**Blackwater Community School Curriculum Map 2016-2017**

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| **Second Grade Quarter 1 (46 days)** | | | | | |
| **Sums and Differences to 20**  **Approximately 10 Instructional Days: August 2, 2016 – August 12, 2016**  Students are expected to master the sums and differences to 20 and to subsequently apply these skills to fluently add one-digit to two-digit numbers at least through 100 using place value understandings, properties of operations and the relation  ship between addition and subtraction. | | | | | |
| **Major Clusters:** | | | **2.OA.A – Represent and solve problems involving addition and subtraction. 2.OA.B – Add and subtract within 20**  **2.NBT.B – Use place value understanding and properties to add and subtract.** | | |
| Supporting Clusters: | | |  | | |
| Vocabulary | | | Make ten and subtract from ten, Ten plus, Number bond, Say Ten counting | | |
| **Domain** | **Cluster** | **Standard** | **Arizona’s College and Career Ready Standards** | **Explanations & Examples** | **Notes & Resources** |
| **2.OA** | **A** | **1** | Use addition and subtraction within 100 to solve one- and two-step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.  2.MP.1. Make sense of problems and persevere in solving them.  2.MP.2. Reason abstractly and quantitatively.  2.MP.3. Construct viable arguments and critique the reasoning of others.  2.MP.4. Model with mathematics. | Word problems that are connected to students’ lives can be used to develop fluency with addition and subtraction. Table 1 describes the four different addition and subtraction situations and their relationship to the position of the unknown.  Examples:   * Take From example: David had 69 stickers. He gave 37 to Susan. How many stickers does David have now? 69 – 37 = * Add To example: David had $37. His grandpa gave him some money for his birthday. Now he has $69. How much money did David’s grandpa give him? $37 + = $69 * Compare example: David has 63 stickers. Susan has 37 stickers. How many more stickers does David have than Susan? 69 – 37 = * Even though the modeling of the two problems above is different, the equation, 69 - 37 = \_?\_, can represent both situations (How many more do I need to make 69?) * Take from (Start Unknown) David had some stickers. He gave 37 to | **Engage NY**  M1 Lessons 1-8  Appears again in Unit 4.  **This unit primarily focuses on result**  **unknown and change unknown problem types.**  **enVision**  Topic 1,2,3,4  <http://www.bwcs.k12.az.us/> |

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|  |  |  | 2.MP.5. Use appropriate tools strategically.  2.MP.8. Look for and express regularity in repeated reasoning. | Susan. Now he has 32 stickers. How many stickers did David have before? - 37 = 32  It is important to attend to the difficulty level of the problem situations in relation to the position of the unknown.   * Result Unknown, Total Unknown, and Both Addends Unknown problems are the least complex for students. * The next level of difficulty includes Change Unknown, Addend Unknown, and Difference Unknown * The most difficult are Start Unknown and versions of Bigger and Smaller Unknown (compare problems)*.*   Second graders should work on ALL problem types regardless of the level of difficulty. Mastery is expected in second grade. Students can use interactive whiteboard or document camera to demonstrate and justify their thinking.  This standard focuses on developing an algebraic representation of a word problem through addition and subtraction --the intent is not to introduce traditional algorithms or rules. |  |
| **2.OA** | **B** | **2** | Fluently add and subtract within 20 using mental strategies. By end of Grade 2, know from memory all sums of two one- digit numbers. (Q1-Q4) See 1st grade standard: 1.OA.6 for a list of mental strategies  2.MP.2. Reason abstractly and quantitatively.  2.MP.7. Look for and make use of structure.  2.MP.8. Look for and express regularity in repeated reasoning. | This standard is strongly connected to all the standards in this domain. It focuses on students being able to fluently add and subtract numbers to   1. Adding and subtracting fluently refers to knowledge of procedures, knowledge of when and how to use them appropriately, and skill in performing them flexibly, accurately, and efficiently.   Mental strategies help students make sense of number relationships as they are adding and subtracting within 20. The ability to calculate mentally with efficiency is very important for all students. Mental strategies may include the following:   * + Counting on   + Making tens (9 + 7 = 10 + 6)   + Decomposing a number leading to a ten ( 14 – 6 = 14 – 4 – 2 = 10 – 2 = 8)   + Fact families (8 + 5 = 13 is the same as 13 - 8 = 5) | **Engage NY**  M1 Lessons 1-8  **enVision**  Topic 2,3  <http://www.bwcs.k12.az.us/> |

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|  |  |  |  | * Doubles * Doubles plus one (7 + 8 = 7 + 7 + 1)   However, the use of objects, diagrams, or interactive whiteboards, and various strategies will help students develop fluency. |  |
| **2.NBT** | **B** | **5** | Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.  2.MP.2. Reason abstractly and quantitatively.  2.MP.7. Look for and make use of structure.  2.MP.8. Look for and express regularity in repeated reasoning. | Adding and subtracting fluently refers to knowledge of procedures, knowledge of when and how to use them appropriately, and skill in performing them flexibly, accurately, and efficiently. Students should have experiences solving problems written both horizontally and vertically. They need to communicate their thinking and be able to justify their strategies both verbally and with paper and pencil.  **Addition strategies** based on place value for 48 + 37 may include:   * Adding by place value: 40 + 30 = 70 and 8 + 7 = 15 and 70 + 15 = 85. * Incremental adding (breaking one number into tens and ones); 48 + 10   = 58, 58 + 10 = 68, 68 + 10 = 78, 78 + 7 = 85   * Compensation (making a friendly number): 48 + 2 = 50, 37 – 2 = 35, 50 +   35 = 85  **Subtraction strategies** based on place value for 81 - 37 may include:   * Adding up (from smaller number to larger number): 37 + 3 = 40, 40 + 40   = 80, 80 + 1 = 81, and 3 + 40 + 1 = 44.  \* Incremental subtracting: 81 -10 = 71, 71 – 10 = 61, 61 – 10 = 51, 51 – 7 =  44   * Subtracting by place value: 81 – 30 = 51, 51 – 7 = 44   **Properties** that students should know and use are:   * Commutative property of addition (Example: 3 + 5 = 5 + 3) * Associative property of addition (Example: (2 + 7) + 3 = 2 + (7+3) ) * Identity property of 0 (Example: 8 + 0 = 8)   \*Commutative Property: In first grade, students investigated whether the commutative property works with subtraction. The intent was for students to recognize that taking 5 from 8 is not the same as taking 8 from 5. Students should also understand that they will be working | **Engage NY**  M1 Lessons 6-8  Appears again in Unit 4.  **enVision**  Topic 5,6,7,8,9  <http://www.bwcs.k12.az.us/> |

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|  |  |  |  | with numbers in later grades that will allow them to subtract larger numbers from smaller numbers. This exploration of the commutative property continues in second grade.  \*Associative Property: Recognizing that the associative property does not work for subtraction is difficult for students to consider at this grade level as it is challenging to determine all the possibilities. |  |
| **Addition and subtraction of Length Units**  **Approximately 10 Instructional Days: August 15, 2016 – August 26, 2016**  Students engage in activities designed to deepen their conceptual understanding of measurement and to relate addition and subtraction to length. **Their work is exclusively with metric units in order to support place value concepts.** Customary units will be introduced in quarter 3. | | | | | |
| **Major Clusters:** | | | **2.MD.A – Measure and estimate lengths in standard units. 2.MD.B – Relate addition and subtraction to length.** | | |
| Supporting Clusters: | | |  | | |
| Vocabulary | | | Endpoint, Overlap, Ruler, Centimeter, Meter, Meter strip, Meter stick, Hash mark, Number line, Estimate, Benchmark | | |
| **2.MD** | **A** | **1** | Measure the length of an object by selecting and using appropriate tools such as rulers, ~~yardsticks~~, meter sticks, and measuring tapes.  2.MP.5. Use appropriate tools strategically.  2.MP.6. Attend to precision. 2.MP.7. Look for and make use of structure. | Students in second grade will build upon what they learned in first grade from measuring length with non-standard units to the new skill of measuring length in metric with standard units of measure. They should have many experiences measuring the length of objects with rulers, meter sticks, and tape measures. They will need to be taught how to actually use a ruler appropriately to measure the length of an object especially as to where to begin the measuring. Do you start at the end of the ruler or at the zero? | **Engage NY**  M2 Lessons 1-10  Appears again in Unit 7.  **enVision**  Topic 15  <http://www.bwcs.k12.az.us/> |
| **2.MD** | **A** | **2** | 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. | Students need multiple opportunities to measure using different units of measure. They should not be limited to measuring within the same standard unit. The more students work with a specific unit of measure, the better they become at choosing the appropriate tool when measuring. | **Engage NY**  M2 Lessons 6-7  Appears again in Unit 7. |

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|  |  |  | 2.MP.2. Reason abstractly and quantitatively.  2.MP.3. Construct viable arguments and Critique the reasoning of others.  2.MP.5. Use appropriate tools strategically.  2.MP.6. Attend to precision. 2.MP.7. Look for and make use of structure. | Students measure the length of the same object using different tools (ruler with inches, ruler with centimeters, or meter stick). This will help students learn which tool is more appropriate for measuring a given object. They describe the relationship between the size of the measurement unit and the number of units needed to measure something. For instance, a student might say, "The longer the unit, the fewer I need." | **enVision**  Topic 15  <http://www.bwcs.k12.az.us/> |
| **2.MD** | **A** | **3** | Estimate lengths using units of ~~inches,~~ ~~feet~~, centimeters, and meters.  2.MP.5. Use appropriate tools strategically.  2.MP.6. Attend to precision. | Estimation helps develop familiarity with the specific unit of measure being used. To measure the length of a shoe, knowledge of an inch or a centimeter is important so that one can approximate the length in centimeters. Students should begin practicing estimation with items which are familiar to them (length of desk, pencil, favorite book, etc.). | **Engage NY**  M2 Lessons 4-5, 8-10  Appears again in Unit 7.  **enVision**  Topic 15  <http://www.bwcs.k12.az.us/> |
| **2.MD** | **A** | **4** | Measure to determine how much longer one object is than another, expressing the length difference in terms of a standard length unit.  2.MP.5. Use appropriate tools strategically.  2.MP.6. Attend to precision. | Second graders should be familiar enough with centimeters and meters to be able to compare the differences in lengths of two objects. They can make direct comparisons by measuring the difference in length between two objects by laying them side by side and selecting an appropriate standard length unit of measure.  Students should use comparative phrases such as, “It is longer by 2 meters” or “It is shorter by 5 centimeters” to describe the difference between two objects. An interactive whiteboard or document camera may be used to help students develop and demonstrate their thinking. | **Engage NY**  M2 Lessons 6-10  Appears again in Unit 7.  **enVision**  Topic 15  <http://www.bwcs.k12.az.us/> |
| **Domain** | **Cluster** | **Standard** | **Arizona’s College and Career Ready Standards** | **Explanations & Examples** | **Notes & Resources** |
| **2.MD** | **B** | **5** | Use addition and subtraction within 100 to solve word problems 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.MP.1. Make sense of problems and persevere in solving them.  2.MP.2. Reason abstractly and quantitatively.  2.MP.4. Model with mathematics. 2.MP.5. Use appropriate tools strategically.  2.MP.8. Look for and express regularity in repeated reasoning. | Students need experience working with addition and subtraction to solve word problems which include measures of length. It is important that word problems stay within the same unit of measure. Counting on and/or counting back on a number line will help tie this concept to previous knowledge. Some representations students can use include drawings, rulers, pictures, and/or physical objects. An interactive whiteboard or document camera may be used to help students develop and demonstrate their thinking. Equations include:  20 + 35 = c  c - 20 = 35  c – 35 = 20  20 + b = 55  35 + a = 55  55 = a + 35  55 = 20 + b  Example:   * A word problem for 5 – n = 2 could be: Mary is making a dress. She has 5 yards of fabric. She uses some of the fabric and has 2 yards left. How many yards did Mary use?   There is a strong connection between this standard and demonstrating fluency of addition and subtraction facts. Addition facts through 10 + 10 and the related subtraction facts should be included. | **Engage NY**  M2 Lessons 8-10  Appears again in Unit 7.  **enVision**  Topic 15  <http://www.bwcs.k12.az.us/> |

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| **2.MD** | **B** | **6** | Represent whole numbers as lengths from 0 on a number line diagram with equally spaced points corresponding to the numbers 0, 1, 2, ..., and represent whole- number sums and differences within 100 on a number line diagram.  2.MP.2. Reason abstractly and quantitatively.  2.MP.4. Model with mathematics. 2.MP.5. Use appropriate tools strategically. | Students represent their thinking when adding and subtracting within 100 by using a number line. An interactive whiteboard or document camera can be used to help students demonstrate their thinking.  Example: 10 – 6 = 4  2_md_6[1] | **Engage NY**  M2 Lessons 8-10  Appears again in Unit 7.  **enVision**  Topic 9  <http://www.bwcs.k12.az.us/> |

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| **Place Value, Counting, and Comparison of Numbers to 1,000**  **Approximately 25 instructional days: August 29, 2016 – October 7, 2016**  Students expand their skill with and understanding of units by bundling ones, tens, and hundreds up to a thousand with straws. Unlike the length of 10 centimeters, these bundles are discrete sets. One unit can be grabbed and counted just like a banana―1 hundred, 2 hundred, 3 hundred, etc. A number in Grade 1 generally consisted of two different units, tens and ones. Now, in Grade 2, a number generally consists of three units: hundreds, tens, and ones. The bundled units are organized by separating them largest to smallest, ordered from left to right. Instruction moves from physical bundles that show the proportionality of the units to non-proportional place value disks and to numerals on the place value chart. | | | | | | | | | | | |
| **Major Clusters:** | | | | | | **2.NBT.A – Understand place value.** | | | | | |
| Supporting Clusters: | | | | | |  | | | | | |
| Vocabulary | | | | | | Base ten numerals, Expanded form, Hundreds place, One thousand , Place value or number disk, Standard form, Word form | | | | | |
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| **2.NBT** | | **A** | | **1ab** | | 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 the following as special cases:  (A) 100 can be thought of as a bundle of ten tens — called a “hundred.” (B) 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.MP.2. Reason abstractly and quantitatively.  2.MP.7. Look for and make use of structure.  2.MP.8. Look for and express regularity in repeated reasoning. | | Understanding that 10 ones make one ten and that 10 tens make one hundred is fundamental to students’ mathematical development.  Students need multiple opportunities counting and bundling groups of tens in first grade. In second grade, students build on their understanding by making bundles of 100s with or without leftovers using base ten blocks, cubes in towers of 10, ten frames, etc. This emphasis on bundling hundreds will support students’ discovery of place value patterns.  As students are representing the various amounts, it is important that emphasis is placed on the language associated with the quantity. For example, 243 can be expressed in multiple ways such as 2 groups of hundred, 4 groups of ten and 3 ones, as well as 24 tens and 3 ones. It should be read as two hundred forty-three as well as two hundreds, 4 tens, 3 ones. When students read numbers, they should read in standard form as well as using place value concepts.  A document camera or interactive whiteboard can also be used to demonstrate “bundling” of objects. This gives students the opportunity to communicate their thinking. | | **Engage NY**  M3 Lessons 1-14  **enVision**  Topic 5,10  <http://www.bwcs.k12.az.us/> | |

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| **2.NBT** | **A** | **2** | Count within 1000; skip-count by 5s, 10s, and 100s.  2.MP.2. Reason abstractly and quantitatively.  2.MP.7. Look for and make use of structure.  2.MP.8. Look for and express regularity in repeated reasoning. | Students need many opportunities counting, up to 1000, from different starting points. They should also have many experiences skip counting by 5s, 10s, and 100s to develop the concept of place value.  **Examples:**   * The use of the 100s chart may be helpful for students to identify the counting patterns. * The use of money (nickels, dimes, dollars) or base ten blocks may be helpful visual cues. * The use of an interactive whiteboard may also be used to develop counting skills. The ultimate goal for second graders is to be able to count in multiple ways with no visual support. | **Engage NY**  M3 Lessons 2-3, 8-14,  19-21  **enVision**  Topic 5,6,10  <http://www.bwcs.k12.az.us/> |
| **2.NBT** | **A** | **3** | Read and write numbers to 1000 using base-ten numerals, number names, and expanded form.  2.MP.2. Reason abstractly and quantitatively.  2.MP.7. Look for and make use of structure.  2.MP.8. Look for and express regularity in repeated reasoning. | Students need many opportunities reading and writing numerals in multiple ways.  **Examples:**   * Base-ten numerals 637 (standard form) * Number names six hundred thirty seven (written form) * Expanded form 600 + 30 + 7 (expanded notation)   When students say the expanded form, it may sound like this: ―6 hundreds plus 3 tens plus 7 ones OR 600 plus 30 plus 7. | **Engage NY**  M3 Lessons 4-14  **enVision**  Topic 5,10  <http://www.bwcs.k12.az.us/> |
| **2.NBT** | **A** | **4** | Compare two three-digit numbers based on meanings of the hundreds, tens, and ones digits, using >, =, and < symbols to record the results of comparisons.  2.MP.2. Reason abstractly and quantitatively.  2.MP.6. Attend to precision. 2.MP.7. Look for and make use of structure.  2.MP.8. Look for and express regularity in repeated reasoning. | Students may use models, number lines, base ten blocks, interactive whiteboards, document cameras, written words, and/or spoken words that represent two three-digit numbers. To compare, students apply their understanding of place value. They first attend to the numeral in the hundreds place, then the numeral in tens place, then, if necessary, to the numeral in the ones place.  Comparative language includes but is not limited to: more than, less than, greater than, most, greatest, least, same as, equal to and not equal to.  Students use the appropriate symbols to record the comparisons. | **Engage NY**  M3 Lessons 11-18  **enVision**  Topic 5,10  <http://www.bwcs.k12.az.us/> |