2nd Grade 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

Mathematics Content

As you work with your students, please remember the following:

- *Students are expected to **apply** the math they previously learned as they progress through the year and to the next level.*
- *Math content builds on previous lessons and years, but students learn in many different ways and take many different paths to learn concepts. Provide students with many opportunities throughout your day to tackle and master math content in their world.*
- *The workshop model for Reading and Writing is applicable to Mathematics as well. Use your knowledge of creating mini-lessons, allowing for independent and collaborative work time (problem solving), small group instruction, conferring, etc. to guide your math instruction.*
- *All students are mathematicians. Find ways to allow our students to make true connections with math content.*
- *Math instruction should incorporate reading and writing.*

Process Standards for Mathematics

As you work with your students, please remember the following:

- *The Process Standards for Mathematics are the "how" when delivering mathematics instruction.*
- *The Process Standards for Mathematics 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.***

Number Work

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)
- Fluency expectations:
  - ***Fluently Add and Subtract within 100.***
  - ***Count by ones, twos, fives, tens, and hundreds up to at least 1,000 from any given number.***

Each Component Includes:

Essential Goals	Priority Standards	Strategies/Skills	Academic Vocabulary	Possible Instructional Resources	Scaffolding 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.	Professional and mentor text ideas are suggested in this section. Additionally, this is where you will find your connection to the Go Math resources. 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 is provided. Please use your available resources to differentiate for students. Ask your building resource teachers for assistance if needed.

	Quarter 1 Intro to Number Sense (Introducing/Naming)	Quarter 2 Practicing Number Sense (Relationship)	Quarter 3 Using Number Sense (Understanding)	Quarter 4 Extending Number Sense (Application)
2.NS.1	• Count by ones, twos, fives, tens up to 200	• Count by ones, twos, fives, tens up to 200 from any given number	• Count by ones, twos, fives, tens up to 1,000 • Count by hundreds up to 1,000	• Count by ones, twos, fives, tens, and hundreds up to at least 1,000 from a given number.
2.NS.2	• Read and write whole numbers up to 200. • Use words, models, standard form, and expanded form to represent and show equivalent forms of whole numbers up to 200.	• Read and write whole numbers up to 200. • Use words, models, standard form, and expanded form to represent and show equivalent forms of whole numbers up to 200.	• Begin to read and write whole numbers up to 1,000. • Begin to use words, models, standard form, and expanded form to represent and show equivalent forms of whole numbers up to 1,000.	• 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.
2.NS.3	• Read and write whole numbers up to 120. • Use words, models, stand form, and expanded form to represent and show equivalent forms of whole numbers up to 120.	• Read and write whole numbers up to 200. • Use words, models, stand form, and expanded form to represent and show equivalent forms of whole numbers up to 200.	• Begin to read and write whole numbers up to 1,000. • Begin to use words, models, stand form, and expanded form to represent and show equivalent forms of whole numbers up to 1,000.	• Read and write whole numbers up to 1,000. • Use words, models, stand form, and expanded form to represent and show equivalent forms of whole numbers up to 1,000.
2.NS.4	• Begin to match the ordinal numbers first, second, third, etc., with an ordered set up to 30 items.	• Continue to practice matching the ordinal numbers first, second, third, etc., with an ordered set up to 30 items.	• Continue to practice matching the ordinal numbers first, second, third, etc., with an ordered set up to 30 items.	• Match the ordinal numbers first, second, third, etc., with an ordered set up to 30 items.
2.NS.5	• Begin to determine whether a group of objects (up to 20) has an odd or even number of members. • Begin to recognize that objects placed in two groups of the same size have no objects left over for even numbers and one object left over for odd numbers. • Begin to pair objects and count by 2s	• Continue to practice determining whether a group of objects (up to 20) has an odd or even number of members. • Continue to practice recognizing that objects placed in two groups of the same size have no objects left over for even numbers and one object left over for odd numbers. • Continue to practice pairing objects and count by 2s	• Continue to practice determining whether a group of objects (up to 20) has an odd or even number of members. • Continue to practice recognizing that objects placed in two groups of the same size have no objects left over for even numbers and one object left over for odd numbers. • Continue to practice pairing objects and count by 2s	• Determine whether a group of objects (up to 20) has an odd or even number of members. • Recognize that objects placed in two groups of the same size have no objects left over for even numbers and one object left over for odd numbers. • Pair objects and count by 2s.
2.NS.6	• Understand that the two digits of a two-digit number represent amounts tens and ones (76 7 tens, and 6 ones). • Understand that 100 can be thought of as a group of ten tens — called a “hundred."	• Understand that the two digits of a two-digit number represent amounts tens and ones (76 7 tens, and 6 ones). • Understand that 100 can be thought of as a group of ten tens — called a “hundred."	• Begin to 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). • Begin to understand that 100 can be thought of as a group of ten tens — called a “hundred." • Begin to 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).	• 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).
2.NS.7	• Use place value understanding to compare two two-digit numbers based on meanings of the tens and ones digits, using >, =, and < symbols to record the results of comparisons.	• Use place value understanding to compare two two-digit numbers based on meanings of the tens and ones digits, using >, =, and < symbols to record the results of comparisons.	• Begin to 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.	• 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.

	Quarter 1 Intro to Computation and Algebraic Thinking (Introducing/Naming)	Quarter 2 Practicing Computation and Algebraic Thinking (Relationship)	Quarter 3 Using Computation and Algebraic Thinking (Understanding)	Quarter 4 Extending Computation and Algebraic Thinking (Application)
2.CA.1		• Begin to add and subtract fluently within 100	• Continue to practice adding and subtracting fluently within 100.	• Add and subtract fluently within 100.
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).	• 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). • Begin to use estimation to decide whether answers are reasonable in addition problems.	• 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.	• 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.
2.CA.3		• Begin to 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).	• 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).	• 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).
2.CA.4		• Add and subtract within 200, 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 two-digit numbers, one adds or subtracts tens and tens, ones and ones, and that sometimes it is necessary to compose or decompose tens.	• 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. • Begin to 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.	• 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.
2.CA.5	• Begin to use addition to find the total number of objects arranged in rectangular arrays with up to 5 rows and up to 5 columns. • Begin to write an equation to express the total as a sum of equal groups.	• 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.	• 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.	• 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.
2.CA.6	• Begin to understand and show that the order in which two 2 digit 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.	• 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.	• Begin to understand that the order in which two 3 digit 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.	• Show that the order in which two 3 digit 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.
2.CA.7	• Begin to create, extend, and give an appropriate rule for number patterns using addition and subtraction within 120.	• Create, extend, and give an appropriate rule for number patterns using addition and subtraction within 200.	• Begin to create, extend, and give an appropriate rule for number patterns using addition and subtraction within 1000.	• Create, extend, and give an appropriate rule for number patterns using addition and subtraction within 1000.

	Quarter 1 Intro to Geometry (Introducing/Naming)	Quarter 2 Practicing Geometry (Relationship)	Quarter 3 Using Geometry (Understanding)	Quarter 4 Extending Geometry (Application)
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.
2.G.2				• Create squares, rectangles, triangles, cubes, and right rectangular prisms using appropriate materials.
2.G.3				• Investigate and predict the result of composing and decomposing two- and three-dimensional shapes.
2.G.4		• Begin to partition a rectangle into rows and columns of same-size (unit) squares and count to find the total number of same-size squares.	• Continue to partition a rectangle into rows and columns of same-size (unit) squares and count to find the total number of same-size squares.	• Partition a rectangle into rows and columns of same-size (unit) squares and count to find the total number of same-size squares.
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. • Describe the whole as two halves, three thirds, four fourths. • Recognize that equal parts of identical wholes need not have the same shape.

	Quarter 1 Intro to Measurement (Introducing/Naming)	Quarter 2 Practicing Measurement (Relationship)	Quarter 3 Using Measurement (Understanding)	Quarter 4 Extending Measurement (Application)
2.M.1			• Begin to describe the relationships among inch, foot, and yard. • Begin to describe the relationship between centimeter and meter.	• Describe the relationships among inch, foot, and yard. • Describe the relationship between centimeter and meter.
2.M.2			• Begin to 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.	• 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			• Begin to 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. • Begin to describe how the two measurements relate to the size of the unit chosen.	• 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			• Begin to estimate and measure volume (capacity) using cups and pints.	• Estimate and measure volume (capacity) using cups and pints.
2.M.5		• Begin to tell and write time to the nearest five minutes from analog clocks, using a.m. and p.m. • Begin to solve real-world problems involving addition and subtraction of time intervals on the hour or half hour.	• 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.	• 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		• Begin to 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.	• 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.	• 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.
2.M.7		• Begin to find the value of a collection of pennies, nickels, dimes, quarters and dollars	• Find the value of a collection of pennies, nickels, dimes, quarters and dollars	• Find the value of a collection of pennies, nickels, dimes, quarters and dollars

	Quarter 1 Intro to Data Analysis (Introducing/Naming)	Quarter 2 Practicing Data Analysis (Relationship)	Quarter 3 Using Data Analysis (Understanding)	Quarter 4 Extending Data Analysis (Application)
2.DA.1		• Begin to 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). • Begin to solve simple put-together, take-apart, and compare problems using information presented in the graphs.	• Continue to practice drawing 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). • Continue to practice solving simple put-together, take-apart, and compare problems using information presented in the graphs.	• 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.

2nd Grade Mathematics – Scope and Sequence – MSD of Pike Township

Quarter 1 Week 1 – 6	Essential Goals	Priority Standards	Strategies/Skills	Academic Vocabulary	Possible Instructional Resources	Differentiation
Unit 1: Introducing your Math Block **Understanding Numbers**	• Mathematicians write about and share their thinking. • Mathematicians show their work. • Mathematicians ask questions of themselves, others, and the world around them. • Mathematicians find math ideas in their world. • Mathematicians build upon their initial understandings of number relationships and place value.	2.NS.1 2.NS.2 2.NS.3 2.NS.4 2.NS.5 2.NS.6 2.NS.7 2.CA.7	• Introduce procedures and routines. • Help students to see they are mathematicians. • Write about and discuss math concepts daily. • Reinforce there are multiple ways to find solutions to problems. • Count by ones, twos, fives and tens. • Use the counting on strategy to count on by twos, fives, tens, and hundreds from any given number up to 1,000. • Practice writing numbers in words, models, standard and expanded form. • Plot and compare numbers on a number line. • Use ordinal numbers (i.e., first, second, third, etc.) to describe an ordered set up to 30 items. • Develop strategies for determining whether a number (up to 20) is even or odd. • Understand the meaning of "hundred". • Decompose three-digit numbers into hundreds, tens, and ones. • Use place value understanding to compare two three-digit numbers using relational symbols (greater than, less than, equal to. • Create and identify a rule for a number pattern (e.g., skip counting by fives).	compare count back count on digits eighth equal to (=) even explain fewer fifth first fourth greater than (>) hundred less than (<) more ninth odd ones ordinal numbers second seventh sixth skip counting standard form expanded form strategies tens tenth third thousand	**"First 20 Days"** resources/examples/ideas on P: Drive **Weeks of Inspirational Math** https://www.youcubed.org/week-inspirational-math/ **Go Math:** Chapters 1 & 2 IN Success Lessons: 1.0a, 1.7a, 1.8a, 2.11a **Illustrative Mathematics Tasks:** (www.illustrativemathematics.org) Looking at Numbers Every Which Way (2.NS.2) Frog and Toad on a Number Line (2.NS.3) **Learning Math in the Primary Grades (Madison MSD)** https://math.madison.k12.wi.us/files/math/LMPGcomplete.pdf **Inside Mathematics** http://www.insidemathematics.org/performance-assessment-tasks Carol's Numbers (2.NS.6, PS.5, PS.7) Pam's Shopping Trip (2.NS.5, PS.1) **Mentor Text(s)** Ten Little Monkeys (Eileen Cristelow) Ten, Nine, Eight (Molly Bang) Ten on a Sled (Kim Norman) One of Each (Mary Anne Hoberman) One (Kathryn Otoshi)	**Spiral review:** 1.NS.2, 1.NS.6 **Prerequisite Skills:** • Model numbers to 20 • Use a hundreds chart to count • Identify numbers to 30 • Compare 2-digit numbers using relational symbols • Place value with 2-digit numbers **Scaffolding Support (EL; SPED, Striving Learners):** • Go Math: differentiation materials • Open ended problems with multiple entry points • Written instructions • Small group instruction • Graphic Organizers • Manipulatives • Encourage multiple ways to solve problems • Provide models of finished products • Provide picture support • Ask all students to show their strategies while explaining • Send home games to practice specific skills
Process Standards for Mathematics	• Mathematicians progress from concrete to pictorial to more abstract reasoning. • Mathematicians strategically choose tools to solve problems. • Mathematicians look closely to discern a pattern or structure for the base-ten number system.	PS. 2 PS. 5 PS. 7	• Compose and decompose numbers, in order to gain a better understanding of the number system, relative size of numbers, and place value. • Make connections and find patterns between different forms of numbers (standard form, expanded form, word form, decomposed, etc.). • Use number lines, fact families, place value charts and other tools to make sense of the structure of the number system. Explain how the tool helped to make connections.			
Number Work	• Mathematicians gain understanding with number meaning, number relationships, number magnitude, operations involving numbers, and referents for numbers and quantities.		• Count to 120 by ones, fives and tens. • Recognize number sets from 1 – 20 in pattered arrangements and tell how many without counting (subitizing). • Mentally find 10 more or 10 less than a given 2-digit number without counting and explain the thinking process. • Show equivalent forms of whole numbers as groups of tens and ones, and understand the meaning of the tens and ones digits.			

2.NS.1: Count by ones, twos, fives, tens, and hundreds up to at least 1,000 from any given number.
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.
2.NS.3: Plot and compare whole numbers up to 1,000 on a number line.
2.NS.4: Match the ordinal numbers first, second, third, etc., with an ordered set up to 30 items.
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).
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).
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 the comparisons.
2.CA.7: Create, extend, and give an appropriate rule for number patterns using addition and subtraction within 1,000.

2nd Grade Mathematics – Scope and Sequence – MSD of Pike Township

Quarter 1 Week 7 – 9	Essential Goals	Priority Standards	Strategies/Skills	Academic Vocabulary	Possible Instructional Resources	Differentiation
Unit 2: **Understanding Addition and Subtraction**	• Mathematicians use place value to solve problems. • Mathematicians use properties of operations to solve problems. • Mathematicians use relationships among operations to solve problems. • Mathematicians represent and solve problems using addition and subtraction. • Mathematicians can group objects (up to 20) that have even or odd numbers.	2.CA.2 2.CA.5 2.CA.6	• Solve real-world problems involving addition and subtraction within 100. • Solve real-world addition and subtraction problems with unknowns in all parts of the problem. • Write equations to represent addition and subtraction problems. • Use estimation to determine if your answer is reasonable. • Use addition to find the total number of objects arranged in rectangular arrays with up to 5 rows and 5 columns. • Write an equation to express the total as a sum of equal groups. • Show that the order in which numbers are added does not change the sum. • Show that how the numbers are grouped in addition will not change the sum.	addend addition count back count on decompose difference digit equals estimate explain minus ones plus regroup strategies subtraction sum tens	**Go Math:** Chapters 3 **Good Questions for Math Teaching** Operations (pg. 40-43) **Learning Math in the Primary Grades (Madison MSD)** https://math.madison.k12.wi.us/files/math/LMPGcomplete.pdf **Everyday Mathematics Teacher's Guide to Games** **Mastering the Basic Math Facts in Addition and Subtraction** **https://www.heinemann.com/shared/onlineresources/e02963/oconelladd.pdf** **Mentor Text(s)** 12 Ways to Get to 11 (Eve Merriam) Domino Addition (Lynette Long) **Inside Mathematics** Apple Farm Field Trip (2.CA.2, PS.1, PS.3) http://www.insidemathematics.org/assets/common-core-math-tasks/apple%20farm%20field%20trip.pdf Incredible Equations(2.CA.2, PS.1) http://www.insidemathematics.org/assets/common-core-math-tasks/incredible%20equations.pdf	**Spiral review:** 2.NS.3, 2.NS.6 **Prerequisite Skills:** • Use symbols (+ and =) to add subtract • Find sums up to 10 • Doubles and doubles plus one facts • Use simple addition and subtraction patterns to solve problems • Decompose 2-digit numbers into tens and ones **Scaffolding Support (EL; SPED, Striving Learners):** • Go Math: differentiation materials • Open ended problems with multiple entry points • Written instructions • Small group instruction • Graphic Organizers • Manipulatives • Encourage multiple ways to solve problems • Provide models of finished products • Provide picture support • Ask all students to show their strategies while explaining • Send home games to practice specific skills
Process Standards for Mathematics	• Mathematicians make sense of problems and persevere in solving them. • Mathematicians use estimation to decide if answers are reasonable. • Mathematicians look for patterns to uncover the relationship between addition and subtraction.	PS.1 PS.3 PS.7	• Provide contextual problems and time to solve real problems that involve adding and subtracting whole numbers. • Explore multiple strategies for adding and subtracting numbers to help make sense of different strategies and contexts. • Write and evaluate addition and subtraction equations for contextual problems, relating the solution(s) back to the original context.			
Number Work	• Mathematicians gain understanding with number meaning, number relationships, number magnitude, operations involving numbers, and referents for numbers and quantities.		**Games and Number Work Activities can be found on the following link-** https://mathweb.madison.k12.wi.us/files/math/LMPGcomplete.pdf Games- • Race to the Flat https://www.hand2mind.com/pdf/40975_sample.pdf • Capture 5 http://reisingthirdgrade.wikispaces.com/Capture+5+Math+Game+Directions • Building Numbers with base ten blocks Number Work (see link above)- • Renaming Number • Representing numbers with base ten blocks (multiple ways)			

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.
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.
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.

2nd Grade Mathematics – Scope and Sequence – MSD of Pike Township

Quarters 2 Weeks 10 – 14	Essential Goals	Priority Standards	Strategies/Skills	Academic Vocabulary	Possible Instructional Resources	Differentiation
Unit 3: **Time and Money**	• Mathematicians skip count by 5s and 10s to support telling time to the nearest 5 minutes and counting coins. • Mathematicians understand the difference between am and pm. • Mathematicians understand how seconds, minutes, hours, days, weeks, months, and years are related. • Mathematicians solve real-world problems using coins and dollar bills. • Mathematicians relate quantities to coin and dollar values. • Mathematicians represent problem solutions with drawings and coins and bills • Mathematicians use addition and subtraction to represent and solve problems.	2.M.5 2.M.6 2.M.7 2.NS.1 2.CA.2 Additional Focus: 2.DA.1	• Tell and write time to the nearest five minutes from analog clocks, using am and pm. • Solve real-world problems involving addition and subtraction of time intervals on the hour or half hour. • Describe relationships of time: seconds, minutes, hours, days, weeks, months, and year. • Identify the value of a penny, a nickel, a dime, a quarter and a dollar. • Find the value of a collection of pennies, nickels, dimes, quarters and dollars. • Use skip counting to count a collection of like coins. • Add, using multiple strategies, to find the value of a collection of unlike coins. Write an equation to represent the addition.	a.m. analog cent sign coins count count on days decimal point digital dime dollar dollar sign hours midnight minutes months nickel noon p.m. pattern pennies penny quarter quarter past seconds skip counting structure time tools weeks years	**Go Math:** Chapter 7 IN Success Lessons: 7.11a, 7.11b **Good Questions for Math Teaching** Time (pg. 61 – 65) Money (pg. 20 - 23) Operations (pg. 40-43) **Illustrative Mathematics Tasks:** (www.illustrativemathematics.org) Ordering Time (2.M.5) Alexander, Who Used to be Rich Last Sunday (2.M.7) Choices, Choices, Choices (2.M.7) Jamir's Penny Jar (2.M.7) Pet Shop (2.M.7) Susan's Choice (2.M.7) Visiting the Arcade (2.M.7) Saving Money (2.M.7) **Learning Math in the Primary Grades (Madison MSD)** https://math.madison.k12.wi.us/files/math/LMPGcomplete.pdf **Mentor Text(s)** The Very Busy Spider (Eric Carle) How do you Know What Time It Is? (Robert E. Wells) Telling Time With Big Mama Cat (Dan Harper) The Clock Struck One (Trudy Harris) Alexander Who Used to be Rich Last Sunday (Judith Viorst) Money Troubles (Bill Cosby) Round and Round the Money Goes: What Money is and How We Use It (Discovery Readers) (Melvin Berger) How the Second Grade Got $8,205.50 to Visit the Statue of Liberty (Nathan Zimelman)	**Spiral review:** 2.NS.3, 2.NS.6 **Prerequisite Skills:** • Order numbers to 100 on a number line • Skip count by fives and tens • Tell time to the hour **Scaffolding Support (EL; SPED, Striving Learners):** • Go Math: differentiation materials • Open ended problems with multiple entry points • Written instructions • Small group instruction • Graphic Organizers • Manipulatives • Encourage multiple ways to solve problems • Provide models of finished products • Provide picture support • Ask all students to show their strategies while explaining • Send home games to practice specific skills Around the Clock Numberline: http://www.reallygoodstuff.com/images/art/161602.pdf
Process Standards for Mathematics	• Mathematicians use clocks (analog and digital) to assist in solving problems. • Mathematicians use structure of a clock to assist in skip counting. • Mathematicians find shortcuts to reading time from an analog clock. • Mathematicians use their knowledge of time to determine elapsed time. • Mathematicians precisely label money.	PS. 5 PS. 6 PS. 8	• Allow students to choose (and explain the reasoning behind the choice) tools, such as paper clocks, number lines, play money, real money, drawings, etc. to help them solve problems involving money and time. • Use precise language when discussing and explaining concepts in time and money. • Look for patterns and make generalizations about relationships on analog clocks. • Look for patterns and make generalizations about relationships between different forms of money.			
Number Work	• Mathematicians gain understanding with number meaning, number relationships, number magnitude, operations involving numbers, and referents for numbers and quantities.		**Games, Number Work, and Problem Solving Activities can be found on the following link -**https://mathweb.madison.k12.wi.us/files/math/LMPGcomplete.pdf Games- • Coin Top-It (nickels & pennies) http://www2.newton.k12.ma.us/~melissa_chatfield/Downloads/Coin%20Top-It.pdf • Time Flies http://whattheteacherwants.blogspot.com/2011/02/time-flies.html • Three Feet in a Yard http://sunnydaysinsecondgrade.blogspot.com/2012/03/three-feet-in-yard.html Number Work (see link above)- • Renaming Number with Coin Values • Open Number lines for Elapsed Time			

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.
2.M.7: Find the value of a collection of pennies, nickels, dimes, quarters and dollars.
2.NS.1: Count by ones, twos, fives, tens, and hundreds up to at least 1,000 from any given number
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.

2nd Grade Mathematics – Scope and Sequence – MSD of Pike Township

Quarter 2 Weeks 15– 18	Essential Goals	Priority Standards	Strategies/Skills	Academic Vocabulary	Possible Instructional Resources	Differentiation
Unit 4: **Measurement and Data**	• Mathematicians make comparisons involving units of measure. • Mathematicians estimate and measure capacity. • Mathematicians measure for different purposes. • Mathematicians express their understanding of measurement verbally and in writing. • Mathematicians compare different units and relate them to the object they are measuring. • Mathematicians recognize the need for a fixed unit of weight. • Mathematicians use addition and subtraction to solve real-world problems involving measurement	2.M.1 2.M.2 2.M.3 2.M.4 2.DA.1 2.CA.2 2.CA.3	• Describe the relationship among inch, foot, and yard & among centimeter and meter. • Estimate and measure the length of an object, using the appropriate tools and units. • Measure length of an object twice using length units of different lengths for the two measurements. Describe how the two measurements relate to each other. • Estimate and measure volume using cups and pints. • Write and solve equations that represent real-world problems involving addition and subtraction within 100 of lengths that are given in the same units. • Draw picture graphs and bar graphs, with single-unit scales, that represent data with up to four choices. • Solve simple put-together, take-apart and compare problems using information presented in the graphs. • Write and solve equations that represent addition and subtraction problems created from the graphs.	bar graph capacity categories centimeter compare cups data estimate explain feet fewer than foot horizontal scale inch inches key length line plot longer longest meter more than picture graph pints shorter shortest standard structure survey symbols tally marks unit unknowns yard	**Go Math:** Chapter 8, 9 & 10 IN Success Lessons: 8.7a, 8.7b, 8.8a **Good Questions for Math Teaching** Volume and Capacity (pg. 51 – 54) Length and Perimeter (pg. 66 – 69) Data (pg. 97 – 101) **Illustrative Mathematics Tasks:** (www.illustrativemathematics.org) Growing Bean Plants (2.M.2) Hand Span Measures (2.M.2) The Longest Walk (2.M.2) How Big is a Foot? (2.M.3) Favorite Ice Cream Flavor (2.DA.1) **Learning Math in the Primary Grades (Madison MSD)** https://math.madison.k12.wi.us/files/math/LMPGcomplete.pdf **Inside Mathematics:** High Horse (2.M.3, PS.2, PS.4) Our Pets (2.DA.1, PS.2, PS.4) http://www.insidemathematics.org/performance-assessment-tasks **Mentor Text(s)** Inch by Inch (Leo Lionni) Measuring Penny (Loreen Leedy) How Big is a Foot? Inch Worm and a Half (Elinor J. Pinzy) Biggest, Strongest, Fastest (Steve Jenkins) If You Hopped Like a Frog (David M. Schwartz) Capacity (Theo Ellsworth) Pastry School in Paris (Cindy Neuscheander) Filled to Capacity (Mary Ann Graziani) How Many Seeds in a Pumpkin? (Margaret McNamara) Amanda Bean's Amazing Dream (Cindy Neuschwander) Math Appeal (Greg Tang) The Grapes of Math (Greg Tang) Math-terpieces The Art of Problem Solving(Greg Tang)	**Spiral review:** 2.CA.2, 2.CA.5 **Prerequisite Skills:** • Use non-standard units to measure and compare lengths • Compare lengths of different objects • Read a picture graph and tally chart **Scaffolding Support (EL; SPED, Striving Learners):** • Go Math: differentiation materials • Open ended problems with multiple entry points • Written instructions • Small group instruction • Graphic Organizers • Manipulatives • Encourage multiple ways to solve problems • Provide models of finished products • Provide picture support • Ask all students to show their strategies while explaining • Send home games to practice specific skills
Process Standards for Mathematics	• Mathematicians solve real-world problems. • Mathematicians choose appropriate tools, and can explain why they chose the tool, to solve problems. • Mathematicians look for patterns, make generalizations, and apply similar reasoning to other problems.	PS.1 PS.5 PS.6 PS.8	• Provide contextual problems and time to tackle real-world problems that involve measurement. • Write and evaluate algebraic and numerical expressions and equations for contextual problems, relating the solution(s) back to the original context. • Use tools such as rulers, base-ten blocks, number lines, visual models, etc. to solve problems with fractions, perimeter, and area. • Create and interpret data displays to organize and record numeric and categorical data in meaningful ways. • Model real-world situations with graphs, equations, data, and tables. Use these mathematical models to help answer questions about the situations.			
Number Work	• Mathematicians gain understanding with number meaning, number relationships, number magnitude, operations involving numbers, and referents for numbers and quantities.		**Games and Number Work Activities can be found on the following link -** https://mathweb.madison.k12.wi.us/files/math/LMPGcomplete.pdf Games- • Capture 5 http://reisingthirdgrade.wikispaces.com/Capture+5+Math+Game+Directions • Three Feet in a Yard http://sunnydaysinsecondgrade.blogspot.com/2012/03/three-feet-in-yard.html • Dash to the Decade (see link above) Number Work (see link above)- • Open Number lines for Linear Measurement • Hundred Charts Patterns/Puzzles for example: http://terristeachingtreasures.blogspot.com/2014/09/hundreds-chart-puzzle-freebie.html • Which Number Does Not Belong? (See http://wodb.ca/) • Reading and Understanding Graphs • Toss Two Number Cubes (Graph The Sum)			

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.
2.DA.1: Draw a picture graph and a bar graph (both with single-unit scales) 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.
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.
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).

2nd Grade Mathematics – Scope and Sequence – MSD of Pike Township

Quarter 3 Weeks 19 – 24	Essential Goals	Priority Standards	Strategies/Skills	Academic Vocabulary	Possible Instructional Resources	Differentiation
Unit 5: **Applications with Addition and Subtraction**	• Mathematicians use place value to solve problems. • Mathematicians use properties of operations to solve problems. • Mathematicians use relationships among operations to solve problems. • Mathematicians represent and solve problems using addition and subtraction. • Mathematicians can use addition and subtraction within 100 to solve one- and two- step word problems. • Mathematicians can group objects (up to 20) that have even or odd numbers.	2.CA.1 2.CA.2 2.CA.5 2.CA.6	• Use multiple strategies to demonstrate fluency with addition and subtraction within 100. • Solve real-world problems involving addition and subtraction within 100. • Solve real-world addition and subtraction problems with unknowns in all parts of the problem. • Write equations to represent addition and subtraction problems. • Use estimation to determine if your answer is reasonable. • Use addition to find the total number of objects arranged in rectangular arrays with up to 5 rows and 5 columns. • Write an equation to express the total as a sum of equal groups. • Show that the order in which numbers are added does not change the sum • Show that how the numbers are grouped in addition will not change the sum.	addend addition count back count on decompose difference digit equals estimate explain fluency minus ones plus regroup addition strategies structure subtraction sum tens	**Go Math:** Chapters 4 and 5 IN Success Lessons: 4.3a **Good Questions for Math Teaching** Operations (pg. 40-43) **Illustrative Mathematics Tasks:** (www.illustrativemathematics.org) Partitioning a Rectangle Into Unit Squares (2.CA.5) Counting Dots in Arrays (2.CA.5) **Learning Math in the Primary Grades (Madison MSD)** https://math.madison.k12.wi.us/files/math/LMPGcomplete.pdf **Inside Mathematics:** Peanuts and Ducks (2.CA.1, 2.CA.4, PS.6) http://www.insidemathematics.org/assets/common-core-math-tasks/peanuts%20and%20ducks.pdf **Everyday Mathematics Teacher's Guide to Games** **Mentor Text(s)** 12 Ways to Get to 11 (Eve Merriam) Domino Addition (Lynette Long)	**Spiral review:** 2.M.7, 2.CA.2 **Prerequisite Skills:** • Use symbols (+ and =) to add • Find sums up to 10 • Doubles and doubles plus one facts • Use simple addition and subtraction patterns to solve problems • Basic addition and subtraction facts • Decompose 2-digit numbers into tens and ones **Scaffolding Support (EL; SPED, Striving Learners):** • Go Math: differentiation materials • Open ended problems with multiple entry points • Written instructions • Small group instruction • Graphic Organizers • Manipulatives • Encourage multiple ways to solve problems • Provide models of finished products • Provide picture support • Ask all students to show their strategies while explaining • Send home games to practice specific skills
Process Standards for Mathematics	• Mathematicians make sense of problems and persevere in solving them. • Mathematicians use estimation to decide if answers are reasonable. • Mathematicians look for patterns to uncover the relationship between addition and subtraction.	PS.1 PS.3 PS.7	• Provide contextual problems and time to solve real problems that involve adding and subtracting whole numbers. • Explore multiple strategies for adding and subtracting numbers to help make sense of different strategies and contexts. • Write and evaluate addition and subtraction equations for contextual problems, relating the solution(s) back to the original context.			
Number Work	• Mathematicians gain understanding with number meaning, number relationships, number magnitude, operations involving numbers, and referents for numbers and quantities.		**Games, Number Work, and Problem Solving Activities can be found on the following link -**https://mathweb.madison.k12.wi.us/files/math/LMPGcomplete.pdf Games- • Addition Top-It http://everydaymath.uchicago.edu/about/understanding-em/games/addition-top-it.html • Regroup or No Regroup Game *(Taken from Debbie Diller- (Trade or No Trade) Math Stations At Work)* • Sum In a Row (see link above) • Close to 20 (see link above) Number Work (see link above)- • Renaming Number • Open Number Line • Fact Strategies • Guess the Sort • Number Patterns (sequencing)			

2.CA.1: Add and subtract fluently within 100.
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.
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.
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.

2nd Grade Mathematics – Scope and Sequence – MSD of Pike Township

Quarter 3 Weeks 25 – 27	Essential Goals	Priority Standards	Strategies/Skills	Academic Vocabulary	Possible Instructional Resources	Differentiation
Unit 6: **Geometry**	• Mathematicians understand that 2D and 3D shapes have specific attributes. • Mathematicians identify and draw shapes with their attributes. • Mathematicians partition circles and rectangles into equal shares. • Mathematicians illustrate and describe a whole in different ways. • Mathematicians recognize that equal shares of identical wholes do not have to be the same shape.	2.G.1 2.G.2 2.G.3 2.G.4 2.G.5	• Identify and describe two- and three- dimensional shapes according to the number and shape of faces and the number of sides and/or vertices. • Draw two-dimensional shapes. • Create squares, rectangles, triangles cubes and right rectangular prisms using appropriate materials. • Investigate and predict the result of comping and decomposing two- and three-dimensional shapes. • Partition a rectangle into rows and columns of same-size squares and count to find the number of same-size squares. • Partition circles and rectangles into two, three, or four equal parts. • Describe two, three or four equal parts as halves, thirds, half of, a third of, a fourth of, etc. Describe the whole as two halves, three thirds, four fourths. • Recognize that equal parts of identical wholes need not have the same shape.	angle attributes cone cube cylinder edge equal parts explain face fourth of fourths half of halves hexagon partition partitioning pentagon quadrilateral quarter of rectangle rectangular prism routines shape sides spatial quantities sphere square third of thirds triangle vertex vertices whole	**Go Math:** Chapter 11 IN Success Lessons: 11.2a, 11.2b, 11.2c, 11.6a, 11.6b **Good Questions for Math Teaching** Two-Dimensional Shapes (pg. 77 - 81) Three-Dimensional Shapes (pg. 84 – 88) Area (pg. 56 – 60) Fractions (pg. 25) **Illustrative Mathematics Tasks:** (www.illustrativemathematics.org) Polygons (2.G.1) Partitioning a Rectangle into Unit Squares (2.G.4) Representing Half of a Rectangle (2.G.5) Which Pictures Represent One Half (2.G.5) **Learning Math in the Primary Grades (Madison MSD)** https://math.madison.k12.wi.us/files/math/LMPGcomplete.pdf **Inside Mathematics** **http://www.insidemathematics.org/performance-assessment-tasks** Half and Half (2.G.4 and 2.G.5) **Mentor Text(s)** Sea Shapes (Suse MacDonald) Cubes, Cones, Cylinders, and Spheres (Tana Hoban) Shapes, Shapes, Shapes (Tana Hoban) What is a Square? (Rebecca Kai Dotlich) It Looked Like Split Milk (Charles Shaw)	**Spiral review:** 2.M.2, 2.M.3, 2.CA.2 **Prerequisite Skills:** • Identify two and three-dimensional shapes • Identify shapes that are split into equal parts **Scaffolding Support (EL; SPED, Striving Learners):** • Go Math: differentiation materials • Open ended problems with multiple entry points • Written instructions • Small group instruction • Graphic Organizers • Manipulatives • Encourage multiple ways to solve problems • Provide models of finished products • Provide picture support • Ask all students to show their strategies while explaining • Send home games to practice specific skills
Process Standards for Mathematics	• Mathematicians construct viable arguments and critique the reasoning of others. • Mathematicians use appropriate tools strategically. • Mathematicians use clear definitions when discussing and reasoning about geometric figures.	PS. 1 PS. 3 PS. 6	• Choose multiples strategies, manipulatives, and concrete models to solve problems. Explain why a tool was chosen. • Use precise vocabulary to describe and classify geometric figures. • Justify claims using mathematical arguments. • Politely defend or reject others' claims, using mathematical arguments.			
Number Work	• Mathematicians gain understanding with number meaning, number relationships, number magnitude, operations involving numbers, and referents for numbers and quantities.		**Games and Number Work Activities can be found on the following link-** https://mathweb.madison.k12.wi.us/files/math/LMPGcomplete.pdf Games- • Pentominoes http://www.scholastic.com/titles/chasingvermeer/pentominoes.pdf • 2D/3D Matching Game http://www.superteacherworksheets.com/geometry/polygon-match.pdf Number Work (see link above)- • Hexominoes • 3D Shape Hunt (search around classroom or school for 3D shapes) • Which paper column can hold the most books? http://creeksidelearning.com/stem-activities-for-kids-how-strong-is-a-piece-of-paper/			

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.
2.G.2: Create squares, rectangles, triangles, cubes, and right rectangular prisms using appropriate materials.
2.G.3: Investigate and predict the result of composing and decomposing two- and three-dimensional shapes.
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.
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.

2nd Grade Mathematics – Scope and Sequence – MSD of Pike Township

Quarter 4 Weeks 28 – 32	Essential Goals	Priority Standards	Strategies/Skills	Academic Vocabulary	Possible Instructional Resources	Differentiation
Unit 7: **Real World Applications with Addition and Subtraction with Numbers up to 1,000**	• Mathematicians use many different strategies to add and subtract multi-digit whole numbers. • Mathematicians use mental strategies to apply mathematics • Mathematicians find ways to apply mathematics to their world.	2.CA.1 2.CA.4 2.CA.7	• Add and subtract fluently within 100. • Add and subtract within 1,000 using multiple strategies. • Describe strategies and explain reasoning when adding and subtracting within 1,000. • Compose and decompose tens and hundreds, when adding and subtracting numbers up to 1,000. • Create, extend, and give an appropriate rule for number patterns using addition and subtraction within 1,000.	addition difference difference digits fluency hundred ones pattern place value question regroup routines rule strategies structure subtraction sum tens thousands tools two digit	**Go Math:** Chapter 6 **Good Questions for Math Teaching** Operations (pg. 40-41) **Illustrative Mathematics Tasks:** (www.illustrativemathematics.org) Hitting the Target Number (2.CA.1) Ford and Logan Add 45 + 36 (2.CA.1) Saving Money 1 (2.CA.1) Saving Money 2 (2.CA.1) Toll Bridge Puzzle (2.CA.4) How Many Days Until Summer Vacation? (2.CA.4) Many Ways to do Addition 2 (2.CA.4) Choral Counting (2.CA.4) Peyton and Presley Discuss Addition (2.CA.6) **Learning Math in the Primary Grades (Madison MSD)** https://math.madison.k12.wi.us/files/math/LMPGcomplete.pdf **Everyday Mathematics Teacher's Guide to Games** **Mentor Text(s)** 12 Ways to Get to 11 (Eve Merriam) Domino Addition (Lynette Long) The 500 Hats of Bartholomew Cubbins (Dr. Seuss) One Hundred Hungry Ants (E. Pinczes) Amanda Bean's Amazing Dream: A Mathematical Story (Cindy Neuschwander)	**Spiral review:** 2.CA.1, 2.CA.2, 2.CA.5 **Prerequisite Skills:** • Model subtracting tens, using base ten blocks • Use multiple strategies to add two-digit numbers • Use base ten blocks to compose numbers **Scaffolding Support (EL; SPED, Striving Learners):** • Go Math: differentiation materials • Open ended problems with multiple entry points • Written instructions • Small group instruction • Graphic Organizers • Manipulatives • Encourage multiple ways to solve problems • Provide models of finished products • Provide picture support • Ask all students to show their strategies while explaining • Send home games to practice specific skills
Process Standards for Mathematics	• Mathematicians progress from concrete to pictorial to more abstract reasoning. • Mathematicians explain the meaning of the symbols they choose. • Mathematicians strategically choose tools to solve problems. • Mathematicians look closely to discern a pattern or structure for the base-ten number system.	PS. 2 PS. 5 PS. 7	• Compose and decompose numbers using equations and expressions. • Make connections and find patterns between different forms of numbers (standard form, expanded form, word form, decomposed, etc.). • Use number lines, fact families, place value charts and other tools to make sense of the structure of the number system. Explain how the tool helped to make connections.			
Number Work	• Mathematicians gain understanding with number meaning, number relationships, number magnitude, operations involving numbers, and referents for numbers and quantities.		**Games, Number Work, and Problem Solving Activities can be found on the following link -**https://mathweb.madison.k12.wi.us/files/math/LMPGcomplete.pdf Games- • Salute (see link above) • Roll to 100 (see link above) Number Work (see link above)- • Looking for Tens • What's The Rule • Which Number Does Not Belong? (See http://wodb.ca/ as a resource for possible examples.)			

2.CA.1: Add and subtract fluently within 100.
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.
2.CA.7: Create, extend, and give an appropriate rule for number patterns using addition and subtraction within 1000.

2nd Grade Mathematics – Scope and Sequence – MSD of Pike Township

Quarter 4 Weeks 33 – 36	Essential Goals	Priority Standards	Strategies/Skills	Academic Vocabulary	Instructional Resources	Differentiation
Math Content: **Unit 8:** **Reinforce and Extend Mathematical Understandings**	• Mathematicians practice critical grade level skills, in a variety of formats, to prepare them for more complex mathematical understandings. • Mathematicians make sense of a variety of problems and persevere in solving them. • Mathematicians reason abstractly and quantitatively to solve problems. • Mathematicians construct viable arguments and critique the reasoning of others. • Mathematicians apply math skills and understandings to solve real-world problems. • Mathematicians use a variety of tools to aid them in solving mathematical and real-world problems. • Mathematicians use structures and patterns to solve problems efficiently.	2.NS.3 2.NS.6 2.CA.1 2.CA.2 2.CA.5 2.G.4 2.G.5 2.M.2 2.M.3 2.M.3 2.M.7 2.DA.1	• Use pre and post assessments to determine reinforcement or extension of skills and understandings. • Use multiple representations to solve problems. • Connect mathematics to students' daily lives. • Use correct mathematical vocabulary. • Use accurate labels, symbols, and calculations. • Work in teams to solve problems and justify solutions. • Select an appropriate tool to solve a problem and explain why the tool makes sense to use. • Explain whether or not a solution or process is reasonable for the problem situation.	abstract reasoning argument construct critique efficient mathematical models persevere precision proficient quantitative reasoning reasonable reasoning repeated reasoning strategically structure	**Go Math:** Feel free to pull ideas from: IN Success Supplement – STEM Activities End of Year Review Projects Unit Projects Getting Ready for 3rd grade **Illustrative Mathematics Tasks:** http://www.illustrativemathematics.org **Learning Math in the Primary Grades (Madison MSD)** https://math.madison.k12.wi.us/files/math/LMPGcomplete.pdf **Everyday Mathematics Teacher's Guide to Games** **Inside Mathematics:** Pocket Money (2.M.7, 2.CA.1) Sheeps and Ducks (2.CA.1, 2.CA.4) **http://www.insidemathematics.org/performance-assessment-tasks**	**Scaffolding Support (EL; SPED, Striving Learners):** • Go Math: differentiation materials • Open ended problems with multiple entry points • Written instructions • Small group instruction • Graphic Organizers • Manipulatives • Concrete models • Encourage multiple ways to solve problems • Models of finished products • Picture Support • Ask all students to show their strategies while explaining • Games to practice specific skills at home

2.NS.3: Plot and compare whole numbers up to 1,000 on a number line.
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).
2.CA.1: Add and subtract fluently within 100.
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.
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.
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.
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.
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.7: Find the value of a collection of pennies, nickels, dimes, quarters and dollars.
2.DA.1: Draw a picture graph and a bar graph (both with single-unit scales) 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.

Process Standards for Mathematics

The Process Standards demonstrate the ways in which students should develop conceptual understanding of mathematical content, and the ways in which students should synthesize and apply mathematical skills.	
PS.1: Make sense of problems and persevere in solving them.	Mathematically proficient students start by explaining to themselves the meaning of a problem and looking for entry points to its solution. They analyze givens, constraints, relationships, and goals. They make conjectures about the form and meaning of the solution and plan a solution pathway, rather than simply jumping into a solution attempt. They consider analogous problems and try special cases and simpler forms of the original problem in order to gain insight into its solution. They monitor and evaluate their progress and change course if necessary. Mathematically proficient students check their answers to problems using a different method, and they continually ask themselves, “Does this make sense?” and "Is my answer reasonable?" They understand the approaches of others to solving complex problems and identify correspondences between different approaches. Mathematically proficient students understand how mathematical ideas interconnect and build on one another to produce a coherent whole.
PS.2: Reason abstractly and quantitatively.	Mathematically proficient students make sense of quantities and their relationships in problem situations. They bring two complementary abilities to bear on problems involving quantitative relationships: the ability to decontextualize—to abstract a given situation and represent it symbolically and manipulate the representing symbols as if they have a life of their own, without necessarily attending to their referents—and the ability to contextualize, to pause as needed during the manipulation process in order to probe into the referents for the symbols involved. Quantitative reasoning entails habits of creating a coherent representation of the problem at hand; considering the units involved; attending to the meaning of quantities, not just how to compute them; and knowing and flexibly using different properties of operations and objects.
PS.3: Construct viable arguments and critique the reasoning of others.	Mathematically proficient students understand and use stated assumptions, definitions, and previously established results in constructing arguments. They make conjectures and build a logical progression of statements to explore the truth of their conjectures. They analyze situations by breaking them into cases and recognize and use counterexamples. They organize their mathematical thinking, justify their conclusions and communicate them to others, and respond to the arguments of others. They reason inductively about data, making plausible arguments that take into account the context from which the data arose. Mathematically proficient students are also able to compare the effectiveness of two plausible arguments, distinguish correct logic or reasoning from that which is flawed, and—if there is a flaw in an argument—explain what it is. They justify whether a given statement is true always, sometimes, or never. Mathematically proficient students participate and collaborate in a mathematics community. They listen to or read the arguments of others, decide whether they make sense, and ask useful questions to clarify or improve the arguments.
PS.4: Model with mathematics.	Mathematically proficient students apply the mathematics they know to solve problems arising in everyday life, society, and the workplace using a variety of appropriate strategies. They create and use a variety of representations to solve problems and to organize and communicate mathematical ideas. Mathematically proficient students apply what they know and are comfortable making assumptions and approximations to simplify a complicated situation, realizing that these may need revision later. They are able to identify important quantities in a practical situation and map their relationships using such tools as diagrams, two-way tables, graphs, flowcharts and formulas. They analyze those relationships mathematically to draw conclusions. They routinely interpret their mathematical results in the context of the situation and reflect on whether the results make sense, possibly improving the model if it has not served its purpose.
PS.5: Use appropriate tools strategically.	Mathematically proficient students consider the available tools when solving a mathematical problem. These tools might include pencil and paper, models, a ruler, a protractor, a calculator, a spreadsheet, a computer algebra system, a statistical package, or dynamic geometry software. Mathematically proficient students are sufficiently familiar with tools appropriate for their grade or course to make sound decisions about when each of these tools might be helpful, recognizing both the insight to be gained and their limitations. Mathematically proficient students identify relevant external mathematical resources, such as digital content, and use them to pose or solve problems. They use technological tools to explore and deepen their understanding of concepts and to support the development of learning mathematics. They use technology to contribute to concept development, simulation, representation, reasoning, communication and problem solving.
PS.6: Attend to precision.	Mathematically proficient students communicate precisely to others. They use clear definitions, including correct mathematical language, in discussion with others and in their own reasoning. They state the meaning of the symbols they choose, including using the equal sign consistently and appropriately. They express solutions clearly and logically by using the appropriate mathematical terms and notation. They specify units of measure and label axes to clarify the correspondence with quantities in a problem. They calculate accurately and efficiently and check the validity of their results in the context of the problem. They express numerical answers with a degree of precision appropriate for the problem context.
PS.7: Look for and make use of structure.	Mathematically proficient students look closely to discern a pattern or structure. They step back for an overview and shift perspective. They recognize and use properties of operations and equality. They organize and classify geometric shapes based on their attributes. They see expressions, equations, and geometric figures as single objects or as being composed of several objects.
PS.8: Look for and express regularity in repeated reasoning.	Mathematically proficient students notice if calculations are repeated and look for general methods and shortcuts. They notice regularity in mathematical problems and their work to create a rule or formula. Mathematically proficient students maintain oversight of the process, while attending to the details as they solve a problem. They continually evaluate the reasonableness of their intermediate results.

NUMBER SENSE	
2.NS.1	Count by ones, twos, fives, tens, and hundreds up to at least 1,000 from any given number.
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.
2.NS.3	Plot and compare whole numbers up to 1,000 on a number line.
2.NS.4	Match the ordinal numbers first, second, third, etc., with an ordered set up to 30 items.
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).
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, 200, 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).
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.

COMPUTATION AND ALGEBRAIC THINKING	
2.CA.1	Add and subtract fluently within 100.
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.

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).
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.
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.
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.
2.CA.7	Create, extend, and give an appropriate rule for number patterns using addition and subtraction within 1000.

GEOMETRY	
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.
2.G.2	Create squares, rectangles, triangles, cubes, and right rectangular prisms using appropriate materials.
2.G.3	Investigate and predict the result of composing and decomposing two- and three-dimensional shapes.
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.
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.

MEASUREMENT	
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.
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.
2.M.7	Find the value of a collection of pennies, nickels, dimes, quarters and dollars.

DATA ANALYSIS	
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.

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.	

K-2 Math Standards Vertical Alignment (2014 Language)

Computation and Algebraic Thinking		
Kindergarten	**Grade 1**	**Grade 2**
K.CA.1: Use objects, drawings, mental images, sounds, etc., to represent addition and subtraction within 10.	**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.	**2.CA.1:** Add and subtract fluently within 100.
	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.	**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.
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).	**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).	**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.
	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).	**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).
	1.CA.3: Create a real-world problem to represent a given equation involving addition and subtraction within 20.	
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.]	**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).	**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.
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.		**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.
K.CA.5: Create, extend, and give an appropriate rule for simple repeating and growing patterns with numbers and shapes.	**1.CA.7**: Create, extend, and give an appropriate rule for number patterns using addition within 100.	**2.CA.7:** Create, extend, and give an appropriate rule for number patterns using addition and subtraction within 1000.

<table>
<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>
</table>

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.