counting Skills	**Prekindergarten-PK4** V.A. Counting Skills	**Kindergarten** K(5) Algebraic reasoning. The student applies mathematical process standards to identify the pattern in the number word list. The student is expected to:	**Grade 1** 1(5) Algebraic reasoning. The student applies mathematical process standards to identify and apply number patterns within properties of numbers and operations in order to describe relationships. The student is expected to:	**Grade 2** N/A
PK3.V.A.1 Child rote counts from 1 to 10.	**PK4.V.A.1** Child rote counts from 1 to 30.	**K(5)(A)** recite numbers up to at least 100 by ones and tens beginning with any given number.	**1(5)(A)** recite numbers forward and backward from any given number between 1 and 120.	No standard present in the vertical progression

CONNECTING COUNTING AND DIVISIBILITY

Prekindergarten-PK3 N/A	**Prekindergarten-PK4** N/A	**Kindergarten** N/A	**Grade 1** 1(5) Algebraic reasoning. The student applies mathematical process standards to identify and apply number patterns within properties of numbers and operations in order to describe relationships. The student is expected to:	**Grade 2** 2(7) Algebraic reasoning. The student applies mathematical process standards to identify and apply number patterns within properties of numbers and operations in order to describe relationships. The student is expected to:
No standard present in the vertical progression	No standard present in the vertical progression	No standard present in the vertical progression	**1(5)(B)** skip count by twos, fives, and tens to determine the total number of objects up to 120 in a set.	**2(7)(A)** determine whether a number up to 40 is even or odd using pairings of objects to represent the number.

CONNECTING COUNTING AND PLACE VALUE

Prekindergarten-PK3 N/A	**Prekindergarten-PK4** N/A	**Kindergarten** N/A	**Grade 1** 1(5) Algebraic reasoning. The student applies mathematical process standards to identify and apply number patterns within properties of numbers and operations in order to describe relationships. The student is expected to:	**Grade 2** 2(7) Algebraic reasoning. The student applies mathematical process standards to identify and apply number patterns within properties of numbers and operations in order to describe relationships. The student is expected to:
No standard present in the vertical progression	No standard present in the vertical progression	No standard present in the vertical progression	**1(5)(C)** use relationships to determine the number that is 10 more and 10 less than a given number up to 120.	**2(7)(B)** use an understanding of place value to determine the number that is 10 or 100 more or less than a given number up to 1,200.

REPRESENTING PROBLEM SOLVING SITUATIONS WITH THE EQUAL SIGN

Prekindergarten-PK3 N/A	**Prekindergarten-PK4** N/A	**Kindergarten** N/A	**Grade 1** 1(5) Algebraic reasoning. The student applies mathematical process standards to identify and apply number patterns within properties of numbers and operations in order to describe relationships. The student is expected to:	**Grade 2** 2(7) Algebraic reasoning. The student applies mathematical process standards to identify and apply number patterns within properties of numbers and operations in order to describe relationships. The student is expected to:
No standard present in the vertical progression	No standard present in the vertical progression	No standard present in the vertical progression	**1(5)(D)** represent word problems involving addition and subtraction of whole numbers up to 20 using concrete and pictorial models and number sentences. **1(5)(E)** understand that the equal sign represents a relationship where expressions on each side of the equal sign represent the same value(s).	**2(7)(C)** represent and solve addition and subtraction word problems where unknowns may be any one of the terms in the problem.

REPRESENTING PROBLEM SITUATIONS WITH THE EQUATIONS AND INEQUALITIES

Prekindergarten-PK3 N/A	**Prekindergarten-PK4** N/A	**Kindergarten** N/A	**Grade 1** 1(5) Algebraic reasoning. The student applies mathematical process standards to identify and apply number patterns within properties of numbers and operations in order to describe relationships. The student is expected to:	**Grade 2** 2(7) Algebraic reasoning. The student applies mathematical process standards to identify and apply number patterns within properties of numbers and operations in order to describe relationships. The student is expected to:
No standard present in the vertical progression	No standard present in the vertical progression	No standard present in the vertical progression	**1(5)(F)** determine the unknown whole number in an addition or subtraction equation when the unknown may be any one of the three or four terms in the equation.	**2(7)(C)** represent and solve addition and subtraction word problems where unknowns may be any one of the terms in the problem.
No standard present in the vertical progression	No standard present in the vertical progression	No standard present in the vertical progression	**1(5)(G)** apply properties of operations to add and subtract two or three numbers.	No standard present in the vertical progression

DEFINING ATTRIBUTES OF ONE-DIMENSIONAL, TWO-DIMENSIONAL, AND THREE-DIMENSIONAL FIGURES

Prekindergarten-PK3 V.C. Geometry and Spatial Sense	**Prekindergarten-PK4** V.C. Geometry and Spatial Sense	**Kindergarten** K(6) Geometry and measurement. The student applies mathematical process standards to analyze attributes of two-dimensional shapes and three-dimensional solids to develop generalizations about their properties. The student is expected to:	**Grade 1** 1(6) Geometry and measurement. The student applies mathematical process standards to analyze attributes of two-dimensional shapes and three-dimensional solids to develop generalizations about their properties. The student is expected to:	**Grade 2** 2(8) Geometry and measurement. The student applies mathematical process standards to analyze attributes of two-dimensional shapes and three-dimensional solids to develop generalizations about their properties. The student is expected to:
PK3.V.C.1 Child names and describes common 2D shapes. **PK3.V.C.2** Child attempts to create shapes using materials and/or manipulatives.	**PK4.V.C.1** Child names and describes common 2D shapes and names at least 1 solid 3D shape. **PK4.V.C.2** Child creates shapes using materials and/ or manipulatives.	**K(6)(A)** identify two-dimensional shapes, including circles, triangles, rectangles, and squares as special rectangles.	**1(6)(C)** create two-dimensional figures, including circles, triangles, rectangles, and squares, as special rectangles, rhombuses, and hexagons.	**2(8)(A)** create two-dimensional shapes based on given attributes, including number of sides and vertices.
PK3.V.C.1 Child names and describes common 2D shapes.	**PK4.V.C.1** Child names and describes common 2D shapes and names at least 1 solid 3D shape.	**K(6)(D)** identify attributes of two-dimensional shapes using informal and formal geometric language interchangeably.	**1(6)(D)** identify two-dimensional shapes, including circles, triangles, rectangles, and squares, as special rectangles, rhombuses, and hexagons and describe their attributes using formal geometric language.	**2(8)(A)** create two-dimensional shapes based on given attributes, including number of sides and vertices.

Prekindergarten-PK3 V.C. Geometry and Spatial Sense	**Prekindergarten-PK4** V.C. Geometry and Spatial Sense	**Kindergarten** K(6) Geometry and measurement. The student applies mathematical process standards to analyze attributes of two-dimensional shapes and three-dimensional solids to develop generalizations about their properties. The student is expected to:	**Grade 1** 1(6) Geometry and measurement. The student applies mathematical process standards to analyze attributes of two-dimensional shapes and three-dimensional solids to develop generalizations about their properties. The student is expected to:	**Grade 2** 2(8) Geometry and measurement. The student applies mathematical process standards to analyze attributes of two-dimensional shapes and three-dimensional solids to develop generalizations about their properties. The student is expected to:
PK3.V.C.1 Child names and describes common 2D shapes.	**PK4.V.C.1** Child names and describes common 2D shapes and names at least 1 solid 3D shape.	**K(6)(B)** identify three-dimensional solids, including cylinders, cones, spheres, and cubes, in the real world. **K(6)(C)** identify two-dimensional components of three-dimensional objects.	**1(6)(E)** identify three-dimensional solids, including spheres, cones, cylinders, rectangular prisms (including cubes), and triangular prisms, and describe their attributes using formal geometric language. **1(6)(B)** distinguish between attributes that define a two-dimensional or three-dimensional figure and attributes that do not define the shape.	No standard present in the vertical progression

SPATIAL SENSE

Prekindergarten-PK3 V.C. Geometry and Spatial Sense	**Prekindergarten-PK4** V.C. Geometry and Spatial Sense	**Kindergarten** N/A	**Grade 1** N/A	**Grade 2** N/A
PK3.V.C.3 Child begins to use language to describe position of objects.	**PK4.V.C.3** Child demonstrates use of position words	No standard present in the vertical progression	No standard present in the vertical progression	No standard present in the vertical progression
PK3.V.C.4 Child recognizes common shapes, regardless of size.	**PK4.V.C.4** Child recognizes common shapes, regardless of orientation and size.	No standard present in the vertical progression	No standard present in the vertical progression	No standard present in the vertical progression

CLASSIFYING AND SORTING TWO-DIMENSIONAL AND THREE-DIMENSIONAL FIGURES

Prekindergarten-PK3 V.E. Classification and Patterns	**Prekindergarten-PK4** V.E. Classification and Patterns	**Kindergarten** K(6) Geometry and measurement. The student applies mathematical process standards to analyze attributes of two-dimensional shapes and three-dimensional solids to develop generalizations about their properties. The student is expected to:	**Grade 1** 1(6) Geometry and measurement. The student applies mathematical process standards to analyze attributes of two-dimensional shapes and three-dimensional solids to develop generalizations about their properties. The student is expected to:	**Grade 2** 2(8) Geometry and measurement. The student applies mathematical process standards to analyze attributes of two-dimensional shapes and three-dimensional solids to develop generalizations about their properties. The student is expected to:
PK3.V.E.1 Child sorts objects that are the same and different.	**PK4.V.E.1** Child sorts objects that are the same and different into groups and uses language to describe how the groups are similar and different.	**K(6)(E)** classify and sort a variety of regular and irregular two- and three-dimensional figures regardless of orientation or size.	**1(6)(A)** classify and sort regular and irregular two-dimensional shapes based on attributes using informal geometric language.	**2(8)(C)** classify and sort polygons with 12 or fewer sides according to attributes, including identifying the number of sides and number of vertices.
No standard present in the vertical progression	No standard present in the vertical progression	No standard present in the vertical progression	No standard present in the vertical progression	**2(8)(B)** classify and sort three-dimensional solids, including spheres, cones, cylinders, rectangular prisms (including cubes as special rectangular prisms), and triangular prisms, based on attributes using formal geometric language.

COMPOSING AND DECOMPOSING TWO-DIMENSIONAL AND THREE-DIMENSIONAL FIGURES

Prekindergarten-PK3 V.C. Geometry and Spatial Sense	**Prekindergarten-PK4** V.C. Geometry and Spatial Sense	**Kindergarten** K(6) Geometry and measurement. The student applies mathematical process standards to analyze attributes of two-dimensional shapes and three-dimensional solids to develop generalizations about their properties. The student is expected to:	**Grade 1** 1(6) Geometry and measurement. The student applies mathematical process standards to analyze attributes of two-dimensional shapes and three-dimensional solids to develop generalizations about their properties. The student is expected to:	**Grade 2** 2(8) Geometry and measurement. The student applies mathematical process standards to analyze attributes of two-dimensional shapes and three-dimensional solids to develop generalizations about their properties. The student is expected to:
PK3.V.C.2 Child attempts to create shapes using materials and/or manipulatives.	**PK4.V.C.2** Child creates shapes using materials and/or manipulatives.	**K(6)(F)** create two dimensional shapes using a variety of materials and drawings.	**1(6)(F)** compose two-dimensional shapes by joining two, three, or four figures to produce a target shape in more than one way if possible.	**2(8)(D)** compose two-dimensional shapes and three-dimensional solids with given properties or attributes.
No standard present in the vertical progression	No standard present in the vertical progression	No standard present in the vertical progression	No standard present in the vertical progression	**2(8)(E)** decompose two-dimensional shapes such as cutting out a square from a rectangle, dividing a shape in half, or partitioning a rectangle into identical triangles and identify the resulting geometric parts.

MEASURING ATTRIBUTES AND LENGTH OF TWO-DIMENSIONAL AND THREE-DIMENSIONAL OBJECTS

Prekindergarten-PK3 V.D. Measurement	**Prekindergarten-PK4** V.D. Measurement	**Kindergarten** K(7) Geometry and measurement. The student applies mathematical process standards to directly compare measurable attributes. The student is expected to:	**Grade 1** 1(7) Geometry and measurement. The student applies mathematical process standards to select and use units to describe length and time. The student is expected to:	**Grade 2** 2(9) Geometry and measurement. The student applies mathematical process standards to select and use units to describe length, area, and time. The student is expected to:
PK3.V.D.1 Child understands that lengths of objects can vary and be compared. **PK3.V.D.2** Child begins to recognize capacity based on how much space exists within an object. **PK3.V.D.3** Child understands that weights of objects can vary and be compared.	**PK4.V.D.1** Child recognizes and compares heights or lengths of people or objects. **PK4.V.D.2** Child recognizes and compares capacity based on how much space exists within an object. **PK4.V.D.3** Child recognizes and compares weights of objects.	**K(7)(A)** give an example of a measurable attribute of a given object, including length, capacity, and weight.	**1(7)(A)** use measuring tools to measure the length of objects to reinforce the continuous nature of linear measurement.	**2(9)(D)** determine the length of an object to the nearest marked unit using rulers, yardsticks, meter sticks, or measuring tapes.
PK3.V.D.1 Child understands that lengths of objects can vary and be compared. **PK3.V.D.2** Child begins to recognize capacity based on how much space exists within an object. **PK3.V.D.3** Child understands that weights of objects can vary and be compared.	**PK4.V.D.1** Child recognizes and compares heights or lengths of people or objects. **PK4.V.D.2** Child recognizes and compares capacity based on how much space exists within an object. **PK4.V.D.3** Child recognizes and compares weights of objects.	**K(7)(B)** compare two objects with a common measurable attribute to see which object has more of/less of the attribute and describe the difference.	No standard present in the vertical progression	No standard present in the vertical progression

Prekindergarten-PK3 V.D. Measurement	**Prekindergarten-PK4** V.D. Measurement	**Kindergarten** K(7) Geometry and measurement. The student applies mathematical process standards to directly compare measurable attributes. The student is expected to:	**Grade 1** 1(7) Geometry and measurement. The student applies mathematical process standards to select and use units to describe length and time. The student is expected to:	**Grade 2** 2(9) Geometry and measurement. The student applies mathematical process standards to select and use units to describe length, area, and time. The student is expected to:
No standard present in the vertical progression	No standard present in the vertical progression	No standard present in the vertical progression	**1(7)(B)** illustrate that the length of an object is the number of same-size units of length that, when laid end-to-end with no gaps or overlaps, reach from one end of the object to the other. **1(7)(D)** describe a length to the nearest whole unit using a number and a unit.	**2(9)(A)** find the length of objects using concrete models for standard units of length.
No standard present in the vertical progression	No standard present in the vertical progression	No standard present in the vertical progression	**1(7)(C)** measure the same object/distance with units of two different lengths and describe how and why the measurements differ.	**2(9)(B)** describe the inverse relationship between the size of the unit and the number of units needed to equal the length of an object.
No standard present in the vertical progression	No standard present in the vertical progression	No standard present in the vertical progression	No standard present in the vertical progression	**2(9)(E)** determine a solution to a problem involving length, including estimating lengths.

MEASURING TIME

Prekindergarten-PK3 V.D. Measurement	**Prekindergarten-PK4** V.D. Measurement	**Kindergarten** N/A	**Grade 1** 1(7) Geometry and measurement. The student applies mathematical process standards to select and use units to describe length and time. The student is expected to:	**Grade 2** 2(9) Geometry and measurement. The student applies mathematical process standards to select and use units to describe length, area, and time. The student is expected to:
PK3.V.D.4 Child shows awareness of the passage of time within a day.	**PK4.V.D.4** Child uses language to describe concepts associated with the passing of time within a day.	No standard present in the vertical progression	**1(7)(E)** tell time to the hour and half hour using analog and digital clocks.	**2(9)(G)** read and write time to the nearest one-minute increment using analog and digital clocks and distinguish between a.m. and p.m.

MEASURING DISTANCE ON A NUMBER LINE

Prekindergarten-PK3 N/A	**Prekindergarten-PK4** N/A	**Kindergarten** N/A	**Grade 1** N/A	**Grade 2** 2(9) Geometry and measurement. The student applies mathematical process standards to select and use units to describe length, area, and time. The student is expected to:
No standard present in the vertical progression	No standard present in the vertical progression	No standard present in the vertical progression	No standard present in the vertical progression	**2(9)(C)** represent whole numbers as distances from any given location on a number line.

MEASURING AREA AND VOLUME

Prekindergarten-PK3 V.D. Measurement	**Prekindergarten-PK4** V.D. Measurement	**Kindergarten** N/A	**Grade 1** 1(6) Geometry and measurement. The student applies mathematical process standards to analyze attributes of two-dimensional shapes and three-dimensional solids to develop generalizations about their properties. The student is expected to:	**Grade 2** 2(9) Geometry and measurement. The student applies mathematical process standards to select and use units to describe length, area, and time. The student is expected to:
PK3.V.D.2 Child begins to recognize capacity based on how much space exists within an object.	**PK4.V.D.2** Child recognizes and compares capacity based on how much space exists within an object.	No standard present in the vertical progression	No standard present in the vertical progression	No standard present in the vertical progression
No standard present in the vertical progression	No standard present in the vertical progression	No standard present in the vertical progression	**1(6)(G)** partition two-dimensional figures into two and four fair shares or equal parts and describe the parts using words.	No standard present in the vertical progression
No standard present in the vertical progression	No standard present in the vertical progression	No standard present in the vertical progression	**1(6)(H)** identify examples and non-examples of halves and fourths.	No standard present in the vertical progression
No standard present in the vertical progression	No standard present in the vertical progression	No standard present in the vertical progression	No standard present in the vertical progression	**2(9)(F)** use concrete models of square units to find the area of a rectangle by covering it with no gaps or overlaps, counting to find the total number of square units, and describing the measurement using a number and the unit.

REPRESENTING DATA

Prekindergarten-PK3 V.E. Classification and Patterns	**Prekindergarten-PK4** V.E. Classification and Patterns	**Kindergarten** K(8) Data analysis. The student applies mathematical process standards to collect and organize data to make it useful for interpreting information. The student is expected to:	**Grade 1** 1(8) Data analysis. The student applies mathematical process standards to organize data to make it useful for interpreting information and solving problems. The student is expected to:	**Grade 2** 2(10) Data analysis. The student applies mathematical process standards to organize data to make it useful for interpreting information and solving problems. The student is expected to:
PK3.V.E.1 Child sorts objects that are the same and different. **PK3.V.E.2** Child participates in group activities of collecting data and organizing it into graphic representations.	**PK4.V.E.1** Child sorts objects that are the same and different into groups and uses language to describe how the groups are similar and different. **PK4.V.E.2** Child collects data and organizes it in a graphic representation.	**K(8)(A)** collect, sort, and organize data into two or three categories.	**1(8)(A)** collect, sort, and organize data in up to three categories using models/representations such as tally marks or T-charts.	No standard present in the vertical progression
No standard present in the vertical progression	No standard present in the vertical progression	No standard present in the vertical progression	No standard present in the vertical progression	**2(10)(A)** explain that the length of a bar in a bar graph or the number of pictures in a pictograph represents the number of data points for a given category.
PK3.V.E.2 Child participates in group activities of collecting data and organizing it into graphic representations.	**PK4.V.E.2** Child collects data and organizes it in a graphic representation.	**K(8)(B)** use data to create real-object and picture graphs.	**1(8)(B)** use data to create picture and bar graphs.	**2(10)(B)** organize a collection of data with up to four categories using pictographs and bar graphs with intervals of one or more.

DRAWING CONCLUSIONS AND SOLVING PROBLEMS USING REPRESENTATIONS OF DATA

Prekindergarten-PK3 V.E. Classification and Patterns	**Prekindergarten-PK4** V.E. Classification and Patterns	**Kindergarten** K(8) Data analysis. The student applies mathematical process standards to collect and organize data to make it useful for interpreting information. The student is expected to:	**Grade 1** 1(8) Data analysis. The student applies mathematical process standards to organize data to make it useful for interpreting information and solving problems. The student is expected to:	**Grade 2** 2(10) Data analysis. The student applies mathematical process standards to organize data to make it useful for interpreting information and solving problems. The student is expected to:
PK3.V.E.2 Child participates in group activities of collecting data and organizing it into graphic representations.	**PK4.V.E.2** Child collects data and organizes it in a graphic representation.	**K(8)(C)** draw conclusions from real-object and picture graphs.	**1(8)(C)** draw conclusions and generate and answer questions using information from picture and bar-type graphs.	**2(10)(D)** draw conclusions and make predictions from information in a graph.
No standard present in the vertical progression	No standard present in the vertical progression	No standard present in the vertical progression	No standard present in the vertical progression	**2(10)(C)** write and solve one-step word problems involving addition or subtraction using data represented within pictographs and bar graphs with intervals of one.

CONSIDERING INCOME AND CAREERS

Prekindergarten-PK3 N/A	**Prekindergarten-PK4** N/A	**Kindergarten** K(9) Personal financial literacy. The student applies mathematical process standards to manage one's financial resources effectively for lifetime financial security. The student is expected to:	**Grade 1** 1(9) Personal financial literacy. The student applies mathematical process standards to manage one's financial resources effectively for lifetime financial security. The student is expected to:	**Grade 2** 2(11) Personal financial literacy. The student applies mathematical process standards to manage one's financial resources effectively for lifetime financial security. The student is expected to:
No standard present in the vertical progression	No standard present in the vertical progression	**K(9)(A)** identify ways to earn income.	**1(9)(A)** define money earned as income.	No standard present in the vertical progression
No standard present in the vertical progression	No standard present in the vertical progression	**K(9)(D)** distinguish between wants and needs and identify income as a source to meet one's wants and needs.	**1(9)(B)** identify income as a means of obtaining goods and services, oftentimes making choices between wants and needs.	No standard present in the vertical progression
No standard present in the vertical progression	No standard present in the vertical progression	**K(9)(B)** differentiate between money received as income and money received as gifts.	No standard present in the vertical progression	No standard present in the vertical progression
No standard present in the vertical progression	No standard present in the vertical progression	**K(9)(C)** list simple skills required for jobs.	No standard present in the vertical progression	No standard present in the vertical progression
No standard present in the vertical progression	No standard present in the vertical progression	No standard present in the vertical progression	No standard present in the vertical progression	**2(11)(F)** differentiate between producers and consumers and calculate the cost to produce a simple item.

CONSIDERING SAVING AND INVESTING

Prekindergarten-PK3 N/A	Prekindergarten-PK4 N/A	Kindergarten N/A	Grade 1 1(9) Personal financial literacy. The student applies mathematical process standards to manage one's financial resources effectively for lifetime financial security. The student is expected to:	Grade 2 2(11) Personal financial literacy. The student applies mathematical process standards to manage one's financial resources effectively for lifetime financial security. The student is expected to:
No standard present in the vertical progression	No standard present in the vertical progression	No standard present in the vertical progression	**1(9)(C)** distinguish between spending and saving.	**2(11)(A)** calculate how money saved can accumulate into a larger amount over time.
No standard present in the vertical progression	No standard present in the vertical progression	No standard present in the vertical progression	No standard present in the vertical progression	**2(11)(B)** explain that saving is an alternative to spending.

CONSIDERING CREDIT AND DEBT

Prekindergarten-PK3 N/A	Prekindergarten-PK4 N/A	Kindergarten N/A	Grade 1 N/A	Grade 2 2(11) Personal financial literacy. The student applies mathematical process standards to manage one's financial resources effectively for lifetime financial security. The student is expected to:
No standard present in the vertical progression	No standard present in the vertical progression	No standard present in the vertical progression	No standard present in the vertical progression	**2(11)(D)** identify examples of borrowing and distinguish between responsible and irresponsible borrowing.
No standard present in the vertical progression	No standard present in the vertical progression	No standard present in the vertical progression	No standard present in the vertical progression	**2(11)(E)** identify examples of lending and use concepts of benefits and costs to evaluate lending decisions.

CONSIDERING PLANNING AND MONEY MANAGEMENT

Prekindergarten-PK3 N/A	**Prekindergarten-PK4** N/A	**Kindergarten** N/A	**Grade 1** 1(9) Personal financial literacy. The student applies mathematical process standards to manage one's financial resources effectively for lifetime financial security. The student is expected to:	**Grade 2** 2(11) Personal financial literacy. The student applies mathematical process standards to manage one's financial resources effectively for lifetime financial security. The student is expected to:
No standard present in the vertical progression	No standard present in the vertical progression	No standard present in the vertical progression	**1(9)(D)** consider charitable giving.	No standard present in the vertical progression
No standard present in the vertical progression	No standard present in the vertical progression	No standard present in the vertical progression	No standard present in the vertical progression	**2(11)(C)** distinguish between a deposit and a withdrawal.