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

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| **First Grade Quarter 1 (46 days)** |
| **Sums and Differences to 10****Approximately 40 Instructional days –August 2nd-October 7th**In Grade 1 students make significant progress towards fluency with addition and subtraction of numbers to 10 as they are presented with opportunities intended to advance them from counting all to counting on which leads many students then to decomposing and composing addends and total amounts. |
| **Major Clusters:** | **1.OA.A –Represent and solve problems involving addition and subtraction.****1.OA.B – Understand and apply properties of operations and the relationship between addition and subtraction 1.OA.C – Add and subtract within 20.****1.OA.D – Work with addition and subtraction equations.** |
| Supporting Clusters: |  |
| Vocabulary | Count on, Track, Expression, Addend, Doubles, Doubles plus 1 |
| **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 | 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 | **Engage NY**M1 Lessons 4-13, 25-32Appears again in Module 2, 3, 4 and 6.**Numbers in this unit are within 10.****Students begin working on numbers within 20 in Module 2.** |

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|  |  |  | critique the reasoning of others.*1.MP.4.* Model with mathematics.*1.MP.5.* Use appropriate tools strategically. *1.MP.8.* Look for and express regularity in repeated reasoning. | compare example can also be represented by 3 + ? = 9 (How many more do I need to make 9?).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. | **enVision**Topics 1,2,4,5<http://www.bwcs.k12.az.us/> |
| **1.OA** | **B** | **3** | Apply properties of operations as strategies to add and subtract. *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.) (*Students need not use formal terms for these properties.)*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 should understand the important ideas of the following properties:* Identity property of addition (e.g., 6 = 6 + 0)
* Identity property of subtraction (e.g., 9 – 0 = 9)
* Commutative property of addition (e.g., 4 + 5 = 5 + 4)
* Associative property of addition (e.g., 3 + 9 + 1 = 3 + 10)

Students need several experiences investigating whether the commutative property works with subtraction. The intent is not for students to experiment with negative numbers but only to recognize that taking 5 from 8 is not the same as taking 8 from 5. Students should recognize that they will be working with numbers later on that will allow them to subtract larger numbers from smaller numbers. However, in first grade we do not work with negative numbers. | **Engage NY**M1 Lessons 17-24 Appears again in Module 2.**Numbers in this module are within 10. Students begin working on numbers within 20 in M2.****enVision**Topic 1,4,5<http://www.bwcs.k12.az.us/> |

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| **1.OA** | **B** | **4** | Understand subtraction as an unknown- addend problem. *For example, subtract 10**– 8 by finding the number that makes 10 when added to 8.**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. | When determining the answer to a subtraction problem, 12 - 5, students think, “If I have 5, how many more do I need to make 12?” Encouraging students to record this symbolically, 5 + ? = 12, will develop their understanding of the relationship between addition and subtraction.Some strategies they may use are counting objects, creating drawings, counting up, using number lines or 10 frames to determine an answer. | **Engage NY**M1 Lessons 25-37Appears again in Module 2.**Numbers in this unit****Are within 10.** **Students begin working on numbers within 20 in Unit 2.****enVision**Topic 2,3,4,5<http://www.bwcs.k12.az.us/> |
| **1.OA** | **C** | **5** | Relate counting to addition and subtraction (e.g., by counting on 2 to add 2).*1.MP.7.* Look for and make use of structure. *1.MP.8*. Look for and express regularity in repeated reasoning | Students may need help connecting ‘counting on’ with addition and ‘counting back’ with subtraction. When students count on 3 from 4, (5, 6, 7) they should write this as 4 + 3 = 7. When students count back(3) from 7, (6, 5, 4) they should connect this to 7 – 3 = 4. Students often have difficulty knowing **where** to begin their count when counting backward. | **Engage NY**M1 Lessons 4-16, 25-37**enVision**Topic 3,4<http://www.bwcs.k12.az.us/> |
| **Domain** | **Cluster** | **Standard** | **Arizona’s College and Career Ready Standards** | **Explanations & Examples** | **Notes & Resources** |
| **1.OA** | **C** | **6** | Add and subtract within 20, demonstrating fluency for addition and subtraction within10. 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.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. | 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 10 and having experiences adding and subtracting within 20 using mental strategies. By studying patterns and relationships in addition facts and relating addition and subtraction, students build a foundation for fluency with addition and subtraction facts. 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. The use of objects, diagrams, or interactive whiteboards and various strategies will help students develop fluency. | **Engage NY**M1 Lessons 1-16, 21-24, 33-39Appears again in Module 2.**Numbers in this unit are within 10.****Students begin working on numbers within 20 in Unit 2.****enVision**Topic 2,3,4,5<http://www.bwcs.k12.az.us/> |

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| **1.OA** | **D** | **7** | 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.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. | to be able to:* Express their understanding of the meaning of the equal sign
* Accept sentences other than a + b = c as true (a = a, c = a + b, a = a + 0,

a + b = b + a)* Know that the equal sign represents a relationship between two equal quantities
* Compare expressions without calculating

These key skills are hierarchical in nature and need to be developed over time. Experiences determining if equations are true or false help student develop these skills. Initially, students develop an understanding of the meaning of equality using models. However, the goal is for students to reason at a more abstract level. At all times students should justify their answers, make conjectures (e.g., if you add a number and then subtract that same number, you always get zero), and make estimations. Once students have a solid foundation of the key skills listed above, they can begin to rewrite true/false statements using the symbols, < and >. Examples of true and false statements: 7 = 8 – 1  8 = 8 1 + 1 + 3 =7 4 + 3 = 3 + 4 6 – 1 = 1 – 6 12 + 2 – 2 = 12 9 + 3 = 10 5 + 3 = 10 – 2 3 + 4 + 5 = 3 + 5 + 4 3 + 4 + 5 = 7 + 5 13 = 10 + 4 10 + 9 + 1 = 19Students can use a clicker (electronic response system) or interactive whiteboard to display their responses to the equations. This gives them the opportunity to communicate and justify their thinking. | **Engage NY**M1 Lessons 17-20**enVision**Topic 2<http://www.bwcs.k12.az.us/> |
| **Domain** | **Cluster** | **Standard** | **Arizona’s College and Career Ready Standards** | **Explanations & Examples** | **Notes & Resources** |
| **1.OA** | **D** | **8** | 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.MP.2.* Reason abstractly and quantitatively.*1.MP.6.* Attend to precision.*1.MP.7.* Look for and make use of structure. | Students need to understand the meaning of the equal sign and know that the quantity on one side of the equal sign must be the same quantity on the other side of the equal sign. They should be exposed to problems with the unknown in different positions. Having students create word problems for given equations will help them make sense of the equation and develop strategic thinking.Examples of possible student “think-throughs”:* *8 + ? = 11*: “8 and some number is the same as 11. 8 and 2 is 10 and 1 more makes 11. So the answer is 3.”
* *5 =* *– 3*: “This equation means I had some cookies and I ate 3 of them. Now I have 5. How many cookies did I have to start with? Since I have 5 left and I ate 3, I know I started with 8 because I count on from 5. . . 6, 7, 8.”

Students may use a document camera or interactive whiteboard to display their combining or separating strategies for solving the equations. This gives them the opportunity to communicate and justify their thinking. | **Engage NY**M1 Lessons 14-16, 28-32**enVision**Topic 6<http://www.bwcs.k12.az.us/> |