# Grade 1 - Unit E - Reviewing Strategies & Word Problems

## Unit Focus

In this unit, first graders will continue to:

- develop fluency with addition and subtraction within 10
- develop strategies to solve addition facts to 20
- use tools to model, solve, and create story problems of all types (start unknown, change unknown and result unknown)

Through careful analysis, students will begin to recognize patterns within problem types and become skilled at solving and writing story problems.

## Stage 1: Desired Results - Key Understandings

### Standard(s)

**Standards**

- Common Core
  - *Mathematics: 1*
    - 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. *(CCSS.MATH.CONTENT.1.OA.A.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. *(CCSS.MATH.CONTENT.1.OA.A.2)*
    - 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.) *(CCSS.MATH.CONTENT.1.OA.B.3)*
    - Understand subtraction as an unknown-addend problem. For example, subtract 10 - 8 by finding the number that makes 10 when added to 8. *(CCSS.MATH.CONTENT.1.OA.B.4)*
    - Add and subtract within 20.
    - Relate counting to addition and subtraction (e.g., by counting on 2 to add 2). *(CCSS.MATH.CONTENT.1.OA.C.5)*

### Transfer

*Students will be able to independently use their learning to...*

**T1** Initiate a plan using a variety of methods/strategies appropriately, execute it, and evaluate the reasonableness and accuracy of the solution.

**T2** Construct viable arguments using clear and appropriate mathematical language and critique the reasoning of others.

### Meaning

#### Understanding(s)

*Students will understand that...*

**U1** Mathematicians work to make sense of the problem before trying to solve it.

**U2** Mathematicians construct viable arguments to explain problems, solutions, and mathematical representations.

**U3** Mathematicians understand that strategies help recognize relationships between numbers to develop fact fluency.

#### Essential Question(s)

*Students will keep considering...*

**Q1** What do effective problem solvers do when they get stuck?

**Q2** Have I sufficiently supported my answer and shown my work?

### Acquisition of Knowledge and Skill

#### Knowledge

*Students will know...*

**K1** Addition and subtraction complement each other.

#### Skill(s)

*Students will be skilled at...*

**S1** Recalling addition and subtraction facts to 10.

## Stage 1: Desired Results - Key Understandings

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| ▪ 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). *(CCSS.MATH.CONTENT.1.OA.C.6)*<br>▪ Work with addition and subtraction equations.<br>▪ 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. *(CCSS.MATH.CONTENT.1.OA.D.7)*<br>▪ 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 = _. *(CCSS.MATH.CONTENT.1.OA.D.8)*<br>▪ Mathematical Practices<br>▪ Make sense of problems and persevere in solving them. *(CCSS.MATH.MP.1)*<br>▪ Construct viable arguments and critique the reasoning of others. *(CCSS.MATH.MP.3)*<br><br>**Madison Public Schools Profile of a Graduate**<br>o Analyzing: Examining information/data/evidence from multiple sources to identify possible underlying assumptions, patterns, and relationships in order to make inferences. *(POG.1.2)*<br>o Product Creation: Effectively use a medium to communicate important information. *(POG.3.2)* | **K2** Fact strategies and models for number combinations to 20.<br>**K3** How to use strategies to solve story problems to 20.<br>**K4** How to use models such as the ten frame and the number rack to help visualize numbers, relationships, and combinations.<br>**K5** Models allow for multiple mental pictures and representations of numbers.<br>**K6** Vocabulary: addition, near ten, add ten, combination, count on, difference, double, ten frame, near double, equal, equation, fact family, join, make ten, missing addend, part, separate, story problem, strategy, subtract, difference, sum, take away, unknown, whole | **S2** Using counting on, combinations of 10, add ten, near ten, doubles strategies to add to 20.<br>**S3** Using taking away, finding the difference and using addition facts to help solve subtraction facts to 20.<br>**S4** Writing and solving equations that involve unknowns in all positions.<br>**S5** Determining whether addition and subtraction equations are true or false.<br>**S6** Solving result unknown, change unknown, and start unknown addition and subtraction story problems. |