School District of Marshfield Mathematics Standards –

1st Grade

MATHEMATICS – Counting and Cardinality, Operations and Algebraic Thinking, Number and Operations in Base Ten, Measurement and Data, and Geometry

Wisconsin Academic Standards *Specific knowledge and skills that students will know and be able to do by the end of 1st Grade*	***Marshfield Student Learning Target ("I can …")*** *These learning targets could be taught in the context of whole group, mini lessons, small groups and conferences.*
Operations and Algebraic Thinking	
Represent and Solve Problems Involving Addition and Subtraction • Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem. **1.OA.1** • Solve word problems that call for addition of three whole numbers whose sum is less than or equal to 20, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.[1] **1.OA.2**	***Represent and Solve Problems Involving Addition and Subtraction*** • I can use different strategies for addition to solve word problems (within 20). • I can use different strategies for subtraction to solve word problems (within 20). • I can use solve word problems where I have to add 3 whole numbers.
Understand and Apply Properties of Operations and the Relationship Between Addition and Subtraction • Apply properties of operations as strategies to add and subtract.[2] *Examples: If 8 + 3 = 11 is known, then 3 + 8 = 11 is also known. (Commutative property of addition.) To add 2 + 6 + 4, the second two numbers can be added to make a ten, so 2 + 6 + 4 = 2 + 10 = 12. (Associative property of addition.)* **1.OA.3** • Understand subtraction as an unknown-addend problem. *For example, subtract 10 – 8 by finding the number that makes 10 when added to 8.* **1.OA.4**	***Understand and Apply Properties of Operations and the Relationship Between Addition and Subtraction*** • I can combine addends in any order to solve addition problems (commutative). • I can use addition facts I know well to help me solve problems where there are more than two numbers (associative). • I can use what I know about addition facts to help me answer subtraction fact problems.
Add and Subtract within 20 • Relate counting to addition and subtraction (e.g., by counting on 2 to add 2). **1.OA.5** • Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. 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). **1.OA.6**	***Add and Subtract within 20*** • I can count forward and backward to add and subtract. • I can add facts within 20 using multiple strategies. • I can subtract facts within 20 using multiple strategies. • I can demonstrate fluency for addition and subtraction facts within 10.

[1] See Table 1
[2] Students need not use formal terms for these properties.

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Operations and Algebraic Thinking	
Work with Addition and Subtraction Equations • Understand the meaning of the equal sign, and determine if equations involving addition and subtraction are true or false. *For example, which of the following equations are true and which are false? 6 = 6, 7 = 8 – 1, 5 + 2 = 2 + 5, 4 + 1 = 5 + 2.* **1.OA.7** • Determine the unknown whole number in an addition or subtraction equation relating three whole numbers. *For example, determine the unknown number that makes the equation true in each of the equations 8 + ? = 11, 5 = ? – 3, 6 + 6 =?.* **1.OA.8**	***Work with Addition and Subtraction Equations*** • I can tell if addition or subtraction number sentences are true because I understand what an equal sign means. • I can figure out what a missing number is in an addition or subtraction problem.
Number and Operations in Base Ten	
Extend the Counting Sequence • Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral. **1.NBT.1**	***Extend the Counting Sequence*** • I can count up to 120 starting at any number under 120. • I can read and write my numbers to show how many objects are in a group (up to 120).
Understand Place Value • Understand that the two digits of a two-digit number represent amounts of tens and ones. Understand the following as special cases: **1.NBT.2** a. 10 can be thought of as a bundle of ten ones — called a "ten." **1.NBT.2A** b. The numbers from 11 to 19 are composed of a ten and one, two, three, four, five, six, seven, eight, or nine ones. **1.NBT.2B** c. 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). **1.NBT.2C** • Compare two two-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons with the symbols >, =, and <. **1.NBT.3**	***Understand Place Value*** • I can tell how many tens and how many ones are in a number. • I can show that I know what a "ten" is. • I can show that any number between 11 and 19 is a group of "ten" and a certain number of ones. • I can show that I understand the numbers I use when I count by tens, have a certain number of tens and 0 ones. • I can compare two-digit numbers using <, =, and > because I understand tens and ones.
Use Place Value Understanding and Properties of Operations to Add and Subtract • 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 concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used. Understand that in adding two-digit numbers, one adds tens and tens, ones and ones; and sometimes it is necessary to compose a ten. **1.NBT.4**	***Use Place Value Understanding and Properties of Operations to Add and Subtract*** • I can use math strategies to help me solve and explain addition problems within 100. • I can use objects and pictures to help me solve and explain addition problems within 100. • I can understand that adding two-digit numbers means I add the tens to the tens and the ones to the ones. • I can understand that when I add two-digit numbers, sometimes I have to make a group of ten from the ones (regroup).

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Number and Operations in Base Ten	
Use Place Value Understanding and Properties of Operations to Add and Subtract • Given a two-digit number, mentally find 10 more or 10 less than the number, without having to count; explain the reasoning used. **1.NBT.5** • Subtract multiples of 10 in the range 10-90 from multiples of 10 in the range 10-90 (positive or zero differences), using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used. **1.NBT.6**	***Use Place Value Understanding and Properties of Operations to Add and Subtract*** • I can find 10 more or 10 less in my head. • I can use different strategies to subtract multiples of 10 (10-90) from numbers under 100, write the matching number sentence and explain my strategy.
Measurement and Data	
Measure Lengths Indirectly and by Iterating Length Units • Order three objects by length; compare the lengths of two objects indirectly by using a third object. **1.MD.1** • Express the length of an object as a whole number of length units, by laying multiple copies of a shorter object (the length unit) end to end; understand that the length measurement of an object is the number of same-size length units that span it with no gaps or overlaps. *Limit to contexts where the object being measured is spanned by a whole number of length units with no gaps or overlaps.* **1.MD.2**	***Measure Lengths Indirectly and by Iterating Length Units*** • I can put three objects in order from longest to shortest and compare their lengths. • I can tell the length of an object using whole numbers. • I can show that I understand how to measure something by multiple copies of an object that are laid end to end with no gaps or overlaps.
Tell and Write Time • Tell and write time in hours and half-hours using analog and digital clocks. **1.MD.3**	***Tell and Write Time*** • I can tell and write time in hours and half-hours using any kind of clock.
Represent and Interpret Data • Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another. **1.MD.4**	***Represent and Interpret Data*** • I can organize and understand data in a graph, table, or chart. • I can ask and answer questions about how many in each category. • I can ask and answer questions about how many in total. • I can ask and answer questions about how many more/less.

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Geometry	
Reason with Shapes and Their Attributes • Distinguish between defining attributes (e.g., triangles are closed and three-sided) versus non-defining attributes (e.g., color, orientation, overall size); build and draw shapes to possess defining attributes. **1.G.1** • Compose 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.[3] **1.G.2** • Partition circles and rectangles into two and four equal shares, describe the shares 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 shares. Understand for these examples that decomposing into more equal shares creates smaller shares. **1.G.3**	***Reason with Shapes and Their Attributes*** • I can understand and tell about the parts that make different shapes unique. • I can build and draw shapes that have certain parts. • I can create two-dimensional shapes (rectangles, squares, trapezoids, triangles, half-circles and quarter-circles). • I can create three-dimensional shapes (cubes, right rectangular prisms, right circular cones and right circular cylinders). • I can use two- and three-dimensional shapes to create new shapes. • I can understand that "halves" means two equal part and "fourths" or "quarters" means four equal parts. • I can break circles and rectangles into equal parts and use the words whole, halves, fourths, and quarters to talk about them. • I can understand that breaking circles or rectangles into more equal parts means that the parts will be smaller.

[3] Students do not need to learn formal names such as "right rectangular prism."

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TABLE 1. Common Addition and Subtraction Situations[4]

	Result Unknown	Change Unknown	Start Unknown
Add to	Two bunnies sat on the grass. Three more bunnies hopped there. How many bunnies are on the grass now? 2 + 3 = ?	Two bunnies were sitting on the grass. Some more bunnies hopped there. Then there were five bunnies. How many bunnies hopped over to the first two? 2 + ? = 5	Some bunnies were sitting on the grass. Three more bunnies hopped there. Then there were five bunnies. How many bunnies were on the grass before? ? + 3 = 5
Take From	Five apples were on the table. I ate two apples. How many apples are on the table now? 5 – 2 = ?	Five apples were on the table. I ate some apples. Then there were three apples. How many apples did I eat? 5 – ? = 3	Some apples were on the table. I ate two apples. Then there were three apples. How many apples were on the table before? ? – 2 = 3
	Total Unknown	**Addend Unknown**	**Both Addends Unknown[1]**
Put Together/ Take Apart[2]	Three red apples and two green apples are on the table. How many apples are on the table? 3 + 2 = ?	Five apples are on the table. Three are red and the rest are green. How many apples are green? 3 + ? = 5, 5 – 3 = ?	Grandma has five flowers. How many can she put in her red vase and how many in her blue vase? 5 = 0 + 5, 5 = 5 + 0 5 = 1 + 4, 5 = 4 + 1 5 = 2 + 3, 5 = 3 + 2
	Difference Unknown	**Bigger Unknown**	**Smaller Unknown**
Compare[3]	("How many more?" version): Lucy has two apples. Julie has five apples. How many more apples does Julie have than Lucy? ("How many fewer?" version): Lucy has two apples. Julie has five apples. How many fewer apples does Lucy have than Julie? 2 + ? = 5, 5 – 2 = ?	(Version with "more"): Julie has three more apples than Lucy. Lucy has two apples. How many apples does Julie have? (Version with "fewer"): Lucy has 3 fewer apples than Julie. Lucy has two apples. How many apples does Julie have? 2 + 3 = ?, 3 + 2 = ?	(Version with "more"): Julie has three more apples than Lucy. Julie has five apples. How many apples does Lucy have? (Version with "fewer"): Lucy has 3 fewer apples than Julie. Julie has five apples. How many apples does Lucy have? 5 – 3 = ?, ? + 3 = 5

[1]These take apart situations can be used to show all the decompositions of a given number. The associated equations, which have the total on the left of the equal sign, help children understand that the = sign does not always mean makes or results in but always does mean is the same number as.

[2]Either addend can be unknown, so there are three variations of these problem situations. Both Addends Unknown is a productive extension of this basic situation, especially for small numbers less than or equal to 10.

[3]For the Bigger Unknown or Smaller Unknown situations, one version directs the correct operation (the version using more for the bigger unknown and using less for the smaller unknown). The other versions are more difficult.

[4] Adapted from Box 2-4 of Mathematics Learning in Early Childhood, National Research Council (2009, pp.32,33).