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

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| **Second Grade Quarter 3 (46 days)** |
| **Problem Solving with Length, Money, and Data** **Approximately 25 Instructional Days: January 5 – February 17** Students have an opportunity to practice addition and subtraction strategies within 100 and problem-solving skills as they learn to work with various types of units within the contexts of length, money, and data. Students represent categorical and measurement data using picture graphs, bar graphs, and line plots. They revisit measuring and estimating length from quarter 1, though now using both metric and customary units. |
| **Major Clusters:** | **2.NBT.B – Use place value understanding and properties to add and subtract. 2.MD.A – Measure and estimate lengths in standard units.****2.MD.B – Relate addition and subtraction to length.** |
| Supporting Clusters: | 2.MD.C – Work with time and money. 2.MD.D – Represent and interpret data. |
| Vocabulary | Bar graph, Category, Data, Degree, Foot, Inch, Legend, Line plot, Picture graph, Scale, Survey, Symbol, Table, Thermometer, Yard |
| **Domain** | **Cluster** | **Standard** | **Arizona’s College and Career Ready Standards** | **Explanations & Examples** | **Notes & Resources** |
| **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 | **Engage NY**M7 Lessons 6-13, 20-22**enVision**Topic 5,6,7,8,9<http://www.bwcs.k12.az.us/> |

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|  |  |  |  | **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 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. |  |
| **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. | 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 and U.S. Customary with standard units of measure. They should have many experiences measuring the length of objects with rulers, yardsticks, 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 | **Engage NY**M7 Lessons 14-19, 23-26**enVision**Topic 15<http://www.bwcs.k12.az.us/> |



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|  |  |  | 2.MP.6. Attend to precision. 2.MP.7. Look for and make use of structure. | you start at the end of the ruler or at the zero? |  |
| **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.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 need multiple opportunities to measure using different units of measure. They should not be limited to measuring within the same standard unit. Students should have access to tools, both U.S. Customary and metric. The more students work with a specific unit of measure, the better they become at choosing the appropriate tool when measuring.Students measure the length of the same object using different tools (ruler with inches, ruler with centimeters, a yardstick, 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." Multiple opportunities to explore provide the foundation for relating metric units to customary units, as well as relating within customary (inches to feet to yards) and within metric (centimeters to meters). | **Engage NY**M7 Lessons 16-19**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 inches or centimeters. Students should begin practicing estimation with items which are familiar to them (length of desk, pencil, favorite book, etc.).Some useful benchmarks for measurement are:* First joint to the tip of a thumb is about an inch
* Length from your elbow to your wrist is about a foot
* If your arm is held out perpendicular to your body, the length from your nose to the tip of your fingers is about a yard
 | **Engage NY**M7 Lessons 16-19**enVision**Topic 15<http://www.bwcs.k12.az.us/> |

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| **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 inches, feet, yards, 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 inches” 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**M7 Lessons 16-19**enVision**Topic 15<http://www.bwcs.k12.az.us/> |
| **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**M7 Lessons 20-26**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 = 42_md_6[1] | **Engage NY**M7 Lessons 20-26**enVision**Topic 9<http://www.bwcs.k12.az.us/> |
| 2.MD | C | 8 | Solve word problems involving dollar bills, quarters, dimes, nickels, and pennies, using $ and ¢ symbols appropriately.Example: If you have 2 dimes and 3 pennies, how many cents do you have?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. | Since money is not specifically addressed in kindergarten, first grade, or third grade, students should have multiple opportunities to identify, count, recognize, and use coins and bills in and out of context. They should also experience making equivalent amounts using both coins and bills. “Dollar bills” should include denominations up to one hundred ($1.00, $5.00, $10.00, $20.00, $100.00).Students should solve story problems connecting the different representations. These representations may include objects, pictures, charts, tables, words, and/or numbers. Students should communicate their mathematical thinking and justify their answers. An interactive whiteboard or document camera may be used to help students demonstrate and justify their thinking.**Example:*** Sandra went to the store and received $ 0.76 in change. What are three different sets of coins she could have received?
 | **Engage NY**M7 Lessons 6-13**enVision**Topic 13,14<http://www.bwcs.k12.az.us/> |
| 2.MD | D | 9 | Generate measurement data by measuring lengths of several objects to the nearest whole unit, or by making repeated measurements of the same object. Show the measurements by | This standard emphasizes representing data using a line plot. Students will use the measurement skills learned in earlier standards to measure objects. Line plots are first introduced in this grade level. A line plot can be thought of as plotting data on a number line. An interactive whiteboard may be used to create and/or model line plots. | **Engage NY**M7 Lessons 23-26 |



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|  |  |  | making a line plot, where the horizontal scale is marked off in whole-number units.2.MP.4. Model with mathematics. 2.MP.5. Use appropriate tools strategically.2.MP.6. Attend to precision.2.MP.8. Look for and express regularity in repeated reasoning. |  | **enVision**Topic 16<http://www.bwcs.k12.az.us/> |
| 2.MD | D | 10 | 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.6.* Attend to precision.*2.MP.8.* Look for and express regularity in repeated reasoning. | Students should draw both picture and bar graphs representing data that can be sorted up to four categories using single unit scales (e.g., scales should count by ones). The data should be used to solve put together, take-apart, and compare problems as listed in Table 1.In second grade, picture graphs (pictographs) include symbols that represent single units. Pictographs should include a title, categories, category label, key, and data.C:\Users\mknuck\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\OCVG825A\2_md_10[1].gif | **Engage NY**M7 Lessons 1-5**enVision**Topic 16<http://www.bwcs.k12.az.us/> |
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|  |  |  |  | Second graders should draw both horizontal and vertical bar graphs. Bar graphs include a title, scale, scale label, categories, category label, and data. C:\Users\mknuck\Desktop\2MD10.2.bmp C:\Users\mknuck\Desktop\2MD10.bmp |  |
| **Time, Shapes, and Fractions as Equal Parts of Shapes****Approximately 15 Days – Begin February 21 – March 31**Students extend their understanding of part–whole relationships through the lens of geometry. As students compose and decompose shapes, they begin to develop an understanding of unit fractions as equal parts of a whole. |
| **Major Clusters:** |  |
| **Supporting Clusters:** | 2.MD.C – Work with time and money.2.G.A – Reason with shapes and their attributes. |
| **Vocabulary** | a.m./p.m., Analog clock, Angle, Digital clock, Parallel, Parallelogram, Polygon, triangle, pentagon, hexagon, Quadrilateral, square, rhombus, rectangle, parallelogram, trapezoid, Quarter past, quarter to, Right angle, Second, Third of, thirds, Whole, 2 halves, 3 thirds, 4 fourths |
| 2.MD | C | 7 | Tell and write time from analog and digital clocks to the nearest five minutes, usinga.m. and p.m. | In first grade, students learned to tell time to the nearest hour and half- hour. Students build on this understanding in second grade by skip- counting by 5 to recognize 5-minute intervals on the clock. They need exposure to both digital and analog clocks. It is important that they can recognize time in both formats and communicate their understanding of time using both numbers and language. Common time phrases include the following: quarter till , quarter after , ten till , ten after , and half past .Students should understand that there are 2 cycles of 12 hours in a day -a.m. and p.m. Recording their daily actions in a journal would be helpful for making real-world connections and understanding the difference between these two cycles. An interactive whiteboard or document | **Engage NY**M8 Lessons 13-16**enVision**Topic 16<http://www.bwcs.k12.az.us/> |

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|  |  |  |  | camera may be used to help students demonstrate their thinking. |  |
| 2.G | A | 1 | Recognize and draw shapes having specified attributes, such as a given number of angles or a given number of equal faces. Identify triangles, quadrilaterals, pentagons, hexagons, and cubes.2.MP.4. Model with mathematics. 2.MP.7. Look for and make use of structure. | Students identify, describe, and draw triangles, quadrilaterals, pentagons, and hexagons. Pentagons, triangles, and hexagons should appear as both regular (equal sides and equal angles) and irregular. Students recognize all four sided shapes as quadrilaterals. Students use the vocabulary word angle, in place of corner but they do not need to name angle types.Interactive whiteboards and document cameras may be used to help identify shapes and their attributes. Shapes should be presented in a variety of orientations and configurations.2_g_1 | **Engage NY**M8 Lessons 1-10**enVision**Topic 12<http://www.bwcs.k12.az.us/> |

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| **2.G** | **A** | **3** | Partition circles and rectangles into two, three, or four equal shares, 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 shares of identical wholes need not have the same shape.2.MP.2. Reason abstractly and quantitatively.2.MP.3. Construct viable arguments and critique the reasoning of others.2.MP.6. Attend to precision.2.MP.8. Look for and express regularity in repeated reasoning. | This standard introduces fractions in an area model. Students need experiences with different sizes, circles, and rectangles. For example, students should recognize that when they cut a circle into three equal pieces, each piece will equal one third of its original whole.In this case, students should describe the whole as three thirds. If a circle is cut into four equal pieces, each piece will equal one fourth of its original whole and the whole is described as four fourths.2G3.1 2G3.2Students should see circles and rectangles partitioned in multiple ways so they learn to recognize that equal shares can be different shapes within the same whole. An interactive whiteboard may be used to show partitions of shapes.2_g_3 2_g_3_2 | **Engage NY**M8 Lessons 6-16**enVision**not taught<http://www.bwcs.k12.az.us/> |