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

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| **First Grade Quarter 4 (45 days)** |
| **Measurement and Data****Approximately 10 Instructional Days –March 20th – March 31st**Students develop an understanding of the meaning and processes of measurement by making direct length comparison to indirect comparison whereby the length of one object is used to compare the lengths of two other objects. Longer than and shorter than are taken to a new level of precision by introducing the idea of a length unit. Students explore the usefulness of measuring with similar units. Students represent and interpret data and tell time to the hour and half-hour. |
| **Major Clusters:** | **1.MD.A – Measure lengths indirectly and by iterating length units.** |
| Supporting Clusters: | 1.MD.B – Tell and write time.1.MD.C- Organize, represent, and interpret data1.OA.1 – Use addition and subtraction within 201. |
| Vocabulary | Nonstandard units, length, longer than, shorter than, minute, hour, half-hour, half past o’clock, graph, data, more than, less than, fewer than  |
| **Domain** | **Cluster** | **Standard** | **Arizona’s College and Career Ready Standards** | **Explanations & Examples** | **Notes & Resources** |
| **1.MD** | **A** | **1** | Order three objects by length; compare the lengths of two objects indirectly by using a third object.*1.MP.6*. Attend to precision. *1.MP.7*. Look for and make use of structure. | In order for students to be able to compare objects, students need to understand that length is measured from one end point to another end point. They determine which of two objects is longer, by physically aligning the objects. Typical language of length includes taller, shorter, longer, and higher. When students use bigger or smaller as a comparison, they should explain what they mean by the word. Some objects may have more than one measurement of length, so students identify the length they are measuring. Both the length and the width of an object are measurements of length.**Examples for ordering**:* Order three students by their height
* Order pencils, crayons, and/or markers by length

Build three towers (with cubes) and order them from shortest to | **Engage NY**M3 Lessons 1-6**enVision**Topic 12<http://www.bwcs.k12.az.us/> |
| **Domain** | **Cluster** | **Standard** | **Arizona’s College and Career Ready Standards** | **Explanations & Examples** | **Notes & Resources** |
|  |  |  |  | tallest* Three students each draw one line, then order the lines from longest to shortest

**Example for comparing indirectly**:* Two students each make a dough “snake.” Given a tower of cubes, each student compares his/her snake to the tower. Then students make statements such as, “My snake is longer than the cube tower and your snake is shorter than the cube tower. So, my snake is longer than your snake.”

Students may use an interactive whiteboard or document camera to demonstrate and justify comparisons. |  |
| **1.MD** | **A** | **2** | 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.MP.5.* Use appropriate tools strategically.*1.MP.6.* Attend to precision. *1.MP.7.* Look for and make use of structure. | Students use their counting skills while measuring with non-standard units. While this standard limits measurement to whole numbers of length, in a natural environment, not all objects will measure to an exact whole unit. When students determine that the length of a pencil is six to seven paperclips long, they can state that it is about six paperclips long. **Example**:* Ask students to use multiple units of the same object to measure the length of a pencil.

(How many paper clips will it take to measure how long the pencil is?)pencilStudents may use the document camera or interactive whiteboard to demonstrate their counting and measuring skills. | **Engage NY**M3 Lessons 4-9**enVision**Topic 12<http://www.bwcs.k12.az.us/> |
| 1.MD | B | 3 | Tell and write time in hours and half-hours using analog and digital clocks.*1.MP.5.* Use appropriate tools strategically.*1.MP.6.* Attend to precision. *1.MP.7.* Look for and make use of structure. | Ideas to support telling time:* within a day, the hour hand goes around a clock twice (the hand moves only in one direction)
* when the hour hand points exactly to a number, the time is exactly on the hour
* time on the hour is written in the same manner as it appears on a digital clock
* the hour hand moves as time passes, so when it is half way between two numbers it is at the half hour
* there are 60 minutes in one hour; so halfway between an hour, 30 minutes have passed
* half hour is written with “30” after the colon “It is 4 o’clock”

1“It is halfway between 8 o’clock and 9 o’clock. It is 8:30.”1The idea of 30 being “halfway” is difficult for students to grasp. Students can write the numbers from 0 - 60 counting by tens on a sentence strip. Fold the paper in half and determine that halfway between 0 and 60 is30. A number line on an interactive whiteboard may also be used to demonstrate this. | **Engage NY**M4 Lessons 10-13Appears again in Unit 6.**enVision**Topic 13<http://www.bwcs.k12.az.us/> |

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| 1.MD | C | 4 | 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.MP.2.* Reason abstractly and quantitatively.*1.MP.3.* Construct viable arguments and critique the reasoning of others.*1.MP.4.* Model with mathematics. *1.MP.5*. Use appropriate tools strategically.*1.MP.6.* Attend to precision. | Students create object graphs and tally charts using data relevant to their lives (e.g., favorite ice cream, eye color, pets, etc.). Graphs may be constructed by groups of students as well as by individual students.Counting objects should be reinforced when collecting, representing, and interpreting data. Students describe the object graphs and tally charts they create. They should also ask and answer questions based on these charts or graphs that reinforce other mathematics concepts such as sorting and comparing. The data chosen or questions asked give students opportunities to reinforce their understanding of place value, identifying ten more and ten less, relating counting to addition and subtraction and using comparative language and symbols.Students may use an interactive whiteboard to place objects onto a graph. This gives them the opportunity to communicate and justify their thinking. | **Engage NY**M3 Lessons 10-13**enVision**Topic 14<http://www.bwcs.k12.az.us/> |
| **Identifying, Composing, and Partitioning Shapes** **Approximately 7 Instructional Days – April 3rd – April 11th** Module 4 builds upon Unit 2’s work with place value within 20, now focusing on the role of place value in the addition and subtraction of numbers to 40. Students study, organize, and manipulate numbers within 40. They compare quantities and begin using the symbols for greater than (>) and less than (<). Addition and subtraction of tens is another focus of this module as is the use of familiar strategies to add two-digit and single-digit numbers within 40. Near the end of the module, the focus moves to new ways to represent larger quantities and adding like place value units as students add two-digit numbers. |
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| **Major Clusters:** |  |
| Supporting Clusters: | 1.G.A – Reason with shapes and their attributes. |
| Vocabulary | Attributes, Fourth of, Fourths, Half of, Halves, Half past, Half-hour, Hour, Minute, O’clock, Quarter of, Cone, Cube, Cylinder, Rectangular Prism, Sphere, Circle, Half-circle, Quarter-circle, Hexagon, Rectangle, Rhombus, Square, Trapezoid, Triangle |

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| 1.G | A | 1 | 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.MP.1.* Make sense of problems and persevere in solving them.*1.MP.3.* Construct viable arguments and critique the reasoning of others.*1.MP.4*. Model with mathematics. *1.MP.7*. Look for and make use of structure. | Attributes refer to any characteristic of a shape. Students use attribute language to describe a given two-dimensional shape: number of sides, number of vertices/points, straight sides, closed. A child might describe a triangle as “right side up” or “red.” These attributes are not defining because they are not relevant to whether a shape is a triangle or not.Students should articulate ideas such as, “A triangle is a triangle because it has three straight sides and is closed.” It is important that students are exposed to both regular and irregular shapes so that they can communicate defining attributes. Students should use attribute language to describe why these shapes are not triangles.1Students should also use appropriate language to describe a given three- dimensional shape: number of faces, number of vertices/points, number of edges.**Example**:* A cylinder may be described as a solid that has two circular faces connected by a curved surface (which is not considered a face). Students may say, “It looks like a can.”

Students should compare and contrast two-and three-dimensional figuresusing defining attributes.**Examples**:* List two things that are the same and two things that are different between a triangle and a cube.
* Given a circle and a sphere, students identify the sphere as being three-dimensional but both are round.
* Given a trapezoid, find another two-dimensional shape that has two things that are the same.

Students may use interactive whiteboards or computer environments to move shapes into different orientations and to enlarge or decrease the size of a shape still keeping the same shape. They can also move a point/vertex of a triangle and identify that the new shape is still a triangle. When they move one point/vertex of a rectangle they should recognize that the resulting shape is no longer a rectangle. | **Engage NY**M5 Lessons 1-3**enVision**Topic 15<http://www.bwcs.k12.az.us/> |

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| **Domain** | **Cluster** | **Standard** | **Arizona’s College and Career Ready Standards** | **Explanations & Examples** | **Notes & Resources** |
| 1.G | A | 2 | 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. (Students do not need to learn formal names such as “right rectangular prism.”)*1.MP.1.* Make sense of problems and persevere in solving them.*1.MP.4.* Model with mathematics. *1.MP.7*. Look for and make use of structure. | The ability to describe, use and visualize the effect of composing and decomposing shapes is an important mathematical skill. It is not only relevant to geometry, but is related to children’s ability to compose and decompose numbers. Students may use pattern blocks, plastic shapes, tangrams, or computer environments to make new shapes. The teacher can provide students with cutouts of shapes and ask them to combine them to make a particular shape.**Example**:* What shapes can be made from four squares?

1 413 a 1 413 bStudents can make three-dimensional shapes with clay or dough, slice into two pieces (not necessarily congruent) and describe the two resulting shapes. For example, slicing a cylinder will result in two smaller cylinders. | **Engage NY**M5 Lessons 4-6**enVision**Topic 15<http://www.bwcs.k12.az.us/> |
| 1.G | A | 3 | 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.MP.2*. Reason abstractly and quantitatively.*1.MP.3.* Construct viable arguments and critique the reasoning of others.*1.MP.6.* Attend to precision.*1.MP.7.* Look for and make use of structure. | Students need experiences with different sized circles and rectangles to recognize that when they cut something into two equal pieces, each piece will equal one half of its original whole. Children should recognize that halves of two different wholes are not necessarily the same size. Also they should reason that decomposing equal shares into more equal shares results in smaller equal shares.**Examples**:* Student partitions a rectangular candy bar to share equally with one friend and thinks “I cut the rectangle into two equal parts. When I put the two parts back together, they equal the whole candy bar. One half of the candy bar is smaller than the whole candy bar.”

1* Student partitions an identical rectangular candy bar to share equally with 3 friends and thinks “I cut the rectangle into four equal parts. Each piece is one fourth of or one quarter of the whole candy bar. When I put the four parts back together, they equal the whole candy bar. I can compare the pieces (one half and one fourth) by placing them side-by-side. One fourth of the candy bar is smaller than one half of the candy bar.

1 * Students partition a pizza to share equally with three friends. They recognize that they now have four equal pieces and each will receive a fourth or quarter of the whole pizza.

1 | **Engage NY**M4 Lessons 7-13**enVision**Topic 16<http://www.bwcs.k12.az.us/> |

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| **Place Value, Comparison, Addition and Subtraction to 100****Approximately 20 Instructional Days – April 12th – May 12th** Students develop, discuss, and use efficient, accurate, and generalizable methods to add within 100 and subtract multiples of 10. They compare whole numbers 9at least to 100) to develop understanding of and solve problems involving their relative sizes. They think of whole numbers between 10 and 100 in terms of tens and ones (especially recognizing the numbers composed of tens and some ones). Through activities that build number sense, they understand the order of the counting numbers and their relative magnitudes.  |
| **Major Clusters:** | **1.OA.A – Represent and solve problems involving addition and subtraction. 1.NBT.A – Work with numbers 11-19 to gain foundations for place value.****1.NBT.B – Understand place value.****1.NBT.C – Use place value understanding and properties to add and subtract.** |
| Supporting Clusters: |  |
| Vocabulary | Place value, tens, ones, addition, subtraction, compose, decompose, more than, less than, greater than, most, greatest, least, same as, equal to, not equal to |
| **Domain** | **Cluster** | **Standard** | **Arizona’s College and Career Ready Standards** | **Explanations & Examples** | **Notes & Resources** |
| **1.OA** | **A** | **1** | 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.MP.1.* Make sense of problems and persevere in solving them.*1.MP.2.* Reason abstractly and quantitatively.*1.MP.3.* Construct viable arguments and critique the reasoning of others.*1.MP.4.* Model with mathematics.*1.MP.5.* Use appropriate tools | Contextual problems that are closely connected to students’ lives should 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. 1st grade students should have experiences with **all** problem situations in Table 1. Students use objects, drawings, or numbers to represent the different situations.* Take From example: Abel has 9 apples. He gave 3 to Susan. How many apples does Abel have now?
* Compare example: Abel has 9 apples. Susan has 3 apples. How many more apples does Abel have than Susan? A student will use 9 objects to represent Abel’s 9 apples and 3 objects to represent Susan’s 3 apples. Then they will compare the 2 sets of objects.

Note that even though the modeling of the two problems above is different, the equation, 9 - 3 = ?, can represent both situations yet the compare example can also be represented by 3 + ? = 9 (How many more do I need to make 9?). | **Engage NY**M6 Lessons 1-2, 25-27**enVision**Topic 1,2,4,5<http://www.bwcs.k12.az.us/> |

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|  |  |  | strategically.*1.MP.8.* Look for and express regularity in repeated reasoning. | 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).

Students may use document cameras to display their combining or separating strategies. This gives them the opportunity to communicate and justify their thinking. |  |
| **1.NBT** | **A** | **1** | 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.MP.2*. Reason abstractly and quantitatively.*1.MP.7*. Look for and make use of structure.*1.MP.8.* Look for and express regularity in repeated reasoning. | Students use objects, words, and/or symbols to express their understanding of numbers. They extend their counting beyond 100 to count up to 120 by counting by 1s. Some students may begin to count in groups of 10 (while other students may use groups of 2s or 5s to count). Counting in groups of 10 as well as grouping objects into 10 groups of 10 will develop students’ understanding of place value concepts.Students extend reading and writing numerals beyond 20 to 120. Students should experience counting from different starting points (e.g., start at 83; count to 120). To extend students’ understanding of counting, they should be given opportunities to count backwards by ones and tens. They should also investigate patterns in the base 10 system. | **Engage NY**M6 Lessons 3-9**enVision**Topic 7,9<http://www.bwcs.k12.az.us/> |
| **1.NBT** | **B** | **2** | Understand that the two digits of a two- digit number represent amounts of tens and ones. Understand the following as special cases:1. 10 can be thought of as a bundle of ten ones — called a “ten.”
2. The numbers from 11 to 19 are composed of a ten and one, two, three, four, five, six, seven, eight, or nine ones.
3. 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.MP.2*. Reason abstractly and quantitatively.*1.MP.7.* Look for and make use of structure.1. *1.MP.8*. Look for and express regularity in repeated reasoning.
 | Understanding the concept of 10 is fundamental to children’s mathematical development. Students need multiple opportunities counting 10 objects and “bundling” them into one group of ten. They count between 10 and 20 objects and make a bundle of 10 with or without some left over (this will help students who find it difficult to write teen numbers). Finally, students count any number of objects up to 99, making bundles of 10s with or without leftovers.As students are representing the various amounts, it is important that an emphasis is placed on the language associated with the quantity. For example, 53 should be expressed in multiple ways such as 53 ones, 5 groups of ten with 3 ones, or 4 tens and 13 ones . When students read numbers, they read them in standard form as well as using place value concepts. For example, 53 should be read as “fifty-three” as well as five tens, 3 ones. Reading 10, 20, 30, 40, 50 as “one ten, 2 tens, 3 tens, etc.” helps students see the patterns in the number system.Students may use the document camera or interactive whiteboard to demonstrate their “bundling” of objects. This gives them the opportunity to communicate their thinking. | **Engage NY**M6 Lessons 3-9**enVision**Topic 8<http://www.bwcs.k12.az.us/> |
| **1.NBT** | **B** | **3** | Compare two two-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons with the symbols >, =, and <.*1.MP.2.* Reason abstractly and quantitatively.*1.MP.6.* Attend to precision. *1.MP.7.* Look for and make use of structure.*1.MP.8.* Look for and express regularity in repeated reasoning. | Students use models that represent two sets of numbers. To compare, students first attend to the number of tens, then, if necessary, to the number of ones. Students may also use pictures, number lines, and spoken or written words to compare two numbers. 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. | **Engage NY**M6 Lessons 3-9**enVision**Topic 9<http://www.bwcs.k12.az.us/> |

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| **1.NBT** | **C** | **4** | 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.MP.2.* Reason abstractly and quantitatively.*1.MP.3.* Construct viable arguments and critique the reasoning of others.*1.MP.4*. Model with mathematics. *1.MP.7.* Look for and make use of structure.*1.MP.8.* Look for and express regularity in repeated reasoning. | Students extend their number fact and place value strategies to add within 100. They represent a problem situation using any combination of words, numbers, pictures, physical objects, or symbols. It is important for students to understand if they are adding a number that has 10s to a number with 10s, they will have more tens than they started with; the same applies to the ones. Also, students should be able to apply their place value skills to decompose numbers. For example, 17 + 12 can be thought of 1 ten and 7 ones plus 1 ten and 2 ones.Students should be exposed to problems both in and out of context and presented in horizontal and vertical forms. As students are solving problems, it is important that they use language associated with proper place value. They should always explain and justify their mathematical thinking both verbally and in a written format. Estimating the solutionprior to finding the answer focuses students on the meaning of the operation and helps them attend to the actual quantities. **The intent is not to introduce traditional algorithms or rules.****Examples**: 43 + 36Student counts the 10s (10, 20, 30…70 or 1, 2, 3…7 tens) and then the 1s.1 | **Engage NY**M6 Lessons 10-19**enVision**Topic 9,10<http://www.bwcs.k12.az.us/> |

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| **Domain** | **Cluster** | **Standard** | **Arizona’s College and Career Ready Standards** | **Explanations & Examples** | **Notes & Resources** |
|  |  |  |  |  28+34Student thinks: 2 tens plus 3 tens is 5 tens or 50. S/he counts the ones and notices there is another 10 plus 2 more. 50 and 10 is 60 plus 2 moreor 62. 45 + 18Student thinks: Four 10s and one 10 are 5 tens or 50. Then 5 and 8 is 5 + 5+ 3 (or 8 + 2 + 3) or 13. 50 and 13 is 6 tens plus 3 more or 631 29+14Student thinks: “29 is almost 30. I added one to 29 to get to 30. 30 and 14 is 44. Since I added one to 29, I have to subtract one so the answer is 43. |  |

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| **1.NBT** | **C** | **5** | Given a two-digit number, mentally find 10 more or 10 less than the number, without having to count; explain the reasoning used.*1.MP.2.* Reason abstractly and quantitatively.*1.MP.3.* Construct viable arguments and critique the reasoning of others.*1.MP.7.* Look for and make use of structure.*1.MP.8.* Look for and express regularity in repeated reasoning. | This standard requires students to understand and apply the concept of 10 which leads to future place value concepts. It is critical for students to do this without counting. Prior use of models such as base ten blocks, number lines, and 100s charts helps facilitate this understanding. It also helps students see the pattern involved when adding or subtracting 10. **Examples**:* 10 more than 43 is 53 because 53 is one more 10 than 43
* 10 less than 43 is 33 because 33 is one 10 less than 43

Students may use interactive versions of models (base ten blocks, 100s charts, number lines, etc.) to develop prior understanding. | **Engage NY**M6 Lessons 3-9**enVision**Topic 9<http://www.bwcs.k12.az.us/> |
| **1.NBT** | **C** | **6** | 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.MP.2.* Reason abstractly and quantitatively.*1.MP.3.* Construct viable arguments and critique the reasoning of others.*1.MP.4.* Model with mathematics. *1.MP.5*. Use appropriate tools strategically.*1.MP.7.* Look for and make use of structure.1*.MP.8.* Look for and express regularity in repeated reasoning. | This standard is foundational for future work in subtraction with more complex numbers. Students should have multiple experiences representing numbers that are multiples of 10 (e.g. 90) with models or drawings. Then they subtract multiples of 10 (e.g. 20) using these representations or strategies based on place value. These opportunities develop fluency of addition and subtraction facts and reinforce counting up and back by 10s.**Examples**:* 70 - 30: Seven 10s take away three 10s is four 10s

 80 - 50: 80, 70 (one 10), 60 (two 10s), 50 (three 10s), 40 (four 10s), 30 (five 10s)* 60 - 40: I know that 4 + 2 is 6 so four 10s + two 10s is six 10s so 60

- 40 is 20Students may use interactive versions of models (base ten blocks, 100s charts, number lines, etc.) to demonstrate and justify their thinking. | **Engage NY**M6 Lessons 10-17**enVision**Topic 11<http://www.bwcs.k12.az.us/> |