Kindergarten Mathematics – Scope and Sequence – MSD of Pike Township

Purpose Statement

The purpose of this scope and sequence document is to ensure that MSD of Pike Township has a viable and guaranteed Mathematics curriculum. It is meant to provide the foundational skills, strategies, and concepts necessary for our students to leave Pike Township college and career ready. Please remember that this scope and sequence is based on the Indiana Academic Standards and the typical progress of students. Use your professional judgment when addressing the individual needs of your students. If you need to shorten or lengthen a unit, then do so based on mastery of standards, evidence from your classroom assessments and professional observations. Always consider the students' need and interest as well as social studies and science content area topics to guide your units of study. Collaborate with your instructional coach and school librarian to plan and implement the units of study, mini-lesson ideas, and instructional resources.

Components Included in the Scope and Sequence

Process Standards for Mathematics	Number Work	Computation and Algebraic Thinking	Geometry, Measurement and Data Analysis	Fluency and Maintenance
As you work with your students, please remember the following: • The Process Standards for Mathematics are the "how" when delivering mathematics instruction. They rely on students communicating with each other about mathematics in order to learn mathematics. • The Process Standards for Mathematics are expected student behaviors. ***1. Make sense of problems and persevere in solving them.*** ***2. Reason abstractly and quantitatively.*** ***3. Construct viable arguments and critique the reasoning of others.*** ***4. Model with mathematics.*** ***5. Use appropriate tools strategically.*** ***6. Attend to precision.*** ***7. Look for and make use of structure.*** ***8. Look for and express regularity in repeated reasoning.***	**As you work with your students, please remember the following:** • Number work is a crucial foundational piece for all mathematicians to develop a fluid understanding for future concepts. • Number work builds each of the following skills within number sense: number meaning, number relationships, number magnitude, operations involving numbers, and referents for numbers and quantities. • Mathematicians who develop good number sense through number work are more likely to be successful and confident in the following activities: mental calculation; computational estimation; judging the relative magnitude of numbers; recognizing part-whole relationships and place value concepts; and problem solving. (https://nrich.maths.org/2477)	**As you work with your students, please remember the following:** • Mathematicians develop computational understanding by using concrete models and small numbers (such as objects, fingers, and math drawings) to act out situations involving addition and subtraction. • Mathematicians need time to reflect on, and discuss concrete models to develop a conceptual understanding of addition and subtraction and begin to make connections to their mathematical notations. • As mathematicians become comfortable with the operations of addition and subtraction, be sure to show them the mathematical notations for adding and subtracting (expressions and equations). • Mathematicians need ample time to work on making "five" and making "ten" to solidify their understanding of how to compose and decompose numbers.	**As you work with your students, please remember the following:** • Geometry enables us to describe, analyze, and understand the world around us. Many mathematicians possess basic concepts of shape and space from a very young age. • Mathematicians develop the abilities to: analyze characteristics and properties of shapes; specify positions and describe spatial relationships; and to create geometric models to solve problems. • Mathematicians develop an understanding of the measurement systems within their world through hands-on experiences, testing theories, and discussing outcomes with others. • Many young mathematicians are very curious, and have many questions. Use this to your advantage by helping them collect and analyze data to answer their own questions.	**As you work with your students, please remember the following:** • Mathematicians need authentic practice over time to develop fluency and maintain previously obtained fluencies. • Mathematicians develop efficiency and accuracy by authentically using skills and applying concepts to situations over time. • Fluency and maintenance work should always be at a mathematician's current independent computational and problem solving level. **Fluency Expectations:** • Count to at least 100 by ones and tens. • Write and recognize written numerals 0 – 20. • Develop one-to-one correspondence. • Recognize sets of 1 to 10 objects in patterned arrangements without counting. **(K.NS.1, K.NS.2, K.NS.4, K.NS.6)**

Each Component Includes:

Essential Goals	Priority Standards	Strategies/Skills	Academic Vocabulary	Instructional Support
These goals define the necessary habits, skills, and dispositions we want students to know and be able to do when the unit is completed.	The Indiana Academic Standards listed represent the priority standards for the unit. Other standards may be taught explicitly or implicitly.	The strategy and skill focus gives guidance for lesson topics and ideas. It also gives ideas for teaching strategies you might rely upon for instruction. The goal is for students to understand these skills/strategies by the end of the unit.	Academic vocabulary includes the words that are needed to understand the content. Additional vocabulary may be needed for students who need remediation or enrichment.	This is where you will find your connection to possible instructional resources, including Go Math. Ask your school librarian and/or instructional coach for assistance in this area also! Ideas for scaffolding support for striving mathematicians, English Learners and Exceptional Learners are provided. Please use your available resources to differentiate for students. Ask your building resource teachers for assistance if needed.

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	Quarter 1 Foundations of Number Sense (Naming)	Quarter 2 Practicing with Number Sense (Relationships)	Quarter 3 Using Number Sense (Understanding)	Quarter 4 Extending Number Sense (Application)
K.NS.1	• Count to at least 20 by ones.	• Count to at least 50 by ones. • Begin to count to at least 100 by tens. • Begin to count on by one from any number (within 20).	• Count to at least 70 by ones. • Count to at least 100 by tens. • Count on by one from any number (within 50).	• Count to at least 100 by ones. • Count on by one from any number (within 100).
K.NS.2	• Begin writing whole numbers from 0 to 20. • Begin representing a number of objects with a written numeral from 0 to 10.	• Practice writing whole numbers from 0 to 20. • Begin recognizing number words 0 to 10 • Practice representing a number of objects with a written numeral from 0 to 20.	• Write whole numbers from 0 to 20. • Recognize number words from 0 to 10. • Represent a number of objects with a written numeral from 0 to 20.	• Write whole numbers from 0 to 20. • Connect number words 0 to 10 to their corresponding numerals and quantities. • Represent a number of objects with a written numeral from 0 to 20.
K.NS.3		• Begin to find the number that is one more than any whole number 0 to 20.	• Find the number that is one more than any whole number 0 to 20.	• Find the number that is one more or one less than any whole number 0 to 20.
K.NS.4	• Begin to say the number names in standard order when counting objects, pairing each object with one and only one number name and each number name with one and only one object. • Begin to make the connection that the last number name said describes the number of objects counted.	• Practice saying the number names in standard order when counting objects, pairing each object with one and only one number name and each number name with one and only one object. • Understand that the last number name said describes the number of objects counted and that the number of objects is the same regardless of their arrangement or the order in which they were counted.	• Say the number names in standard order when counting objects, pairing each object with one and only one number name and each number name with one and only one object. • Understand that the last number name said describes the number of objects counted and that the number of objects is the same regardless of their arrangement or the order in which they were counted.	• Say the number names in standard order when counting objects, pairing each object with one and only one number name and each number name with one and only one object. • Understand that the last number name said describes the number of objects counted and that the number of objects is the same regardless of their arrangement or the order in which they were counted.
K.NS.5	• Begin counting up to 20 objects in a line, rectangular array or a circle.	• Count up to 20 objects in a line, rectangular array or a circle. • Begin to count up to 10 objects in a scattered configuration.	• Count up to 20 objects in a line, rectangular array or a circle. • Count up to 10 objects in a scattered configuration.	• Count up to 20 objects in a line, rectangular array or a circle. • Count up to 10 objects in a scattered configuration.
K.NS.6	• Begin to recognize sets of 1 to 10 objects in patterned arrangements without counting.	• Practice recognizing sets of 1 to 10 objects in patterned arrangements without counting.	• Recognize sets of 1 to 10 objects in patterned arrangements without counting.	• Recognize sets of 1 to 10 objects in patterned arrangements without counting and explain the reasoning used.
K.NS.7		• Begin to identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group (e.g., by using matching and counting strategies).	• Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group (e.g., by using matching and counting strategies).	• Explain whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group (e.g., by using matching and counting strategies).
K.NS.8		• Begin to compare the values of two numbers from 1 to 20 presented as written numerals.	• Compare the values of two numbers from 1 to 20 presented as written numerals.	• Compare the values of two numbers from 1 to 20 presented as written numerals. Justify reasoning used.
K.NS.9		• Introduce and begin using correctly the words for comparison, including: one and many; none, some and all; more and less; most and least; and equal to, more than and less than.	• Practice using correctly the words for comparison, including: one and many; none, some and all; more and less; most and least; and equal to, more than and less than.	• Use correctly the words for comparison, including: one and many; none, some and all; more and less; most and least; and equal to, more than and less than.
K.NS.10		• Begin to separate sets of ten or fewer objects into equal groups.	• Practice separating sets of ten or fewer objects into equal groups.	• Separate sets of ten or fewer objects into equal groups.
K.NS.11			• Develop initial understandings of place value and the base 10 number system by showing equivalent forms of whole numbers from 10 to 20 as groups of tens and ones using objects and drawings.	• Demonstrate understandings of place value and the base 10 number system by showing equivalent forms of whole numbers from 10 to 20 as groups of tens and ones using objects and drawings.

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	Quarter 1 Foundations of Computation and Algebraic Thinking (Naming)	Quarter 2 Practicing with Computation and Algebraic Thinking (Relationships)	Quarter 3 Using Computation and Algebraic Thinking (Understanding)	Quarter 4 Extending Computation and Algebraic Thinking (Application)
K.CA.1		• Introduce and practice using objects, drawings, mental images, sounds, etc. to represent addition within 5.	• Use objects, drawings, mental images, sounds, etc., to represent addition within 10. • Introduce and use objects, drawings, mental images, sounds, etc. to represent subtraction within 5.	• Use objects, drawings, mental images, sounds, etc. to represent addition within 10. • Use objects, drawings, mental images, sounds, etc. to represent subtraction within 10.
K.CA.2		• Begin to solve real-world problems that involve addition within 5 (e.g., by using objects or drawings to represent the problem).	• Solve real-world problems that involve addition and subtraction within 5 (e.g., by using objects or drawings to represent the problem).	• Solve real-world problems that involve addition and subtraction within 10 (e.g., by using objects or drawings to represent the problem).
K.CA.3			• Begin to use objects, drawings, etc., to decompose numbers less than or equal to 10 into pairs in more than one way, and record each decomposition with a drawing or an equation (e.g., 5 = 2 + 3 and 5 = 4 + 1). [In Kindergarten, students should see equations and be encouraged to trace them, however, writing equations is not required.]	• Use objects, drawings, etc., to decompose numbers less than or equal to 10 into pairs in more than one way, and record each decomposition with a drawing or an equation (e.g., 5 = 2 + 3 and 5 = 4 + 1). [In Kindergarten, students should see equations and be encouraged to trace them, however, writing equations is not required.]
K.CA.4		• Begin to find the number that makes 5 when added to the given number for any number from 1 to 4 (e.g., by using objects or drawings), and record the answer with a drawing or an equation. [In Kindergarten, students should see equations and be encouraged to trace them, however, writing equations is not required.]	• Begin to find the number that makes 10 when added to the given number for any number from 1 to 9 (e.g., by using objects or drawings), and record the answer with a drawing or an equation. [In Kindergarten, students should see equations and be encouraged to trace them, however, writing equations is not required.]	• Find the number that makes 10 when added to the given number for any number from 1 to 9 (e.g., by using objects or drawings), and record the answer with a drawing or an equation. [In Kindergarten, students should see equations and be encouraged to trace them, however, writing equations is not required.]
K.CA.5	• Begin to explain, create, and extend simple repeating patterns with shapes and other objects.	• Practice explaining, creating, and extending simple repeating patterns with numbers and shapes. • Create and extend growing patterns with numbers and shapes.	• Create and extend simple repeating and growing patterns with numbers and shapes. • Give the rule for simple repeating and growing patterns with numbers and shapes.	• Create and extend simple repeating and growing patterns with numbers and shapes. • Give and explain the rule for simple repeating and growing patterns with numbers and shapes.

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	Quarter 1 Foundations of Geometry (Naming)	Quarter 2 Practicing Geometry (Relationships)	Quarter 3 Using Geometry (Understanding)	Quarter 4 Extending Geometry (Application)
K.G.1	• Begin using positional words to name the positions of objects and geometric shapes in space using the terms inside, outside, between, above, below, near, far, under, over, up, down, behind, in front of, next to, to the left of and to the right of.	• Practice using positional words to describe the positions of objects and geometric shapes in space using the terms inside, outside, between, above, below, near, far, under, over, up, down, behind, in front of, next to, to the left of and to the right of.	• Describe the positions of objects and geometric shapes in space using the terms inside, outside, between, above, below, near, far, under, over, up, down, behind, in front of, next to, to the left of and to the right of.	• Describe the positions of objects and geometric shapes in relation to other objects and geometric shapes, using the terms inside, outside, between, above, below, near, far, under, over, up, down, behind, in front of, next to, to the left of and to the right of.
K.G.2	• Begin naming the attributes of two-dimensional shapes in different sizes and orientations (e.g., number of sides and vertices/"corners").	• Begin comparing two- and three-dimensional shapes in different sizes and orientations, using informal language to describe their similarities, differences, parts (e.g., number of sides and vertices/"corners") and other attributes (e.g., having sides of equal length).	• Practice comparing two- and three-dimensional shapes in different sizes and orientations, using informal language to describe their similarities, differences, parts (e.g., number of sides and vertices/"corners") and other attributes (e.g., having sides of equal length).	• Compare two- and three-dimensional shapes in different sizes and orientations, using informal language to describe their similarities, differences, parts (e.g., number of sides and vertices/"corners") and other attributes (e.g., having sides of equal length).
K.G.3	• Identify shapes in the world and begin drawing the shapes.	• Model shapes in the world by composing 2D shapes from objects (e.g., sticks and clay balls) and drawing shapes.	• Model shapes in the world by composing 2D and 3D shapes from objects (e.g., sticks and clay balls) and drawing shapes.	• Model shapes in the world by composing 2D and 3D shapes from objects (e.g., sticks and clay balls) and drawing shapes.
K.G.4		• Begin composing simple geometric shapes to form larger shapes (e.g., create a rectangle composed of two triangles).	• Compose simple 2D geometric shapes to form larger 2D shapes (e.g., create a rectangle composed of two triangles).	• Compose simple geometric shapes to form larger 2D shapes (e.g., create a rectangle composed of two triangles).

	Quarter 1 Foundations of Measurement (Naming)	Quarter 2 Practicing Measurement (Relationships)	Quarter 3 Using Measurement (Understanding)	Quarter 4 Extending Measurement (Application)
K.M.1			• Begin making direct comparisons of the length, capacity, weight, and temperature of objects, and recognize which object is shorter, longer, taller, lighter, heavier, warmer, cooler, or holds more.	• Make direct comparisons of the length, capacity, weight, and temperature of objects, and recognize which object is shorter, longer, taller, lighter, heavier, warmer, cooler, or holds more and explain the reasoning used.
K.M.2	• Begin to understand concepts of time, including: morning, afternoon, evening, today, yesterday, tomorrow, day, week, month, and year. Understand that clocks and calendars are tools that measure time.	• Practice using the relationship between concepts of time, including: morning, afternoon, evening, today, yesterday, tomorrow, day, week, month, and year.	• Understand and use the relationship between concepts of time, including: morning, afternoon, evening, today, yesterday, tomorrow, day, week, month, and year. Understand that clocks and calendars are tools that measure time.	• Understand and use the relationship between concepts of time, including: morning, afternoon, evening, today, yesterday, tomorrow, day, week, month, and year. Understand that clocks and calendars are tools that measure time.

	Quarter 1 Foundations of Data Analysis (Naming)	Quarter 2 Practicing Data Analysis (Relationships)	Quarter 3 Using Data Analysis (Understanding)	Quarter 4 Extending Data Analysis (Application)
K.DA.1	• Begin to identify and sort shapes and different objects.	• Practice identifying, sorting, and classifying objects by size, number, and other attributes.	• Identify, sort, and classify objects by size, number, and other attributes. Identify objects that do not belong to a particular group.	• Identify, sort, and classify objects by size, number, and other attributes. Identify objects that do not belong to a particular group and explain the reasoning used.

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Essential Goals for Quarter 1:	**Questions Students Will Answer:**
Mathematicians safely explore numbers and their values. Mathematicians have accessibility to multiple resources and strategies to express their thinking. Mathematicians have appropriate supports while exploring the foundations of their mathematical world. Mathematicians are empowered to think and talk like mathematicians. Mathematicians connect math concepts to the world around them. Mathematicians develop a confidence to explore their mathematical world.	What is a mathematician? What do they do? Why are numbers important? What do numbers represent? How can we represent numbers in different ways? How can we keep track of what we already counted? How can we make sure our counting is accurate? How can we sound like mathematicians? What words do we need to use? What patterns do we see in our world? How can we describe those patterns?

Quarter 1 Weeks 1-4	Essential Goals	Priority Standards	Skills/Strategies	Academic Vocabulary	Possible Instructional Support	Differentiation
Unit 1: **We are a Community of Mathematicians!**	• Mathematicians try different strategies. • Mathematicians progress from concrete to pictorial to more abstract reasoning. • Mathematicians listen and respond to others' thinking. • Mathematicians find math ideas in their world. • Mathematicians use correct math words to express thinking.	PS. 1 PS. 2 PS. 3 PS. 6	• Provide contextual problems and time for mathematicians to solve problems involving patterns and counting. • Ask for more than one way to count or sort objects. • Provide mathematicians time for drawing about math. • Use turn and talk for discussions of mathematical ideas. • Allow time for partner explorations of new ideas.	strategies explain mathematicians	**Mentor Texts/Read Alouds** Ten Black Dots (Donald Crews) Ten Little Monkeys (Eileen Cristelow) Ten, Nine, Eight (Molly Bang) Ten on a Sled (Kim Norman) 1,2,3 to the Zoo (Eric Carle) One of Each (Mary Anne Hoberman) One (Kathryn Otoshi) More (IC Springman) **Professional Resources** Go Math! (This resource is available for your use; however, the textbook is not exactly aligned to our scope and sequence. There are many other digital resources available on the Go Math website) Guided Math in Action Newton Math Exchanges Wedekind Math Workstations Diller Everyday Mathematics Math and Literature K-1 by Marilyn Burns & Stephanie Sheffield Math Reads: Making Math the Story Math Their Way Baratta-Lorton Developing Number Concepts Richardson Learning Math in the Primary Grades (Madison MSD) https://math.madison.k12.wi.us/files/math/LMPGcomplete.pdf https://www.pinterest.com/pin/108297566013969391/ https://www.pinterest.com/pin/210613720046556545/ http://thekindercupboard.blogspot.com/2012/10/teaching-numbers-1-to-5.html **Songs:** • Let's Get Fit by Jack Hartmann • Dr. Jean songs • Harry Kindergarten	• Counting partners • Picture Cards • Number Cards • Number Wall Chart • Picture Books • Hundreds charts • Math Journals **Possible Assessments/Evidence:** • Create counting books: 0-10, 11-20 • Counting Interview • Kathy Richardson's Counting Assessment • Complete a Number grid • Shape interview • Math Journals • Reflections • Use of vocabulary • Exit slips **Materials:** pattern blocks unifix cubes 3D Shapes natural materials number strings abacus place value 1 cm blocks
Number Work	• Mathematicians count in numerical order. • Mathematicians write numerals to represent values and quantities. • Mathematicians recognize and name printed numerals. • Mathematicians use different strategies during counting to make sure they are accurate.	K.NS.1 K.NS.2 K.NS.4 K.NS.5 K.NS.6	**New** • Introduce the counting sequence to 10. • Introduce the numerals 0 – 10. • Practice tracing and writing the numerals 0 – 10. • Count days of school with tallies, ten frames, base ten blocks, popsicle sticks, and numerals. • Represent a number of objects with a written numeral. • Begin counting objects in lines, rectangular arrays, and circles, pairing one object with one number name. • Begin to work on one-to-one correspondence. • Play counting games (e.g. Number Hunt).	Count, number, one, two, three, four, five, six, seven, eight, nine, ten, numeral		
Computation and Algebraic Thinking	• Mathematicians look for patterns in their world.	K.CA.5	**New** • Begin to look for, create, and extend simple repeating patterns with shapes.	patterns		
Geometry, Measurement and Data Analysis	• Mathematicians understand that math is more than numbers; it is also shapes and patterns. • Mathematicians recognize, name and draw shapes and patterns in their environment. • Mathematicians name the position of objects to communicate clearly. • Mathematicians identify and sort objects. • Mathematicians understand concepts of time.	K.G.1 K.G.3 K.M.2 K.DA.1	**New** • Introduce morning, afternoon, evening. • Introduce today, yesterday, and tomorrow. • Introduce two dimensional shapes. • Introduce and use positional words. • Sort objects by one or two given attributes. • Play shape hunt.	Morning, afternoon, evening, yesterday, today, tomorrow, calendar, Inside, outside, between, above, below, near, far, under, over, up, down, behind, in front of, next to, to the left of, to the right of, number, identify, sort, attribute		

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Fluency and Maintenance	• Mathematicians continue to build upon their prior knowledge. • Mathematicians relate their current knowledge to new situations. • Mathematicians connect number names they hear to their numerals.	K.NS.2	**New** • Introduce and review daily routines. • Play games to help with number recognition. • Introduce subitizing activities. • Use stations with specific skill imbedded into activities. • Provide small group instruction on specific skills. • Send games home to practice reasoning and specific skills.	Routines, procedures, journal, word wall, center, subitizing, etc.		

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Quarter 1 Weeks 5- 9	Essential Goals	Priority Standards	Skills/Strategies	Academic Vocabulary	Possible Instructional Resources	Differentiation
Unit 2: **Building a Strong Foundation!**	• Mathematicians try different strategies. • Mathematicians progress from concrete to pictorial to more abstract reasoning. • Mathematicians listen and respond to others' thinking. • Mathematicians find math ideas in their world. • Mathematicians use correct math words to express their thinking.	PS. 1 PS. 2 PS. 3 PS. 6	• Provide contextual problems and time for mathematicians to solve problems involving patterns and counting. • Ask for more than one way to count or sort objects. • Provide mathematicians time and structure for drawing about math. • Use turn and talk for discussions of mathematical ideas. • Allow time for partner explorations of new ideas.	strategies explain mathematicians	**Mentor Texts/Read Alouds** Sea Shapes Count Doggy Kisses 1 2 3 More, Fewer, Less So Many Circles, So Many Squares Fish Eyes **Professional Resources** Go Math! Grab-and-Go Differentiated Centers Guided Math in Action Newton Math Exchanges Wedekind Math Workstations Diller Everyday Mathematics Math and Literature K-1 by Marilyn Burns & Stephanie Sheffield Math Reads: Making Math the Story Math Their Way Baratta-Lorton Developing Number Concepts Richardson Good Questions for Math Teaching Learning Math in the Primary Grades (Madison MSD) https://math.madison.k12.wi.us/files/math/LMPGcomplete.pdf https://www.pinterest.com/pin/108297566013969391/ https://www.pinterest.com/pin/210613720046556545/ http://thekindercupboard.blogspot.com/2012/10/teaching-numbers-1-to-5.html **Songs:** • Let's Get Fit by Jack Hartmann • Dr. Jean songs • Harry Kindergarten • Have Fun Teaching Songs	• Manipulatives • Counting partners • Picture Cards • Number Cards • Number Wall Chart • Picture Books • Hundreds charts • Math Journals **Possible Assessments/Evidence:** • Create counting books: 0-10, 11-20 • Counting Interview • Kathy Richardson's Counting Assessment • Complete a Number grid • Shape interview • Math Journals • Reflections • Observations • Mathematicians' use of vocabulary • Exit slips • Fluency interview **Materials:** • pattern blocks • unifix cubes • 3D Shapes • natural materials • number strings • abacus • place value 1 cm blocks
Foundations in Number Work	• Mathematicians count in numerical order. • Mathematicians write numerals to represent values and quantities. • Mathematicians use different strategies during counting to make sure they are accurate. • Mathematicians understand that numbers are sequential and have a pattern. • Mathematicians understand that the last number counted is the value represented. • Mathematicians represent numbers in many different ways.	K.NS.1 K.NS.2 K.NS.4 K.NS.5 K.NS.6	**New** • Extend the counting sequence to 20. • Introduce the numerals 11 – 20. • Help students begin to make the connection that the last number name said describes the number of objects/shapes counted. **Practice and Extend** • Practice tracing and writing the numerals 0 – 10. • Count days of school with tallies, ten frames, and numerals. • Represent a number of shapes with a written numeral. • Work on one-to-one correspondence. • Recognize patterns with numbers. • Play counting games (e.g. Number Hunt).	Count, number, one, two, three, four, five, six, seven, eight, nine, ten, eleven, twelve, thirteen, fourteen, fifteen, sixteen, seventeen, eighteen, nineteen, twenty, numeral		
Foundations in Computation and Algebraic Thinking	• Mathematicians create and extend patterns. • Mathematicians see patterns in their world. • Mathematicians see patterns in shapes and numbers.	K.CA.5	**New** • Explain simple repeating patterns with numbers or shapes. **Practice and Extend** • Create and extend simple repeating patterns with shapes and numbers.	patterns		
Foundations in Geometry, Measurement and Data Analysis	• Mathematicians understand that math is more than numbers; it is also shapes and patterns. • Mathematicians recognize shapes and patterns in their environment. • Mathematicians describe the position of objects to communicate clearly. • Mathematicians identify and sort objects. • Mathematicians understand concepts of time.	K.G.1 K.G.2 K.G.3 K.M.2 K.DA.1	**New** • Introduce day, week, month, and year. • Identify, describe, and draw two dimensional shapes. **Practice and Extend** • Use morning, afternoon, evening. • Use today, yesterday, and tomorrow. • Identify, describe, and draw two dimensional shapes. • Use positional words. • Group objects by size, number and other attributes. • Play shape hunt.	morning, afternoon, evening, yesterday, today, tomorrow, day, week, month, year, calendar, inside, outside, between, above, below, near, far, under, over, up, down, behind, in front of, next to, to the left of, to the right of, number, shape, identify, sort, attribute		

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Foundations in Fluency and Maintenance	• Mathematicians continue to build upon their prior knowledge. • Mathematicians relate their current knowledge to new situations. • Mathematicians connect number names they hear to their numerals. • Mathematicians are able to name a value of a number when shown in multiple representations.	K.NS.2 K.NS.6	**Practice and Extend** • Review daily routines. • Play games to help with number recognition. • Use ten frames, dice, dot cards, etc. to help students recognize the value of the numbers 1 to 10 in different representations without counting (subitize). • Use stations with specific skill imbedded into activities. • Provide small group instruction on specific skills. • Send games home to practice reasoning and specific skills.	Routines, procedures, journal, word wall, center, etc.		•

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Essential Goals for Quarter 2:	**Questions Students Will Answer:**
Mathematicians engage in hands-on, minds-on, interactive learning. Mathematicians make sense of problems and persevere in solving them. Mathematicians confidently make connections across the curriculum and the world around them. Mathematicians are empowered to talk like mathematicians. Mathematicians progress from concrete to abstract reasoning.	How do we know if a set has more, less or an equal amount? How can we prove more, less or equal values/representations? How can we describe, compare, and classify shapes and other objects? How can we extend patterns? How and where is addition and subtraction used in our world? How can we describe, compare, and classify numbers?

Quarter 2 Weeks 10 – 13	Essential Goals	Priority Standards	Skills/Strategies	Academic Vocabulary	Possible Instructional Resources	Differentiation
Unit 3: **Discovering Mathematical Relationships**	• Mathematicians use mathematical vocabulary when describing mathematical ideas. • Mathematicians use the patterns in their tools to make sense of the number system. • Mathematicians communicate about their mathematical understandings. • Mathematicians look for repeating patterns in the world around them.	PS. 1 PS. 3 PS. 5 PS. 8	• Provide contextual problems and time for mathematicians to understand and solve problems involving counting, comparing and patterns. • Provide time for students to look for relationships and repeated patterns in the number system. • Encourage students to share their math understandings verbally and on paper (i.e. drawing their understandings, using simple words, etc.). • Encourage students to answer the question: "what do you think about _____'s thinking?", "how do you think _____ came up with that?" etc. • Provide students with options in the tools they can use to investigate relationships. • Encourage students to explain why they choose and use specific math tools.	relationships, understandings, repeat, patterns, explain, justify, reasoning, thinking	**Mentor Texts/Read Alouds** • More Than One by Miriam Schlein • Ten Flashing Fireflies by Philemon Sturges • One Too Many by Gianna Marino • Anno's Counting Book by Anno • My Little Sister Ate One Hair by Bill Grossman • The Doorbell Rang by Pat Hutchens • Only One by Marc Harshman • Roosters Off to See the World by Eric Carle • Count 123 On the Subway by Paul Dubois • City by Numbers by Stephen Johnson • Color Zoo by Lois Ehlert **Professional Resources:** Go Math! Grab-and-Go Differentiated Centers Games For Math by Peggy Kaye Lake Shore Early Math Activity Jars Guided Math in Action Newton Math Exchanges Wedekind Math Workstations Diller Everyday Mathematics Math and Literature K-1 by Marilyn Burns & Stephanie Sheffield Math Reads: Making Math the Story Math Their Way Baratta-Lorton Developing Number Concepts Richardson Good Questions for Math Teaching	• Manipulatives • Counting partners • Picture Cards • Number Cards • Number Wall Chart • Picture Books • Hundreds charts • Math Journals **Possible Assessments/Evidence:** • Counting Interview • Kathy Richardson's Counting Assessment • Complete a Number grid • Shape interview • Math Journals • Reflections • Observations • Mathematicians' use of vocabulary • Exit slips • Fluency interview **Materials** • 10 frames • pattern blocks • counters • natural materials • geoboards • links • unifix cubes
Discovering Relationships with Numbers	• Mathematicians count in numerical order. • Mathematicians write numerals to represent values and quantities. • Mathematicians use math tools to help them understand relationships between numbers. • Mathematicians describe numbers on a number line going forward or backward in relationship to their value. • Mathematicians use precise language when describing relationships.	K.NS.1 K.NS.3 K.NS.4 K.NS.5 K.NS.7 K.NS.8 K.NS.9 K.NS.10	**New** • Begin to count to 50 by ones. • Begin to count to 100 by tens. • Introduce counting on from a number other than one. • Begin finding the number that is one more (up to 20). • Begin counting 10 objects in a scattered configuration. • Begin to separate sets of up to ten into equal groups. **Practice and Extend** • Count up to 20 objects arranged in a line, rectangular array, or circle. • Compare values of two numbers written as numerals up to 10 (using objects, number line, etc.). • Use a number line, number chart, and objects to help students understand the value of numbers.	ones, tens, compare, greater than, less than, equal to, one, many, some, all, more, less, most, least,	
Discovering Relationships in Computation and Algebraic Thinking	• Mathematicians use concrete representations for addition. • Mathematicians understand addition as putting together and adding to. • Mathematicians describe patterns in various ways.	K.CA.5	**Practice and Extend** • Explain growing patterns.	repeating, growing, pattern, rule		

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Discovering Relationships in Geometry, Measurement and Data Analysis	• Mathematicians describe the position of objects and shapes in the world around them. • Mathematicians compare and contrast attributes of two – dimensional objects. • Mathematicians understand the relationships between concepts of time. • Mathematicians use precise language when describing relationships.	K.G.1 K.G.2 K.G.3 K.M.1 K.M.2 K.DA.1	**New** • Introduce three-dimensional shapes and their attributes. • Begin to identify objects that do not belong to a group. • Discuss and record daily temperature. • Discuss the relationships between concepts of time. • Discuss how concepts of time are depicted on a calendar and a clock. **Practice and Extend** • Practice using positional words to describe the position of objects and shapes. • Compare two-dimensional shapes. • Group objects by size, number, and other attributes.	inside, outside, between, above, below, near, far, under, over, up, down, behind, in front of, next to, to the left of, to the right of, shorter, longer, taller, lighter, heavier, clock, calendar	Learning Math in the Primary Grades (Madison MSD) https://math.madison.k12.wi.us/files/math/LMPGcomplete.pdf	• attribute blocks • 100s Chart • Judy Clocks • pan balance • Double sided counters • Dominos • Rekenrek and Abacus • Dice
Fluency and Maintenance	• Mathematicians practice what they already know in new situations to build better understandings.	K.NS.1 K.NS.2 K.NS.6	**Practice and Extend** • Continue to practice counting to 30 by ones. • Continue to allow time for students to recognize sets of 1 to 10 objects in patterned configurations without counting (subitize). • Continue to practice writing numerals 0 – 20. • Continue to practice reading number names 0 – 10.	subitize, number names, numerals		

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Quarter 2 Weeks 14-18	Essential Goals	Priority Standards	Skills/Strategies	Academic Vocabulary	Possible Instructional Resources	Differentiation
Unit 4: **Exploring Mathematical Relationships**	• Mathematicians use mathematical vocabulary when describing mathematical ideas. • Mathematicians use the patterns in their tools to make sense of the number system. • Mathematicians communicate about their mathematical understandings. • Mathematicians look for repeating patterns in the world around them.	PS. 1 PS. 3 PS. 5 PS. 8	• Provide contextual problems and time for mathematicians to understand and solve problems involving counting, comparing and patterns. • Provide time for students to look for relationships and repeated patterns in the number system. • Encourage students to share their math understandings verbally and on paper (i.e. drawing their understandings, using simple words, etc.). • Encourage students to answer the question: "what do you think about _____'s thinking?", "how do you think _____ came up with that?" etc. • Provide students with options in the tools they can use to investigate relationships. • Encourage students to explain why they choose and use specific math tools.	relationships, understandings, repeat, patterns, explain, justify, reasoning, thinking	**Mentor Texts/Read Alouds** • More Than One by Miriam Schlein • Ten Flashing Fireflies by Philemon Sturges • One Too Many by Gianna Marino • Anno's Counting Book by Anno • My Little Sister Ate One Hair by Bill Grossman • The Doorbell Rang by Pat Hutchens • Only One by Marc Harshman • Roosters Off to See the World by Eric Carle • Count 123 On the Subway by Paul Dubois • City by Numbers by Stephen Johnson • Color Zoo by Lois Ehlert • Cubes, Cones, Cylinders and Spheres by Tana Hoban **Professional Resources:** Go Math! Grab-and-Go Differentiated Centers Games For Math by Peggy Kaye Lake Shore Early Math Activity Jars Guided Math in Action Newton Math Exchanges Wedekind Math Workstations Diller Everyday Mathematics Math and Literature K-1 by Marilyn Burns & Stephanie Sheffield Math Reads: Making Math the Story Math Their Way Baratta-Lorton Developing Number Concepts Richardson Good Questions for Math Teaching Learning Math in the Primary Grades (Madison MSD)	• Manipulatives • Counting partners • Picture Cards • Number Cards • Number Wall Chart • Picture Books • Hundreds charts • Math Journals **Possible Assessments/Evidence:** • Counting Interview • Kathy Righardson's Counting Assessment • Complete a Number grid • Shape interview • Math Journals • Reflections • Observations • Mathematicians' use of vocabulary • Exit slips • Fluency interview • Problem-Solving interview **Materials** • 10 frames • pattern blocks • counters • natural materials • geoboards • links • unifix cubes • attribute blocks • 100s Chart
Exploring Relationships with Numbers	• Mathematicians count in numerical order. • Mathematicians write numerals to represent values and quantities. • Mathematicians use math tools to help them understand relationships between numbers. • Mathematicians describe numbers on a number line going forward or backward in relationship to their value. • Mathematicians use precise language when describing relationships.	K.NS.1 K.NS.3 K.NS.4 K.NS.5 K.NS.7 K.NS.8 K.NS.9 K.NS.10	**Practice and Extend** • Count to 50 by ones. • Count to 100 by tens. • Count on from any number less than 20. • Find the number that is one more than any whole number up to 20. • Count up to 20 objects arranged in a line, rectangular array, or circle. • Count 10 objects in a scattered configuration. • Compare values of two numbers written as numerals up to 10 (using objects, number line, etc.). • Separate sets of ten or fewer objects into equal groups. • Use a number line, number chart, and objects to help students understand the value of numbers.	ones, tens, compare, greater than, less than, equal to, one, many, some, all, more, less, most, least,		
Exploring Relationships in Computation and Algebraic Thinking	• Mathematicians use concrete representations for addition. • Mathematicians understand addition as putting together and adding to. • Mathematicians describe patterns in various ways.	K.CA.1 K.CA.5	**New** • Introduce addition within 5 using informal language (i.e., what if I had 2 more? What would I do if I need 1 more? If I have 2 here and 2 here, how many do I have?). • Use drawings, objects, body movements, sounds, etc., to demonstrate addition 0 – 5. **Practice and Extend** • Classify and describe repeating and growing patterns and their rules.	addition, repeating, growing, pattern, rule, putting together, adding to		

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Exploring Relationships in Geometry, Measurement and Data Analysis	• Mathematicians describe the position of objects based on their relationship to other objects. • Mathematicians compare and contrast attributes of two- and three-dimensional objects. • Mathematicians understand the relationships between concepts of time. • Mathematicians use precise language when describing relationships.	K.G.1 K.G.2 K.G.3 K.M.1 K.M.2 K.DA.1	**New** • Begin making direct comparisons of length, capacity, weight, and temperature. **Practice and Extend** • Use positional words to describe the position of objects in relation to another object. • Describe two – and three – dimensional shapes. • Compare two – dimensional shapes. • Compare three – dimensional shapes. • Discuss the relationships between concepts of time already introduced, and how they are portrayed on a calendar and on a clock. • Group objects by size, number and other attributes. • Identify objects that do not belong to a group.	inside, outside, between, above, below, near, far, under, over, up, down, behind, in front of, next to, to the left of, to the right of, shorter, longer, taller, lighter, heavier, clock, calendar	https://math.madison.k12.wi.us/files/math/LMPGcomplete.pdf	• Judy Clocks • pan balance • Double sided counters • Dominos • Rekenrek and Abacus • Dice
Fluency and Maintenance	• Mathematicians practice what they already know in new situations to build better understandings.	K.NS.1 K.NS.2 K.NS.6	**Practice** • Continue to practice counting to 30 by ones. • Continue to allow time for students to recognize sets of 1 to 10 objects in patterned configurations without counting (subitize). • Continue to practice writing numbers 0 – 20. • Continue to practice reading number names 0 – 10.	subitize, number names, numerals		

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Essential Goals for Quarter 3:	**Questions Students Will Answer:**
Mathematicians will engage in hands-on, minds-on, interactive learning. Mathematicians will make sense of problems and persevere in solving them. Mathematicians will confidently make connections across the curriculum and the world around them. Mathematicians will be empowered to talk like mathematicians. Mathematicians will progress from concrete to abstract reasoning. Mathematicians will make connections between equations, numerical representations, and real-world problems.	In what ways do I decompose numbers in the real world? How can I represent numbers most efficiently using place value? How can I create shapes using more than one shape? What strategies can I use to solve addition problems? Why do these strategies make sense? Why is the order of the digits important in written numerals?

Quarter 3 Weeks 19-23	Essential Goals	Priority Standards	Skills	Academic Vocabulary	Possible Instructional Resources	Differentiation
Unit 5: **Analyzing Mathematical Relationships**	• Mathematicians solve real-world problems using more than one strategy. • Mathematicians explain their thinking so others can understand them. • Mathematicians use correct mathematical language. • Mathematicians use relationships and patterns to make new understandings.	PS. 1 PS. 2 PS. 3 PS. 4 PS. 5 PS. 6 PS. 7 PS. 8	• Provide time for students to interact with problems involving addition and subtraction. • Provide time for students to verbalize addition and subtraction equations, relate equations they see to real-world problems and represent equations with drawings or objects. • Encourage students to share their math understandings verbally and on paper (i.e. drawing their understandings, using simple words, etc.). • Encourage students to answer the question: "what do you think about _____'s thinking?", "how do you think _____ came up with that?" etc. • Provide students with options in the tools they can use to investigate relationships. • Encourage students to explain why they choose and use specific math tools. • Use correct vocabulary to describe comparisons and answers. • Use the structure of the number system to make connections to addition and subtraction. • Look for patterns in the world and describe those patterns.	problem, solution, equation, explanation, math tools, patterns, structure, thinking, reasoning, comparisons	**Mentor Texts/Read Alouds** Turtle Splash! (Cathryn Falwell) Rooster's Off to see the World (Eric Carle) One Monkey Too Many (Jackie French Koller) Ten Sly Piranhas (William Wise) Math Fables (Greg Tang) Teeth, Tails, and tentacles **Professional Resources:** Go Math! Grab-and-Go Differentiated Centers Games For Math by Peggy Kaye Lake Shore Early Math Activity Jars Guided Math in Action Newton Math Exchanges Wedekind Math Workstations Diller Everyday Mathematics Math and Literature K-1 by Marilyn Burns & Stephanie Sheffield Math Reads: Making Math the Story Math Their Way Baratta-Lorton Developing Number Concepts Richardson Good Questions for Math Teaching Learning Math in the Primary Grades (Madison MSD) https://math.madison.k12.wi.us/files/math/LMPGcomplete.pdf	**Scaffolding Support (ELL; SPED; Striving Learners)** • Manipulatives • Counting partners • Picture Cards • Number Cards • Number Wall Chart • Picture Books • Hundreds charts • Math Journals **Possible Assessments/Evidence:** • Counting Interview • Kathy Richardson's Counting Assessment • Complete a Number grid • Shape interview • Math Journals • Reflections • Observations • Mathematicians' use of vocabulary • Exit slips • Fluency interview • Problem-Solving interview **Materials** • 10 frames • pattern blocks
Analyzing Relationships with Numbers	• Mathematicians use correct mathematical language to compare quantities and groups. • Mathematicians represent numbers in multiple ways. • Mathematicians use the structure of the number system to understand the value of two-digit numbers.	K.NS.3 K.NS.7 K.NS.8 K.NS.9 K.NS.10 K.NS.11	**New** • Find the number that is one more or one less than any whole number to 20. • Identify whether the number of objects in one group is greater than, less than or equal to the number of objects in another. • Represent the value of whole numbers between 10 and 20 as groups of tens and ones using objects and drawings. **Practice and Extend** • Compare the value of two whole numbers written as numerals within 20. • Separate sets of ten or fewer objects into equal groups.	greater than, less than, equal to, numerals, digits, numbers, groups, equal, tens, ones, comparisons,		

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Analyzing Relationships in Computation and Algebraic Thinking	• Mathematicians use concrete representations to understand addition. • Mathematicians represent numbers in more than one way. • Mathematicians apply the relationships between numbers to solve problems.	K.CA.1 K.CA.2 K.CA.3 K.CA.4	**New** • Find the number that makes five, given any number 1 – 4. • Begin to decompose numbers less than or equal to 5 into pairs of numbers in more than one way. **Practice and Extend** • Practice using objects, mental images, sounds, etc., to represent addition within 5.	addition, adding to, joining, combining, decompose, compose,		• counters • natural materials • geoboards • links • unifix cubes • attribute blocks • 100s Chart • Judy Clocks • pan balance • Double sided counters • Dominos • Rekenrek and Abacus • Dice
Analyzing Relationships in Geometry, Measurement and Data Analysis	• Mathematicians compare and contrast numbers, shapes, and attributes of objects. • Mathematicians find and explain interesting ways to sort and classify objects. • Mathematicians communicate about their understandings.	K.G.1 K.G.2 K.M.1 K.DA.1	**Practice and Extend** • Use correct vocabulary to describe the spatial relationships between geometric figures. • Compare and contrast two-dimensional geometric figures with three-dimensional geometric figures. • Use correct vocabulary to make direct comparisons of length, capacity, weight, and temperature. • Identify, sort and classify objects by size, number, and other attributes. • Identify objects that do not belong in a group and explain the reasoning used.	Inside, outside, between, above, below, near, far, under, over, up, down, behind, in front of, next to, to the left of, to the right of, length, capacity, weight, temperature, shorter, longer, taller, lighter, heavier, warmer, cooler, holds more, holds less, rectangle, square, circle, triangle, cube, cylinder, sphere, attribute		
Fluency and Maintenance	• Mathematicians practice what they already know in new situations to build better understandings.	K.NS.1 K.NS.6 K.M.2	**Practice and Extend** • Continue to practice counting to 50 by ones • Continue to practice counting to 100 by tens. • Continue practicing representing amounts with numerals 0 – 20. • Continue to practice reading number words. • Recognize sets of 1 – 10 objects in patterned arrangements without counting.	subitize, numeral, digit, number, number words		

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Quarter 3 Weeks 24-27	Essential Goals	Priority Standards	Skills	Academic Vocabulary	Possible Instructional Resources	Differentiation
Unit 6: **Creating Mathematical Understandings**	• Mathematicians solve real-world problems using more than one strategy. • Mathematicians explain their thinking so others can understand them. • Mathematicians use correct mathematical language. • Mathematicians use relationships and patterns to make new understandings.	PS. 1 PS. 2 PS. 3 PS. 4 PS. 5 PS. 6 PS. 7 PS. 8	• Provide time for students to interact with problems involving addition and subtraction. • Provide time for students to verbalize addition and subtraction equations, relate equations they see to real-world problems and represent equations with drawings or objects. • Encourage students to share their math understandings verbally and on paper (i.e. drawing their understandings, using simple words, etc.). • Encourage students to answer the question: "what do you think about _____'s thinking?", "how do you think _____ came up with that?" etc. • Provide students with options in the tools they can use to investigate relationships. • Encourage students to explain why they choose and use specific math tools. • Use correct vocabulary to describe comparisons and answers. • Use the structure of the number system to make connections to addition and subtraction. • Look for patterns in the world and describe those patterns.	problem, solution, equation, explanation, math tools, patterns, structure, thinking, reasoning, comparisons	**Mentor Texts/Read Alouds** Turtle Splash! (Cathryn Falwell) Rooster's Off to see the World (Eric Carle) One Monkey Too Many (Jackie French Koller) Ten Sly Piranhas (William Wise) Math Fables (Greg Tang) Teeth, Tails, and tentacles **Professional Resources:** Go Math! Grab-and-Go Differentiated Centers Games For Math by Peggy Kaye Lake Shore Early Math Activity Jars Guided Math in Action Newton Math Exchanges Wedekind Math Workstations Diller Everyday Mathematics Math and Literature K-1 by Marilyn Burns & Stephanie Sheffield Math Reads: Making Math the Story Math Their Way Baratta-Lorton Developing Number Concepts Richardson Good Questions for Math Teaching Learning Math in the Primary Grades (Madison MSD) https://math.madison.k12.wi.us/files/math/LMPGcomplete.pdf	**Scaffolding Support (ELL; SPED; Striving Learners)** • Manipulatives • Counting partners • Picture Cards • Number Cards • Number Wall Chart • Picture Books • Hundreds charts • Math Journals **Possible Assessments/Evidence:** • Counting Interview • Kathy Richardson's Counting Assessment • Complete a Number grid • Shape interview • Math Journals • Reflections • Observations • Mathematicians' use of vocabulary • Exit slips • Fluency interview • Problem-Solving interview **Materials** • 10 frames • pattern blocks • counters • natural materials • geoboards • links • unifix cubes
Creating Understandings with Numbers	• Mathematicians use correct mathematical language to compare quantities and groups. • Mathematicians represent numbers in multiple ways. • Mathematicians use the structure of the number system to understand the value of two-digit numbers.	K.NS.7 K.NS.8 K.NS.9 K.NS.10 K.NS.11	**New** • Explain why the number of objects in one group is greater than, less than, or equal to the number of objects in another. **Practice and Extend** • Compare the value of two whole numbers written as numerals within 20. • Separate sets of ten or fewer objects into equal groups. • Represent the value of whole numbers between 10 and 20 as groups of tens and ones using objects and drawings.	greater than, less than, equal to, numerals, digits, numbers, groups, equal, tens, ones, comparisons,		
Creating Understandings with Computation and Algebraic Thinking	• Mathematicians use concrete representations to understand addition and subtraction. • Mathematicians make connections between concrete representations and algebraic representations of problems involving addition and subtraction. • Mathematicians represent numbers in more than one way. • Mathematicians apply the relationships between numbers to solve problems.	K.CA.2 K.CA.3 K.CA.4 K.CA.5	**New** • Decompose numbers less than or equal to ten into pairs of numbers in more than one way. • Record pairs of numbers that make numbers less than or equal to 10. • Introduce subtraction within 5 (use objects, mental images, sounds, etc.). **Practice and Extend** • Create and extend simple repeating and growing patterns.	addition, subtraction, adding to, joining, combining, separating, subtracting from, decompose, compose,		

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Creating Understandings in Geometry, Measurement and Data Analysis	• Mathematicians use geometric figures to make new geometric figures. • Mathematicians use everyday objects to create geometric figures. • Mathematicians use calendars and clocks to understand concepts of time.	K.G.3 K.G.4 K.M.2	**New** • Compose shapes from objects. • Compose simple shapes to form larger shapes. **Practice and Extend** • Understand and use correctly concepts of time (morning, afternoon, evening, today, yesterday, tomorrow, day, week, month, and year). • Understand that clocks and calendars are tools that measure time.	morning, afternoon, evening, today, yesterday, tomorrow, day week, month, year, digital clocks, analog clocks, calendar, rectangle, square, circle, triangle, cube, cylinder, sphere		• attribute blocks • 100s Chart • Judy Clocks • pan balance • Double sided counters • Dominos • Rekenrek and Abacus • Dice
Fluency and Maintenance	• Mathematicians practice what they already know in new situations to build better understandings.	K.NS.1 K.NS.2 K.NS.6	**Practice and Extend** • Practice counting to 70 by ones. • Continue to practice counting to 100 by tens. • Continue practicing representing amounts with numerals 0 – 20. • Recognize sets of 1 – 10 objects in patterned arrangements without counting.	subitize, numeral, digit, number, number words		

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Essential Goals for Quarter 4:	**Questions Students Will Answer:**
Mathematicians engage in hands-on, minds-on, interactive learning. Mathematicians make sense of problems and persevere in solving them. Mathematicians confidently make connections across the curriculum and the world around them. Mathematicians are empowered to talk like mathematicians. Mathematicians progress from concrete to abstract reasoning. Mathematicians make connections between equations, numerical representations, and real-world problems.	In what ways do I decompose numbers in the real world? How can I represent numbers most efficiently using place value? How can I create 3-dimensional shapes using more than one shape? How are addition and subtraction related? Why is ten important? Where do we see ten in the real world? How many ways can I represent ten?

Quarter 4 Weeks 28-31	Essential Goals	Priority Standards	Skills	Academic Vocabulary	Possible Instructional Resources	Differentiation
Unit 7: **Evaluating Mathematical Understandings**	• Mathematicians understand and solve real-world problems. • Mathematicians explain their reasoning. • Mathematicians use tools to understand mathematical relationships. • Mathematicians use correct mathematical vocabulary when describing relationships. • Mathematicians look for relationships and patterns in their world.	PS. 1 PS. 3 PS. 5 PS. 8	• Provide contextual problems and time for mathematicians to understand and solve problems involving counting, comparing, patterns, and addition. • Provide time for students to look for relationships and repeated patterns in the number system. • Encourage students to share their math understandings verbally and on paper (i.e. drawing their understandings, using simple words, etc.). • Encourage students to answer the question: "what do you think about _____'s thinking?", "how do you think _____ came up with that?" etc. • Provide students with options in the tools they can use to investigate relationships. • Encourage students to explain why they choose and use specific math tools.	problem, solution, equation, explanation, math tools, patterns, structure, thinking, reasoning, comparisons	**Mentor Texts/Read Alouds** ...98,99,100! Ready or Not, Here I Come! Let's Count to 100! By Masayuki Sebe **Professional Resources:** Go Math! Grab-and-Go Differentiated Centers Games For Math by Peggy Kaye Lake Shore Early Math Activity Jars Guided Math in Action Newton Math Exchanges Wedekind Math Workstations Diller Everyday Mathematics Math and Literature K-1 by Marilyn Burns & Stephanie Sheffield Math Reads: Making Math the Story Math Their Way Baratta-Lorton Developing Number Concepts Richardson Good Questions for Math Teaching Learning Math in the Primary Grades (Madison MSD) https://math.madison.k12.wi.us/files/math/LMPGcomplete.pdf	**Scaffolding Support (ELL; SPED; Striving Learners)** • Manipulatives • Counting partners • Picture Cards • Number Cards • Number Wall Chart • Picture Books • Hundreds charts • Math Journals **Possible Assessments/Evidence:** • Counting Interview • Kathy Richardson's Counting Assessment • Complete a Number grid • Shape interview • Math Journals • Reflections • Observations • Mathematicians' use of vocabulary • Exit slips • Fluency interview • Problem-Solving interview **Materials** • 10 frames • pattern blocks • counters
Evaluating Understandings with Numbers	• Mathematicians spend time manipulating objects to explore and understand relationships between numbers, quantities and cardinality. • Mathematicians explore and understand ways to decompose numbers into equal groups. • Mathematicians use numbers lines to assist in understanding how numbers relate to each other. • Mathematicians use precise vocabulary when describing mathematical relationships.	K.NS.1 K.NS.3 K.NS.5 K.NS.7 K.NS.8 K.NS.9 K.NS.10	**New** • Begin to count to 100 by ones. • Count on from any number less than 20. **Practice and Extend** • Count to 100 by tens. • Find the number that is one more than any whole number up to 20 and explain how you know. • Count up to 20 objects arranged in a line, rectangular array, or circle. • Count 10 objects in a scattered configuration. • Compare the number of objects in one group with the number of objects in another group using more than one strategy (i.e. counting, matching, etc.). • Compare values of two numbers written as numerals up to 20 and explain how you know. • Separate sets of ten or fewer objects into equal groups.	number names, one more, one less, array, circle, line, scattered, more than, less than, equal to, equal groups, number line, number chart, shape names,		

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Evaluating Understandings with Computation and Algebraic Thinking	• Mathematicians use concrete representations for addition and subtraction. • Mathematicians understand addition as putting together and adding to. • Mathematicians understand how to compose numbers. • Mathematicians describe patterns in various ways.	K.CA.1 K.CA.2 K.CA.4 K.CA.5	**New** • Extend subtraction to within 10, explaining strategies used. • Help students see the relationship between real-world situations and adding and subtracting. • Identify the rule for repeating and growing patterns with numbers and shapes. **Practice and Extend** • Practice adding within 10, explaining strategies used. • Ask students how to make any number less than or equal to 10 given any number of objects 1 to 9 (use objects and drawings to reinforce this). • Create and extend repeating and growing patterns with numbers and shapes.	addition, subtraction, equation, equal, more, less, joining, separating, pattern, rule, growing, repeating, is equal to, has the same value as,		• natural materials • geoboards • links • unifix cubes • attribute blocks • 100s Chart • Judy Clocks • pan balance • Double sided counters • Dominos • Rekenrek and Abacus • Dice
Evaluating Understandings in Geometry, Measurement and Data Analysis	• Mathematicians describe the position of objects based on their relationship to other objects. • Mathematicians compare and contrast attributes of two- and three-dimensional objects. • Mathematicians understand the relationships between concepts of time. • Mathematicians use precise language when describing relationships.	K.G.1 K.G.2 K.G.3 K.G.4 K.M.1 K.M.2 K.DA.1	**New** • Begin to create three-dimensional shapes from objects **Practice** • Use positional words to describe the position of objects in relation to other objects. • Compare three-dimensional shapes in different sizes and orientations. • Make direct comparisons of length, capacity, weight, and temperature of various objects found in everyday life. • Group objects by size, number and other attributes. • Identify objects that do not belong to a group and explain why the objects do not belong.	inside, outside, between, above, below, near, far, under, over, up, down, behind, in front of, next to, to the left of, to the right of, shorter, longer, taller, lighter, heavier, warmer, cooler, holds more, holds less		
Fluency and Maintenance	• Mathematicians practice what they already know in new situations to build better understandings.	K.NS.1 K.NS.2 K.NS.4 K.NS.6	**Practice** • Continue to practice counting to 70 by ones • Continue to practice counting to 100 by tens. • Continue practicing representing amounts with numerals 0 to 20. • Continue to practice reading number words. • Recognize sets of 1 to 10 objects in patterned arrangements without counting.	subitize, numeral, digit, number, "ten", number words		

Kindergarten Mathematics – Scope and Sequence – MSD of Pike Township

Quarter 4 Weeks 32-36	Essential Goals	Priority Standards	Skills	Academic Vocabulary	Possible Instructional Resources	Differentiation
Unit 8: **Applying Mathematical Understandings to New Relationships**	• Mathematicians understand and solve real-world problems. • Mathematicians explain their reasoning. • Mathematicians use tools to understand mathematical relationships. • Mathematicians use correct mathematical vocabulary when describing relationships. • Mathematicians look for relationships and patterns in their world.	PS. 1 PS. 3 PS. 5 PS. 8	• Provide contextual problems and time for mathematicians to understand and solve problems involving counting, comparing, patterns, and addition. • Provide time for students to look for relationships and repeated patterns in the number system. • Encourage students to share their math understandings verbally and on paper (i.e. drawing their understandings, using simple words, etc.). • Encourage students to answer the question: "what do you think about _____'s thinking?", "how do you think _____ came up with that?" etc. • Provide students with options in the tools they can use to investigate relationships. • Encourage students to explain why they choose and use specific math tools.	problem, solution, equation, explanation, math tools, patterns, structure, thinking, reasoning, comparisons	**Mentor Texts/Read Alouds** …98,99,100! Ready or Not, Here I Come! Let's Count to 100! By Masayuki Sebe **Professional Resources:** Go Math! Grab-and-Go Differentiated Centers Games For Math by Peggy Kaye Lake Shore Early Math Activity Jars Guided Math in Action Newton Math Exchanges Wedekind Math Workstations Diller Everyday Mathematics Math and Literature K-1 by Marilyn Burns & Stephanie Sheffield Math Reads: Making Math the Story Math Their Way Baratta-Lorton Developing Number Concepts Richardson Good Questions for Math Teaching Learning Math in the Primary Grades (Madison MSD) https://math.madison.k12.wi.us/files/math/LMPGcomplete.pdf	• Manipulatives • Counting partners • Picture Cards • Number Cards • Number Wall Chart • Picture Books • Hundreds charts • Math Journals **Possible Assessments/Evidence:** • Counting Interview • Kathy Richardson's Counting Assessment • Complete a Number grid • Shape interview • Math Journals • Reflections • Observations • Mathematicians' use of vocabulary • Exit slips • Fluency interview • Problem-Solving interview **Materials** • 10 frames • pattern blocks • counters • natural materials • geoboards • links • unifix cubes • attribute blocks • 100s Chart • Judy Clocks
Applying Mathematical Understandings with Numbers	• Mathematicians spend time manipulating objects to explore and understand relationships between numbers, quantities and cardinality. • Mathematicians explore and understand ways to decompose numbers into equal groups. • Mathematicians use numbers lines to assist in understanding how numbers relate to each other. • Mathematicians use precise vocabulary when describing mathematical relationships.	K.NS.3 K.NS.5 K.NS.7 K.NS.8 K.NS.9 K.NS.10 K.NS.11	**Practice and Extend** • Find the number that is one more than any whole number up to 20 and explain how you know. • Count 10 objects in a scattered configuration. • Compare the number of objects in one group with the number of objects in another group using more than one strategy (i.e. counting, matching, etc.). • Compare values of two numbers written as numerals up to 20 and explain how you know. • Separate sets of ten or fewer objects into equal groups. • Represent the value of whole numbers between 10 and 20 as groups of tens and ones using objects and drawings.	number names, one more, one less, array, circle, line, scattered, more than, less than, equal to, equal groups, number line, number chart, shape names,		
Applying Mathematical Understandings in Computation and Algebraic Thinking	• Mathematicians use concrete representations for addition. • Mathematicians understand addition as putting together and adding to. • Mathematicians understand how to compose numbers. • Mathematicians describe patterns in various ways.	K.CA.2 K.CA.3 K.CA.4 K.CA.5	**Practice and Extend** • Solve real-world problems involving addition and subtraction within 10, explaining strategies used. • Ask students how to make 10 given any number of objects 1 to 9 (use objects and drawings to reinforce this). • Help students make connections between real-world situations and adding and subtracting. • Create and extend repeating and growing patterns with numbers and shapes. • Explain and give the rule for repeating and growing patterns with numbers and shapes.	addition, subtraction, equation, equal, more, less, joining, separating, pattern, rule, growing, repeating, is equal to, has the same value as,		

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Applying Mathematical Understandings in Geometry, Measurement and Data Analysis	• Mathematicians describe the position of objects based on their relationship to other objects. • Mathematicians compare and contrast attributes of two- and three-dimensional objects. • Mathematicians understand the relationships between concepts of time. • Mathematicians use precise language when describing relationships.	K.G.1 K.G.2 K.G.3 K.G.4 K.M.2 K.DA.1	**Practice and Extend** • Use positional words to describe the position of objects in relation to other objects. • Compare three-dimensional shapes in different sizes and orientations. • Create three-dimensional shapes from objects • Group objects by size, number and other attributes and explain how the objects fit in the same group. • Identify objects that do not belong to a group and explain why they do not belong.	inside, outside, between, above, below, near, far, under, over, up, down, behind, in front of, next to, to the left of, to the right of, shorter, longer, taller, lighter, heavier, warmer, cooler, holds more, holds less		• pan balance • Double sided counters • Dominos • Rekenrek and Abacus • Dice
Fluency and Maintenance	• Mathematicians practice what they already know in new situations to build better understandings.	K.NS.1 K.NS.2 K.NS.6	**Practice and Extend** • Continue to practice counting to 100 by ones and tens. • Continue practicing representing amounts with numerals 0 to 20. • Continue to practice reading number words and connecting those words to the quantities they represent. • Recognize sets of 1 to 10 objects in patterned arrangements without counting.	subitize, numeral, digit, number, number words		

NUMBER SENSE	
K.NS.1	Count to at least 100 by ones and tens and count on by one from any number.
K.NS.2	Write whole numbers from zero to 20 and recognize number words from zero to 10. Represent a number of objects with a written numeral zero to 20 (with zero representing a count of no objects).
K.NS.3	Find the number that is one more than or one less than any whole number up to 20.
K.NS.4	Say the number names in standard order when counting objects, pairing each object with one and only one number name and each number name with one and only one object. Understand that the last number describes the number of objects counted and that the number of objects is the same regardless of their arrangement or the order in which they were counted.
K.NS.5	Count up to 20 objects arranged in a line, a rectangular array, or a circle. Count up to 10 objects in a scattered configuration. Count out the number of objects, given a number from one to 20.
K.NS.6	Recognize sets of one to 10 objects in patterned arrangements and tell how many without counting.
K.NS.7	Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group (e.g. by using matching and counting strategies).
K.NS.8	Compare the values of two numbers from 1 to 20 presented as written numerals.
K.NS.9	Correctly use the words for comparison, including: one and many; none, some and all; more and less; most and least; and equal to, more than and less than.
K.NS.10	Separate sets of 10 or fewer objects into equal groups.
K.NS.11	Develop initial understandings of place value and the base 10 number system by showing equivalent forms of whole numbers from 10 to 20 as groups of tens and ones using objects and drawings.

COMPUTATION AND ALGEBRAIC THINKING	
K.CA.1	Use objects, drawings, mental images, sounds, etc., to represent addition and subtraction within 10.
K.CA.2	Solve real-world problems that involve addition and subtraction within 10 (e.g., by using objects or drawings to represent the problem).

K.CA.3	Use objects, drawings, etc., to decompose numbers less than or equal to 10 into pairs in more than one way, and record each decomposition with a drawing or an equation (e.g., 5 = 2 + 3 and 5 = 4 + 1). [In Kindergarten, students should see equations and be encouraged to trace them, however, writing equations is not required.]
K.CA.4	Find the number that makes 10 when added to the given number for any number from one to nine (e.g., by using objects or drawings), and record the answer with a drawing or an equation.
K.CA.5	Create, extend, and give an appropriate rule for simple repeating and growing patterns with numbers and shapes.

GEOMETRY	
K.G.1	Describe the positions of objects and geometric shapes in space using the terms inside, outside, between, above, below, near, far, under, over, up, down, behind, in front of, next to, to the left of and to the right of.
K.G.2	Compare two- and three-dimensional shapes in different sizes and orientations, using informal language to describe their similarities, differences, parts (e.g., number of sides and vertices/"corners") and other attributes (e.g., having sides of equal length).
K.G.3	Model shapes in the world by composing shapes from objects (e.g., sticks and clay balls) and drawing shapes.
K.G.4	Compose simple geometric shapes to form larger shapes (e.g., create a rectangle composed of two triangles).

MEASUREMENT	
K.M.1	Make direct comparisons of the length, capacity, weight, and temperature of objects, and recognize which object is shorter, longer, taller, lighter, heavier, warmer, cooler, or holds more.
K.M.2	Understand concepts of time, including: morning, afternoon, evening, today, yesterday, tomorrow, day, week, month, and year. Understand that clocks and calendars are tools that measure time.

DATA ANALYSIS	
K.DA.1	Identify, sort, and classify objects by size, number, and other attributes. Identify objects that do not belong to a particular group and explain the reasoning used.

Number Sense		
Kindergarten	**Grade 1**	**Grade 2**
K.NS.1: Count to at least 100 by ones and tens and count on by one from any number.	1.NS.1: Count to at least 120 by ones, fives, and tens from any given number. In this range, read and write numerals and represent a number of objects with a written numeral.	2.NS.1: Count by ones, twos, fives, tens, and hundreds up to at least 1,000 from any given number.
	1.NS.3: Match the ordinal numbers first, second, third, etc., with an ordered set up to 10 items.	2.NS.4: Match the ordinal numbers first, second, third, etc., with an ordered set up to 30 items.
K.NS.2: Write whole numbers from 0 to 20 and recognize number words from 0 to 10. Represent a number of objects with a written numeral 0-20 (with 0 representing a count of no objects).		2.NS.2: Read and write whole numbers up to 1,000. Use words, models, standard form and expanded form to represent and show equivalent forms of whole numbers up to 1,000.
K.NS.3: Find the number that is one more than or one less than any whole number up to 20.	1.NS.5: Find mentally 10 more or 10 less than a given two-digit the number without having to count, and explain the thinking process used to get the answer.	
K.NS.4: Say the number names in standard order when counting objects, pairing each object with one and only one number name and each number name with one and only one object. Understand that the last number name said describes the number of objects counted and that the number of objects is the same regardless of their arrangement or the order in which they were counted.		
K.NS.5: Count up to 20 objects arranged in a line, a rectangular array, or a circle. Count up to 10 objects in a scattered configuration. Count out the number of objects, given a number from 1 to 20.		
K.NS.6: Recognize sets of 1 to 10 objects in patterned arrangements and tell how many without counting.		
K.NS.7: Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group (e.g., by using matching and counting strategies).		2.NS.3: Plot and compare whole numbers up to 1,000 on a number line.
K.NS.8: Compare the values of two numbers from 1 to 20 presented as written numerals.	1.NS.4: Use place value understanding to compare two two-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons with the symbols >, =, and <.	
K.NS.9: Use correctly the words for comparison, including: one and many; none, some and all; more and less; most and least; and equal to, more than and less than.		2.NS.7: Use place value understanding to compare two three-digit numbers based on meanings of the hundreds, tens, and ones digits, using >, =, and < symbols to record the results of comparisons.
K.NS.10: Separate sets of ten or fewer objects into equal groups.		2.NS.5: Determine whether a group of objects (up to 20) has an odd or even number of members (e.g., by placing that number of objects in two groups of the same size and recognizing that for even numbers no object will be left over and for odd numbers one object will be left over, or by pairing objects or counting them by 2s).
K.NS.11: Develop initial understandings of place value and the base 10 number system by showing equivalent forms of whole numbers from 10 to 20 as groups of tens and ones using objects and drawings.	1.NS.2: Understand that 10 can be thought of as a group of ten ones — called a "ten." Understand that the numbers from 11 to 19 are composed of a ten and one, two, three, four, five, six, seven, eight, or nine ones. Understand that the numbers 10, 20, 30, 40, 50, 60, 70, 80, 90 refer to one, two, three, four, five, six, seven, eight, or nine tens (and 0 ones).	2.NS.6: Understand that the three digits of a three-digit number represent amounts of hundreds, tens, and ones (e.g., 706 equals 7 hundreds, 0 tens, and 6 ones). Understand that 100 can be thought of as a group of ten tens — called a "hundred." Understand that the numbers 100, 200, 300, 400, 500, 600, 700, 800, 900 refer to one, two, three, four, five, six, seven, eight, or nine hundreds (and 0 tens and 0 ones).
	1.NS.6: Show equivalent forms of whole numbers as groups of tens and ones, and understand that the individual digits of a two-digit number represent amounts of tens and ones.	

<table>
<tr><th colspan="3">Computation and Algebraic Thinking</th></tr>
<tr><th>Kindergarten</th><th>Grade 1</th><th>Grade 2</th></tr>
<tr><td rowspan="2">K.CA.1: Use objects, drawings, mental images, sounds, etc., to represent addition and subtraction within 10.</td><td>1.CA.1: Demonstrate fluency with addition facts and the corresponding subtraction facts within 20. Use strategies such as counting on; making ten (e.g., 8 + 6 = 8 + 2 + 4 = 10 + 4 = 14); decomposing a number leading to a ten (e.g., 13 – 4 = 13 – 3 – 1 = 10 – 1 = 9); using the relationship between addition and subtraction (e.g., knowing that 8 + 4 = 12, one knows 12 – 8 = 4); and creating equivalent but easier or known sums (e.g., adding 6 + 7 by creating the known equivalent 6 + 6 + 1 = 12 + 1 = 13). Understand the role of 0 in addition and subtraction.</td><td>2.CA.1: Add and subtract fluently within 100.</td></tr>
<tr><td>1.CA.5: Add within 100, including adding a two-digit number and a one-digit number, and adding a two-digit number and a multiple of 10, using models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; describe the strategy and explain the reasoning used. Understand that in adding two-digit numbers, one adds tens and tens, ones and ones, and that sometimes it is necessary to compose a ten.</td><td>2.CA.4: Add and subtract within 1000, using models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; describe the strategy and explain the reasoning used. Understand that in adding or subtracting three-digit numbers, one adds or subtracts hundreds and hundreds, tens and tens, ones and ones, and that sometimes it is necessary to compose or decompose tens or hundreds.</td></tr>
<tr><td rowspan="3">K.CA.2: Solve real-world problems that involve addition and subtraction within 10 (e.g., by using objects or drawings to represent the problem).</td><td>1.CA.2: Solve real-world problems involving addition and subtraction within 20 in situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all parts of the addition or subtraction problem (e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem).</td><td>2.CA.2: Solve real-world problems involving addition and subtraction within 100 in situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all parts of the addition or subtraction problem (e.g., by using drawings and equations with a symbol for the unknown number to represent the problem). Use estimation to decide whether answers are reasonable in addition problems.</td></tr>
<tr><td>1.CA.4: Solve real-world problems that call for addition of three whole numbers whose sum is within 20 (e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem).</td><td rowspan="2">2.CA.3: Solve real-world problems involving addition and subtraction within 100 in situations involving lengths that are given in the same units (e.g., by using drawings, such as drawings of rulers, and equations with a symbol for the unknown number to represent the problem).</td></tr>
<tr><td>1.CA.3: Create a real-world problem to represent a given equation involving addition and subtraction within 20.</td></tr>
<tr><td>K.CA.3: Use objects, drawings, etc., to decompose numbers less than or equal to 10 into pairs in more than one way, and record each decomposition with a drawing or an equation (e.g., 5 = 2 + 3 and 5 = 4 + 1). [In Kindergarten, students should see equations and be encouraged to trace them, however, writing equations is not required.]</td><td rowspan="2">1.CA.6: Understand the meaning of the equal sign, and determine if equations involving addition and subtraction are true or false (e.g., Which of the following equations are true and which are false? 6 = 6, 7 = 8 – 1, 5 + 2 = 2 + 5, 4 + 1 = 5 + 2).</td><td>2.CA.5: Use addition to find the total number of objects arranged in rectangular arrays with up to 5 rows and up to 5 columns; write an equation to express the total as a sum of equal groups.</td></tr>
<tr><td>K.CA.4: Find the number that makes 10 when added to the given number for any number from 1 to 9 (e.g., by using objects or drawings), and record the answer with a drawing or an equation.</td><td>2.CA.6: Show that the order in which two numbers are added (commutative property) and how the numbers are grouped in addition (associative property) will not change the sum. These properties can be used to show that numbers can be added in any order.</td></tr>
<tr><td>K.CA.5: Create, extend, and give an appropriate rule for simple repeating and growing patterns with numbers and shapes.</td><td>1.CA.7: Create, extend, and give an appropriate rule for number patterns using addition within 100.</td><td>2.CA.7: Create, extend, and give an appropriate rule for number patterns using addition and subtraction within 1000.</td></tr>
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K-2 Math Standards Vertical Alignment (2014 Language)

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<tr><th colspan="3">Geometry</th></tr>
<tr><th>Kindergarten</th><th>Grade 1</th><th>Grade 2</th></tr>
<tr><td>K.G.1: Describe the positions of objects and geometric shapes in space using the terms inside, outside, between, above, below, near, far, under, over, up, down, behind, in front of, next to, to the left of and to the right of.</td><td colspan="2"></td></tr>
<tr><td rowspan="2">K.G.2: Compare two- and three-dimensional shapes in different sizes and orientations, using informal language to describe their similarities, differences, parts (e.g., number of sides and vertices/"corners") and other attributes (e.g., having sides of equal length).</td><td>1.G.1: Identify objects as two-dimensional or three-dimensional. Classify and sort two-dimensional and three-dimensional objects by shape, size, roundness and other attributes. Describe how two-dimensional shapes make up the faces of three-dimensional objects.</td><td rowspan="2">2.G.1: Identify, describe, and classify two- and three-dimensional shapes (triangle, square, rectangle, cube, right rectangular prism) according to the number and shape of faces and the number of sides and/or vertices. Draw two-dimensional shapes.</td></tr>
<tr><td>1.G.2: Distinguish between defining attributes of two- and three-dimensional shapes (e.g., triangles are closed and three-sided) versus non-defining attributes (e.g., color, orientation, overall size). Create and draw two-dimensional shapes with defining attributes.</td></tr>
<tr><td>K.G.3: Model shapes in the world by composing shapes from objects (e.g., sticks and clay balls) and drawing shapes.</td><td rowspan="2">1.G.3: Use two-dimensional shapes (rectangles, squares, trapezoids, triangles, half-circles, and quarter-circles) or three-dimensional shapes (cubes, right rectangular prisms, right circular cones, and right circular cylinders) to create a composite shape, and compose new shapes from the composite shape. [In grade 1, students do not need to learn formal names such as "right rectangular prism."]</td><td>2.G.2: Create squares, rectangles, triangles, cubes, and right rectangular prisms using appropriate materials.</td></tr>
<tr><td>K.G.4: Compose simple geometric shapes to form larger shapes (e.g., create a rectangle composed of two triangles).</td><td>2.G.3: Investigate and predict the result of composing and decomposing two- and three-dimensional shapes.</td></tr>
<tr><td rowspan="2"></td><td rowspan="2">1.G.4: Partition circles and rectangles into two and four equal parts; describe the parts using the words halves, fourths, and quarters; and use the phrases half of, fourth of, and quarter of. Describe the whole as two of, or four of, the parts. Understand for partitioning circles and rectangles into two and four equal parts that decomposing into equal parts creates smaller parts.</td><td>2.G.4: Partition a rectangle into rows and columns of same-size (unit) squares and count to find the total number of same-size squares.</td></tr>
<tr><td>2.G.5: Partition circles and rectangles into two, three, or four equal parts; describe the shares using the words halves, thirds, half of, a third of, etc.; and describe the whole as two halves, three thirds, four fourths. Recognize that equal parts of identical wholes need not have the same shape.</td></tr>
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Measurement		
Kindergarten	**Grade 1**	**Grade 2**
K.M.1: Make direct comparisons of the length, capacity, weight, and temperature of objects, and recognize which object is shorter, longer, taller, lighter, heavier, warmer, cooler, or holds more.	**1.M.1**: Use direct comparison or a nonstandard unit to compare and order objects according to length, area, capacity, weight, and temperature.	**2.M.1:** Describe the relationships among inch, foot, and yard. Describe the relationship between centimeter and meter.
		2.M.2: Estimate and measure the length of an object by selecting and using appropriate tools, such as rulers, yardsticks, meter sticks, and measuring tapes to the nearest inch, foot, yard, centimeter and meter.
		2.M.3: Understand that the length of an object does not change regardless of the units used. Measure the length of an object twice using length units of different lengths for the two measurements. Describe how the two measurements relate to the size of the unit chosen.
		2.M.4: Estimate and measure volume (capacity) using cups and pints.
K.M.2: Understand concepts of time, including: morning, afternoon, evening, today, yesterday, tomorrow, day, week, month, and year. Understand that clocks and calendars are tools that measure time.	**1.M.2**: Tell and write time to the nearest half-hour and relate time to events (before/after, shorter/longer) using analog clocks. Understand how to read hours and minutes using digital clocks.	**2.M.5:** Tell and write time to the nearest five minutes from analog clocks, using a.m. and p.m. Solve real-world problems involving addition and subtraction of time intervals on the hour or half hour.
		2.M.6: Describe relationships of time, including: seconds in a minute; minutes in an hour; hours in a day; days in a week; and days, weeks, and months in a year.
	1.M.3: Find the value of a collection of pennies, nickels, and dimes.	**2.M.7:** Find the value of a collection of pennies, nickels, dimes, quarters and dollars.

Data Analysis		
Kindergarten	**Grade 1**	**Grade 2**
K.DA.1: Identify, sort, and classify objects by size, number, and other attributes. Identify objects that do not belong to a particular group and explain the reasoning used.	1.DA.1: Organize and interpret data with up to three choices (What is your favorite fruit? apples, bananas, oranges); ask and answer questions about the total number of data points, how many in each choice, and how many more or less in one choice compared to another.	2.DA.1: Draw a picture graph (with single-unit scale) and a bar graph (with single-unit scale) to represent a data set with up to four choices (What is your favorite color? red, blue, yellow, green). Solve simple put-together, take-apart, and compare problems using information presented in the graphs.