First Grade Unit 3: Adding, Subtracting, Counting & Comparing

Big Conceptual Idea:  
K-5 Progression on Counting and Cardinality and Operations and Algebraic Thinking (pp. 12-17), K-5 Progression on Number and Operations in Base Ten (pp. 6-7)

Throughout the unit the Math Practices are introduced and used. Find student friendly posters here.

Links may require you being logged into your Bridges Educator Site. If the link does not work for you, copy and paste the http address into a browser.

<table>
<thead>
<tr>
<th>Mathematical Background:</th>
<th>Unit Essential Question: For Teacher Considerations</th>
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<tbody>
<tr>
<td>Read Bridges Unit 3 Overview pages (pp. i-viii).</td>
<td>What are efficient strategies for key number facts for single-digit addition and subtraction?</td>
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</tbody>
</table>

Instructional note:

This unit's Big Idea focuses on Phase II of fluency development, as opposed to Unit 1 and Unit 2 where the focus was on Phase I (constructing meaning and counting strategies). Phase II in this unit works on the development of reasoning strategies to help students work towards security of key number facts up to 10, and begin to form number understanding of number relationships to 20. Students should be able to “see” subsets of numbers within larger numbers, called hierarchical inclusion, which includes the concept of part-part whole reasoning. The Nevada Academic Content Standards (NVACS) definition of procedural fluency is the ability to apply procedures flexibly, accurately, efficiently, and appropriately; to transfer reasoning strategies to different problems and contexts; to build or modify procedures from other procedures; and to recognize when one strategy or procedure is more appropriate than another (2010, p. 6). Developing this flexibility and deepening the understanding of relationships between numbers will result in students becoming more likely to have accurate and flexible recall of all single-digit number facts. The expectation for Phase II fluency is using a strategy to determine a solution within about 3 seconds, not “just memorize the facts” and be able to recall them instantly. Research indicates that teaching “drill and kill” procedures to be implemented with speed and accuracy is not successful for most. “For some people, learning mathematics as procedures has been successful; but for the majority of our nation, knowledge of mathematical rules has not allowed them to use math confidently in their daily lives” (Parrish, 2010, p. 4). This also causes math anxiety, as discussed in Unit 2 (Boaler, 2016).

In Module 1 the Commutative Property (numbers can be added in any order) is introduced to students. This Big Idea is expanded on using 2 addends in the game Drop the Beans. Eventually this idea needs to extend to “Solve word problems that call for addition of three whole numbers whose sum is less than or equal to 20” (NVACS, 2010, 1.OA.2). As students develop reasoning strategies within fluency development, the power of the property becomes more evident when they are faced with 3 addends. Students find that rearranging the 3 addends (applying the Associative Property), lends itself to making anchors of 5 or 10. Students would benefit from additional learning opportunities in applying the Commutative and Associative Properties to 3 addends. Teachers need to keep this trajectory of learning in the forefront of their minds to capitalize on any opportunities to bring students to this understanding. Several lessons throughout this Unit will have suggestions to extend this work, using the built in A/D/E days.

It is important to create a culture for effective classroom discussion in the sharing of student strategies. “Mathematical discourse includes the purposeful exchange of ideas through classroom discussion, as well as through other forms of verbal, visual and written communication” (NCTM, 2014, p. 29). At this point in the year students may be explaining their thinking by showing their number rack or using unifix cubes and talking through their method. Standards focus includes: 1.OA.1, 1.OA.3, 1.OA.4, 1.OA.5, 1.OA.6, 1.OA.7, 1.OA.8, 1.NBT.1, 1.NBT.2, 1.NBT.3, 1.NBT.4, 1.MD.4. This standard load may feel heavy, however, as Van de Walle, Karp, Lovin, & Bay-Williams state, “There is no need to separate place-value instruction from computation instruction. Children's efforts with the invention of their own computation strategies will both enhance their understanding of place value and provide a firm foundation for flexible methods of computation” (2014, p. 176).

Unit 3 will be reinforcing and extending important place value understandings introduced in kindergarten as ten ones and some more. As stated in the Progression Documents:

<table>
<thead>
<tr>
<th>1st Grade Pacing Framework: Balanced Calendar</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unit 3 Adding, Subtracting, Counting &amp; Comparing</td>
</tr>
<tr>
<td>4 Modules 20 Sessions A/D/E: 1 Over 21 days</td>
</tr>
<tr>
<td>NVACS Focus Domains: OA-NBT</td>
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<tr>
<td>Total Days: 21</td>
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</tbody>
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Washoe County School District K-5 Mathematics

Bridges in Mathematics - 1st Grade Unit 3

Version 2: May 2018
“In first grade, students learn to view ten ones as a unit called a ten. The ability to compose and decompose this unit flexibly and to view the numbers 11 to 19 as composed of one ten and some ones allows development of efficient, general base-ten methods for addition and subtraction. Students see a two-digit numeral as representing some tens and they add and subtract using this understanding” (K-5 Progression on Number and Operations in Base Ten, p. 6).

When students are asked later in the year to add two 2-digit numbers, if this understanding of the teens being a ten and some more is not secured, they will struggle. This Unit’s child watching opportunities provides space to observe students with secure understanding and those struggling with the kindergarten standard K.NBT.1 and provide intervention as necessary.

<table>
<thead>
<tr>
<th>Essential Academic Vocabulary</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>New Academic Vocabulary:</strong></td>
</tr>
<tr>
<td>Use these words consistently during instruction.</td>
</tr>
<tr>
<td><em>a Word Resource Card is available</em></td>
</tr>
<tr>
<td><strong>Review Vocabulary:</strong></td>
</tr>
<tr>
<td>(Vocabulary taught prior grades or units)</td>
</tr>
</tbody>
</table>

- Add*
- Addition
- Compare*
- Difference*
- Double
- Equal*
- Equation*
- Even
- Graph
- Greater than*
- Half*
- Less than*
- Odd
- Ones*
- Subtract*
- Sum or Total*
- Tens

Additional terminology that students may need support with: strategies, minus, plus, combinations, problem solving

Standards listed in **bold** indicate a focus of the lesson.

<table>
<thead>
<tr>
<th>NVACS (Content and Practices)</th>
<th>Big Idea Mathematical Development</th>
<th>Instructional Clarifications &amp; Considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Module 1- Session 1: Introducing Work Place 3A Drop the Beans</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**1.OA.3**
**1.OA.6**
**1.OA.8**
**1.MD.4**
**MP.4**
**MP.7**

**Access Prior Learning:**
- Subitizing
- All Kindergarten Counting and Cardinality Standards

**Developing the Big Idea:**
Students will apply the Commutative Property (it doesn’t matter which order two numbers are added), and strategies such as “counting on” to develop reasoning strategies for math fluency.

**Instructional NOTE:**
- Accurate vocabulary modeling of the term “expression” and “equation” will support students. An expression is just the addends. (3+4) whereas an equation includes the equal sign and the sum. (3+4=7).
- Consider utilizing the Work Place Sentence Frames found on the Educator Site to support students’ communication.
- “Drop the Beans” is recommended as a Work Place grade to enter in Infinite Campus (see Q2 Grading suggestion document).

**Enrichment:**
Students can choose different target sums of 7, 8, 9, or 10. If you have students far beyond this in their math fluency, you can increase the target sum appropriately, and have them create their own game board.

**Child Watching:**
- A teacher tool that may be useful is the Work Place Differentiation chart found on page 26 in your Assessment Binder under the tab “Bridges Unit Assessment.” This will guide you on your Work Place Child Watching.
- This work place is the perfect opportunity to support perceptual and conceptual subitizing. Consider covering the beans after a short time (3 seconds), then asking students to tell what they saw. Uncover the beans and discuss how they might see groups of beans without counting all (perceptual subitizing) and how they might combine groups together to reach a total (conceptual subitizing).
### Module 1- Session 2: Introducing Work Place 3B Make the Sum

**1.OA.6**  
**MP.2**  
**MP.7**

**Access Prior Learning:**  
- Subitizing  
- Session 1, commutative property

**Developing the Big Idea:**  
Students will apply the commutative and associative properties and use strategies such as “counting on” within 10 to develop reasoning strategies for math fluency.

**Instructional NOTE:**  
- The big idea of Commutativity and Associativity makes a strong appearance in this lesson. Push students to see that changing the order of numbers (Commutative Property) around while adding does not change the total and that we can add any two adjacent numbers together and the sum does not change. Help students see that in this is a reasoning strategy- to group numbers in easier to add groups. For example, if they pull a 2, 4, 6, & 2, they can move the 2 cards next to each other and have a double. 2+2. Then students will have 4+4 which is another double. **Teachers should capitalize on this instructional opportunity to discuss this idea deeply. You may consider extending this lesson into 2 days to create more instructional opportunities to address the Associative and Commutative Properties.**

- See the online digital tools for “Make the Sum”. Note the second page has the cards to “draw” [https://bridges.mathlearningcenter.org/digital-materials/work-place-3b-make-sum](https://bridges.mathlearningcenter.org/digital-materials/work-place-3b-make-sum)

- Some students may need support noticing that a sum can be created using more than two cards.

**Enrichment:** See Game Variations A, B, C & D on the Work Place Guide (p. T9)

**Child Watching:**  
- Watch for students who are still counting each dot on the cards, ask them if they have to count them all in order to know how many dots there are. Practice with a few quick flash cards to help them subitize.

- Watch for students who move cards around, applying the commutative and associative property, to add and highlight this strategy to other students.

### Module 1- Session 3: Doubles, Evens & Odds

**1.OA.3**  
**1.OA.6**  
**MP.2**  
**MP.7**

**Access Prior Learning:**  
- Some may have developed a working strategy of using doubles for adding.

**Developing the Big Idea:**  
Students will apply the commutative property and use strategies such as doubles within 10 to develop reasoning strategies for math fluency.

**Instructional NOTE:**  
- Read the **Math Practices in Action** in the margin (p. 16)

- Note that the idea of even and odd numbers is not a 1st grade standard, it is a 2nd grade standard. Although the exposure to this will be helpful in the transition to 2nd grade, the point of this lesson is to focus on the strategy use of doubles plus one, and doubles minus one as a reasoning strategy to utilize in developing math fluency.

- Research supports the using of fingers to create perception and representation of numbers as it develops a specific region of our brain, the somatosensory finger area. “It is important to remove the stigma from counting on fingers and to see this activity as inherently important and valuable” (Boaler, n.d.). Encourage continued finger use to develop this finger perception, and refrain from developing a climate where this is seen in a negative way. “6-year old’s finger representation was a better predictor of future mathematics success than their scores on tests of cognitive processing” (Boaler, n.d.).

**Enrichment:** See Step 16 (p. 18) Game Variations A on the Work Place Guide (p. T12)

**Child Watching:**  
- Watch for students who are struggling to double numbers or add or subtract 1. Support them using the differentiation ideas (p. T11).

### Module 1- Session 4: Introducing Work Place 3C Doubles Plus or Minus One

**1.OA.5**  
**1.OA.6**  
**MP.2**  
**MP.7**

**Access Prior Learning:**  
- Connect back to Session 3

**Developing the Big Idea:**  
Students will apply the commutative property and use strategies such as doubles within 10, and making 10s to develop reasoning strategies for math fluency.

**Instructional NOTE:**  
- See the online digital tools. Note the second page has the digital spinner (Copy and paste if link doesn’t work). [https://bridges.mathlearningcenter.org/digital-materials/work-place-3c-doubles-plus-or-minus-one](https://bridges.mathlearningcenter.org/digital-materials/work-place-3c-doubles-plus-or-minus-one)

**Enrichment:** See Step 5 (p. 21)

**Child Watching:**  
- Observe for reasoning strategies being used. Who is counting all by 1s? Who starts from a number and counts on by 1s? Who makes a 10 (5)? Who is counting back? Have students share strategically, gradually building up from a lower level of sophistication in strategy to a higher level.

- Students may be confused with the two steps of the game because this is the first game that has two-step directions. If this occurs, support students by helping them notice that if their answer is not on the board they missed a step. Be prepared to reteach this game. Offer peer support as needed to students.
### Module 1- Session 5: Number Rack Story Problems

<table>
<thead>
<tr>
<th>1.OA.1</th>
<th>1.OA.4</th>
<th>1.OA.7</th>
<th>1.OA.8</th>
</tr>
</thead>
<tbody>
<tr>
<td>MP.1</td>
<td>MP.4</td>
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</table>

**Access Prior Learning:**
- K.OA.2- solve addition and subtraction word problems within 10 by using objects or drawings.

**Developing the Big Idea:**
Students will make sense of a problem and use the strategies they’ve been working with (make 10s, doubles, double +/-, counting on, counting back) to continue developing reasoning strategies for math fluency.

**Instructional NOTE:**
- Revisit the [poster](https://bridges.mathlearningcenter.org/digital-materials/work-place-3d-tower-race) for MP.1 and encourage a focus on making sense of a problem.
- Read the *About This Session* note in the margin (p. 24)
- This lesson is a great opportunity to reinforce the meaning of the equal sign, not as “the answer” but as a symbol for “the same as.” This idea can be visualized by students using a balance scale and cubes. Consider showing how 5+3 cubes on one side balance with 4+4 cubes on the other side.
- Consider splitting this lesson into 2 days and utilizing one of your A/D/E days to extend this lesson.
- Consider framing your own problems such as a Take From Result Unknown type between 1 & 2. For example, Amber gathered 20 acorns and put them by a tree, a squirrel ran away with 7. How many were left? Then continue with problem 2. You can also move from left to right across the top. Do problem 1, followed with your own creation for Add To Change Unknown, (11 acorns fell off the tree onto the ground. The wind picked up and more fell. Now there are 19 acorns. How many fell to the ground after the wind blew?) Then try problem 4. Use this chart to help you create more problems.

**Enrichment:** Increase the complexity of problem types or quantities within the problem for students who need more of a challenge.

**Child Watching:**
- Help students act out the problems if they struggle with understanding what the problem is asking. Consider having students' direct model with concrete manipulatives.
- What strategies are they using?

### Module 2- Session 1: Introducing Work Place 3D Tower Race

<table>
<thead>
<tr>
<th>1.OA.6</th>
<th>1.OA.8</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.MP.2</td>
<td>1.MP.7</td>
</tr>
</tbody>
</table>

**Access Prior Learning:**
- K.OA.3- Decompose numbers less than or equal to 10 into pairs in more than one way.

**Developing the Big Idea:**
Students will apply the associative property to add three numbers, they will rely on strategies such as making 10s to develop reasoning their strategies for math fluency.

**Instructional NOTE:**
- See the online digital tools for this game. [https://bridges.mathlearningcenter.org/digital-materials/work-place-3d-tower-race](https://bridges.mathlearningcenter.org/digital-materials/work-place-3d-tower-race)
- This game may cause some confusion and students may struggle. Keep in mind the big idea of this game is to give students the opportunity to engage in decomposing numbers. Modify rules as needed.

**Enrichment:** See the *Work Place Guide Assessment & Differentiation Chart* (p. T1)

**Child Watching:**
- Observe for students struggling to make combinations to 10.

### Module 2- Session 2: Flash Attack

<table>
<thead>
<tr>
<th>1.OA.6</th>
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</thead>
<tbody>
<tr>
<td>MP.5</td>
</tr>
<tr>
<td>MP.7</td>
</tr>
</tbody>
</table>

**Access Prior Learning:**
- Subitizing with dot cards

**Developing the Big Idea:**
Students will use subitizing skills and their developing reasoning strategies to continue developing math fluency.

**Instructional NOTE:**
- If your students need another 2 seconds, show them again. However, refrain from just showing them the beads for a longer time. This will encourage them to count, which is what we are moving away from. Rely on other students sharing their strategies for “seeing” the numbers to support those struggling.
- This lesson could take extra time. Consider stretching it into two days, and using one of your A/D/E days.

**Enrichment:** See the extensions in the margin and consider increasing the quantity of beads within 20 if your students are ready for it (p. 13).

**Child Watching:**
- Observe for students struggling to subitize, trying to count all beads by ones. See the support note (p. 13).
## Module 2- Session 3: Make Ten

**1.OA.1**  
**1.OA.3**  
**1.OA.6**  
**1.OA.8**  
**1.NBT.4**  
**MP.7**  
**MP.8**

**Access Prior Learning:**  
- K.OA.3: Decompose numbers less than or equal to 10 into pairs in more than one way.
- 1.OA.3: Add and subtract within 10.
- 1.OA.6: Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. 
- 1.OA.8: Determine the unknown whole number in an addition or subtraction equation relating three whole numbers. 
- 1.ND.4: Understand the relationship between numbers and quantities; connect counting to cardinality.

**Developing the Big Idea:**  
Students will work with their growing repertoire of reasoning strategies to develop more secure footing in fluency within 10.

**Instructional NOTE:**  
- Read the About this Session in the margin (p. 16)
- Consider encouraging students to write their equations horizontally as well as vertically on the student workbook pages 13-14.
- Consider choosing a few students who showed their work on #5 to share. This will help other students see ideas on communicating their thinking in writing.

**Enrichment:**  
- See Step 3 - extend to combinations of 15, then 20 (p. 16)
- Challenge problem # 5 of student book (p. 14)

**Child Watching:**  
- Observe for students struggling with combinations within 10. Adjust the quantity to within 5.

## Module 2- Session 4: Hot Air Balloons

**1.OA.1**  
**1.OA.3**  
**1.OA.6**  
**1.OA.7**  
**1.OA.8**  
**MP.1**  
**MP.7**

**Access Prior Learning:**  
- Connect back to Module 1 Session 5, Number Rack Stories.
- Schema about hot air balloons
- K.OA.3: Decompose numbers less than or equal to 10 into pairs in more than one way.
- 1.OA.3: Add and subtract within 10.
- 1.OA.6: Add and subtract within 20, demonstrating fluency for addition and subtraction within 10.
- 1.OA.8: Determine the unknown whole number in an addition or subtraction equation relating three whole numbers.

**Developing the Big Idea:**  
Students will make sense of a problem and use the strategies they’ve been working with to continue developing reasoning strategies for math fluency.

**Instructional NOTE:**  
- The Assessment Binder under the Bridges Unit Assessment Tab provides the scoring guide for the Combinations of Ten checkpoint (p. 29). It can also be downloaded from the site https://bridges.mathlearningcenter.org/implementation. See the right hand side where it says, “assessment tools.”
- To continue providing more learning opportunities around 1.OA.3, consider using the “Hot Air Balloon” problem to create another story problem that includes 3 addends. For example, “There are 10 hot air balloons. Some are black, some are white, but others are red. Create an equation representing the possible numbers of each color. Explain your equation with objects, drawings and equations.” Other variations of this problem could include providing students with the numbers of each color balloon and asking students to find the sum. There are 3 red, 5 white, and 2 black balloons. How many balloons are there total? Choose numbers that encourage students to find anchors of 5 and 10, and order them in ways that encourage rearrangement.
- Consider modeling multiple ways to show a number equation for each discussed balloon race problem. 10-7= ?, 10-2= ?, 10= 2 +8 and so on.
- Consider having multiple tools available to choose from. Students may find working with unifix cubes or number racks helpful. Students should be given choices in their tool selection regularly.
- Remind students of Math Practice 1. Deliberately help them understand that mathematicians make sense of a problem by visualizing or acting the problem out by modeling with mathematics.

**Enrichment: Work Place Game Variations** (see each Work Place Guide)

**Child Watching:**  
- Any students who appear to not be secure in their working knowledge of key number facts and fact strategies for single-digit addition and subtraction may need extra teacher support. See the Support and Intervention page under the Bridges Unit Assessment tab (p. 35).
- Use the Combinations of Ten Checkpoint to formatively assess students

## Module 2- Session 5: Number Rack Subtraction

**1.OA.1**  
**1.OA.6**  
**1.NBT.3**  
**1.MD.3**  
**1.MD.4**  
**MP.4**  
**MP.5**

**Access Prior Learning:**  
- K.OA.2: Solve addition and subtraction word problems, and add and subtract within 10.
- 1.OA.6: Add and subtract within 10.
- 1.OA.8: Determine the unknown whole number in an addition or subtraction equation relating three whole numbers.
- 1.ND.4: Understand the relationship between numbers and quantities; connect counting to cardinality.

**Developing the Big Idea:**  
Students will make sense of a problem and use the strategies they’ve been working with to continue developing reasoning strategies for math fluency.

**Instructional NOTE:**  
- See the online Digital Display materials here to aide in introducing Work Place 3E. Note that 3E is a suggested Work Place for taking a grade. See the rubric in the Grading Suggestions documents.
- Use the Number Rack app to modify the bead string to use only one string if needed.
- Consider making explicit use of the Difference Word Resource Card and posting this vocabulary in an easy access location.
- The Number Rack Subtraction problems delve directly into Compare Difference Unknown problem types, as seen again in the NVACS (2010, p. 88) or in K-5 Progression on Counting and Cardinality and Operations and Algebraic Thinking (p. 7). Remember that these are some of the most difficult problem types for students to work with as there is no action to model. “The challenge of comparison problems comes from the fact that two quantities are being described by language that can be complex for children. Fewer, less than, more, bigger and greater than are the terms typically used to describe the
### Module 3- Session 1: Ten & Some More

**Access Prior Learning:**
- K.CC – Know number names and count the sequence
- K.NBT - Work with numbers 11-19 to gain foundations for place value

**Developing the Big Idea:**
Students will deepen their understanding of numbers and their relationships to one another, by focusing on place value through comparing numbers and their quantities.

**Instructional NOTE:**
- It is important to simultaneously refer to numbers with their numeral word, as well as in 10s and 1s. For example, frequently refer to thirteen as both 13 and “one ten and 3 ones.” As indicated in the K-5 Progression on Number and Operations in Base Ten, “The number words continue to require attention at first grade because of their irregularities. Many decade numbers sound much like teen number words. For example, ‘fourteen’ and ‘forty’ …… and because the number words ‘eleven’ and ‘twelve’ do not cue students that they mean ‘1 ten and 1 one’” (pp. 6-7).

**Enrichment:** Work Place Game Variation (p. T7)

**Child Watching:**
- Use the 3E rubric to assess for students struggling to add numbers on the dice, or writing the comparison symbols.

### Module 3- Session 2: Fifty or Bust! Day 1

**Access Prior Learning:**
- K.CC – Know number names and count the sequence
- K.NBT - Work with numbers 11-19 to gain foundations for place value

**Developing the Big Idea:**
Students will deepen their understanding of numbers and their relationships to one another, by focusing on place value through comparing numbers and their quantities.

**Instructional NOTE:**
- The questions used throughout the modeling of the game are important to use during game play. To get the most out of the game ask students “How many more do you have?” “How many more do you need to get to 50?” and/or “How many to catch up?”

**Enrichment:** Ask students to record the equations as they answer the questions throughout game play.

**Child Watching:**
- Observe for students operating on 10s and 1s separately. Do they count by 10s then add on by 1s, or are they counting every cube individually by 1s? Do the students color in the next 10 train each time, even if it means leaving holes to fill in later? (See Step 9)

### Module 3- Session 3: Fifty or Bust! Day 2

**Access Prior Learning:**
- K.CC – Know number names and count the sequence
- K.NBT - Work with numbers 11-19 to gain foundations for place value

**Developing the Big Idea:**
Students will deepen their understanding of numbers and their relationships to one another, by focusing on place value through comparing numbers and their quantities.

**Instructional NOTE:**
- Carefully model out loud your thinking and strategy as you play the game.
- See this game from the resources on the Bridges Educator site as another tool.
- See Math Practices in Action, p. 17

**Enrichment:** Playing with cards face down in the pocket chart.

**Child Watching:**
- Observe for students operating on 10s and 1s separately. Do they count by 10s then add on by 1s, or are they counting every cube individually by 1s? Do the students color in the next 10 train each time, even if it means leaving holes to fill in later? (See session 2, Step 9)

### Module 3- Session 4: Introducing Work Place 3F Fifty or Bust!

**Access Prior Learning:**
- K.CC – Know number names and count the sequence
- K.NBT - Work with numbers 11-19 to gain foundations for place value.

**Developing the Big Idea:**
Students will deepen their understanding of numbers and their relationships to one another, by focusing on place value through comparing numbers and their quantities.

**Instructional NOTE:**
- See the online Digital Display materials here to aide in introducing Work Place 3F.
  - https://bridges.mathlearningcenter.org/digital-materials/work-place-3f-fifty-or-bust
- Note that 3F is a suggested Work Place for taking a grade. See the rubric in the Grading Suggestions documents.

**Enrichment:** See game variations on Work Place Guide (p. T5)

-continues on next page-
**Module 3 - Session 5: Unit 3 Assessment**

<table>
<thead>
<tr>
<th>Access Prior Learning:</th>
<th>Instructional NOTE:</th>
</tr>
</thead>
</table>
| 1.OA.6, 1.OA.8, 1.NBT.2, 1.NBT.2a, 1.NBT.2b | The Assessment Binder under the Bridges Unit Assessment Tab provides the scoring guide for the for Unit 3 Assessment (p. 32). It can also be downloaded from the site and scores entered digitally to create a color-coded spreadsheet.  
https://bridges.mathlearningcenter.org/implementation See the right hand side where it says, "assessment tools." |
| **Developing the Big Idea:** Students will utilize their growing repertoire of reasoning strategies to solve problems within 10. Some may still be in Phase 1 and using direct modeling and counting strategies. Some may have moved towards reasoning strategies in Phase 2. Students may move fluidly between the phases. |  |
| **Instructional NOTE:**  |  |
| - This is the teacher's opportunity to formatively assess students’ use of reasoning strategies, and determine what phase students are working in towards their fluency development.  |
| - There may be confusion in the practice problem because 5 beads are showing and 5 beads are hidden. Consider doing an additional practice problem to reinforce students are determining the beads hidden rather than the amount shown.  |
| - Section 2 of the assessment asks students to draw a line indicating the last answer they were able to complete within 3 minutes. The purpose of this is to help teachers determine who is using counting strategies rather than using reasoning strategies. Throughout the unit, teachers have been child-watching and likely have a strong idea through anecdotal observations of the strategy use by students. If your child watching observations have provided you with enough information to determine student strategy use, it may not be necessary to time them on this section of the assessment.  |

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**Module 4 - Session 1: Equivalent Names: Sixes & Sevens**

<table>
<thead>
<tr>
<th>Access Prior Learning:</th>
<th>Instructional NOTE:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.OA.3, 1.OA.6, 1.OA.7</td>
<td><strong>This session may need additional time, as it provides great opportunities to build upon the Commutative and Associative Properties Extend to two (2) days (use 1 A/D/E day).</strong></td>
</tr>
<tr>
<td><strong>Developing the Big Idea:</strong> Students will deepen their understanding of numbers and their relationships to one another by applying the commutative, and associative properties and to create an understanding of equivalent combinations which will support them in using reasoning strategies to derive facts using known facts.</td>
<td></td>
</tr>
<tr>
<td><strong>Instructional NOTE:</strong></td>
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<td>- Complete lesson through step 13. Focusing on the big idea that there are multiple equivalent names, and that the equal sign means “the same as.”</td>
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<td>- Remember to use the term expression (5+2) to show the operation, but the term equation (5+2=7) to represent the idea of equivalence. Phrases such as “the same number as” and “becomes” can help solidify the understanding of the equal sign definition.</td>
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<td>- Consider pulling out a balance scale again to represent how each side is the same.</td>
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<tr>
<td>- Save these trains to continue with Day 2.</td>
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</tbody>
</table>

**Day 2:**

- Use all trains with three colors. Continue to develop students’ understanding of the Commutative and Associative Properties by having students rearrange the 3 colors in different orders and record different possible equations for each train. Class discussion can center around the orders that are easier to add.  

**Enrichment:**

- Observe for students who understand and utilize the idea of commutativity (3+4, 4+3)  
- Observe for students exploring 3 addends and using associativity (the order does not matter in addition).  

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**Module 4 - Session 2: Equivalent Names: Nines & Tens**

**Instructional NOTE:**

- This session may need additional time, as it provides great opportunities to build upon the Commutative and Associative Properties Extend to two (2) days (use 1 A/D/E day).  
- Complete lesson through step 13. Focusing on the big idea that there are multiple equivalent names, and that the equal sign means “the same as.”  
- Remember to use the term expression (5+2) to show the operation, but the term equation (5+2=7) to represent the idea of equivalence. Phrases such as “the same number as” and “becomes” can help solidify the understanding of the equal sign definition.  
- Consider pulling out a balance scale again to represent how each side is the same.  
- Save these trains to continue with Day 2.  

**Day 2:**

- Use all trains with three colors. Continue to develop students’ understanding of the Commutative and Associative Properties by having students rearrange the 3 colors in different orders and record different possible equations for each train. Class discussion can center around the orders that are easier to add.  

**Enrichment:**

- Observe for students who understand and utilize the idea of commutativity (3+4, 4+3)  
- Observe for students exploring 3 addends and using associativity (the order does not matter in addition).
### Session 5: Number Rack Detectives

**Access Prior Learning:**
- Several standards in Kindergarten call for “drawing an equation.” (K.OA.3, K.OA.4, K.NBT.1)
- Recall the work done the previous lesson on 6s and 7s
- Review terms true and false

**Instructional NOTE:**
- This session may need additional time. It provides great opportunities to build upon the Commutative and Associative Properties. Extend to two (2) days (use 1 A/D/E day).
- Having students examine equations and identifying True/False statements takes the task a step farther by encouraging them to evaluate the equations. You may need to discuss the meaning of true and false beforehand.
- The balance scale can be helpful again to determine true/false.
- This online resource suggested on the Bridges Educator Site provides a useful digital scale (Select the “Number Balance Activity”).

**Day 1:**
- Steps 1-19

**Day 2:**
- Use all trains with three colors. Continue to develop students’ understanding of the Commutative and Associative Properties by having students rearrange the 3 colors in different orders and record different possible equations for each train. Class discussion can center around the orders that are easier to add.

**Enrichment:** Using 3 colors to create 3 addends

**Child Watching:**
- Observe for students who have misconceptions regarding the meaning of the equal sign, specifically if the sum is presented first in an equation
- Observe for students who understand and utilize the idea of commutativity (3+4, 4+3)
- Observe for students exploring 3 addends and using associativity (the order does not matter in addition).

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**Developing the Big Idea:**
Students will deepen their understanding of numbers and their relationships to one another by applying the commutative and associative properties and to create an understanding of equivalent combinations in direct modeling, which will support them in using reasoning strategies to derive facts.

**Instructional NOTE:**
- Support students by explicitly using the vocabulary resource card for difference. Note that difference in this lesson is comparison, not the action of removing or “taking away” although it is represented with a minus symbol.
- The need to direct model comparison problems supports students as they work on these problem types. Remember that comparison/difference unknown problems are some of the most difficult problem types 1st graders will encounter. See page 88 in the NVACS for this table (2010).

**Enrichment:** See Step 14 (p. 22)

**Child Watching:**
- Observe for students struggling and reduce the quantity to 6 or less. Students may also find it useful to match or directly compare connected cubes (“match, match, match, leftovers”). Some students may disconnect the towers and pair together a cube from each tower and then count the ‘leftovers’ or remaining cubes in order to find the difference.

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**Developing the Big Idea:**
Students will deepen their understanding of numbers and their relationships to one another, by focusing on quantity of number.

**Instructional NOTE:**
- Utilize the dot method for drawing the greater than, less than symbols rather than the “alligator gimmick” to keep the focus on the mathematics. The larger quantity of dots (2) is near the greater number.
- Have unifix cube trains available for students who need to model this in a concrete way and directly compare the sets.

**Enrichment:** See Step 13 in the lesson (p. 17).

**Child Watching:**
- Observe for students who have misconceptions regarding the meaning of the equal sign, specifically if the sum is presented first in an equation
- Observe for students who understand and utilize the idea of commutativity (3+4, 4+3)
- Observe for students exploring 3 addends and using associativity (the order does not matter in addition).
Developing the Big Idea:
Students will utilize their growing repertoire of reasoning strategies to solve problems within 10, solving for the unknown. Some may still be in Phase 1 and using direct modeling and counting strategies. Some may have moved towards reasoning strategies in Phase 2. Students may move fluidly between the phases.

Standards listed in **bold** indicate a focus of the lesson.

References


