Unit 2: Place Value, Comparison, Addition and Subtraction of Numbers to 20 (7 weeks)

Stage 1 – Desired Results

Established Goals

Unit Description
Students will develop an understanding of whole number relationships and place value, including grouping in tens and ones. They will develop, discuss and use efficient, accurate, and methods they can generalize to add with 100. The Mathematical Practices should be evident throughout instruction and connected to the content addressed in this unit. Students should engage in mathematical tasks that provide an opportunity to connect content and practices.

Common Core Learning Standards

1.NBT.2 Understand that the two digits of a two-digit number represent amounts of tens & ones. Understand the following as special cases:
   a. 10 can be thought of as a bundle of ten ones – called a ten.
   b. The numbers from 11 to 19 are composed of a ten & one, two, three, four, five, six, seven, eight or nine ones.
   c. 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.NBT.3 Compare two-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons with the symbols >, =, <

Represent and solve problems involving addition and subtraction.

1.OA.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.OA.2 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.

Understand and apply properties of operations and the relationship between addition and subtraction.

1.OA.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.)

1.OA.4 Understand subtraction as an unknown-addend problem. For example, subtract 10 – 8 by finding the number that makes 10 when added to 8.

Add and subtract within 20.

1.OA.5 Relate counting to addition and subtraction (e.g., by counting on 2 to add 2).

1.OA.6 Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use mental 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).

Work with addition and subtraction equations.

1.OA.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.OA.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, 6 + 6 = 12.
Common Core Standards of Mathematical Practice
1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

ESL Language Standards
1.9 Convey information, using some organizational patterns and structures. Such patterns and structures include chronological order, rhyming patterns, and similarities and differences. (S, W)

1.10 Demonstrate a basic understanding of facts. (S, W)

3.7 Engage in collaborative activities through a variety of student groupings to discuss and share experiences, ideas, information, and opinions. (L, S, R, W)

3.8 Apply self-monitoring and self-correcting strategies to adjust language production to effectively express ideas and opinions. Such strategies include asking questions, starting over, rephrasing, and exploring alternative ways of saying things. (L, S, R, W)

4.6 Understand and use some basic oral communication strategies in American English. Such strategies include indicating lack of understanding, restating or asking for restatement, requesting clarification, and asking how to say something new. (L, S)

4.7 Follow oral and written directions to participate in classroom and social activities. (L, R)

Big Ideas
1. The Base Ten Numeration System: The base ten numeration system is a scheme for recording numbers using digits 0-9, groups of 10 and place value

2. Equivalence: Any number, measure, numerical expression, algebraic expression, or equation can be represented in an infinite number of ways that have the same value.

3. Operation Meanings & Relationships: The same number sentence (e.g. 12-4=8) can be associated with different concrete of real-world situations, AND different number sentences can be associated with the same concrete or real-world situation.

Essential Questions
1. How can numbers be represented using objects, words and symbols?
2. How does using ten as a benchmark number help us add or subtract?
3. How can we use place value to name numbers in equivalent ways?
3. How can we use addition and/or subtraction to solve real-world problems involving joining, separating, part-part—whole and comparing?
3. How can knowing the addition and subtraction facts help me solve problems and represent real world situations with equations?
3c. How do I decompose numbers in a variety of ways for finding sums and differences?
<table>
<thead>
<tr>
<th>Content (Students will know....)</th>
<th>Skills (Students will be able to...)</th>
</tr>
</thead>
</table>
| A. Two digits of a two digit number represent amounts of tens and ones (1.NBT.2) | A1. Represent amounts of tens and ones in two-digit number.  
A2. Explain that two digit numbers are made up of some tens and some ones.  
A3. Look at a two-digit number and identify which number is in the tens place and which number is in the ones place. |
| B. A bundle of ten ones is called a ten and can be thought of as a unit (1.NBT.2a) | B1. Represent ten ones as a ten  
B2. Group objects in tens and realize for example that 42 cubes is the same as 4 tens and 2 leftover  
B3. Count by tens |
| C. Numbers from 11 to 19 are composed of a ten & a number between one and nine (1.NBT.2b) | C1. Given a number between 11 and 20, make groups of tens and ones.  
C2. Count by tens and ones |
| D. The numbers 10, 20, 30, 40…. refer to one, two, three, four …tens and zero ones (1.NBT.2c) | D1. Represent multiples of ten  
D2. Count by tens |
| E. Two digit numbers can be compared based on place value (1.NBT.3) | E1. Compare numbers based on the number of tens and ones in each respective number using <, > symbols |
| F. Addition and subtraction word problems within 20 involving adding to, taking apart, putting together and comparing (1.OA.1) | F1. using objects and drawings to represent an addition or subtraction word problem  
F2. Represent a word problem with an equation and a symbol for the unknown in all positions |
| G. Three addend word problems with sum less than or equal to 20 (1.OA.2) | G1. Add together three numbers whose sum is no more than 20 using objects using a variety of mathematical  
G2. Represent a 3 addend word problem with an equation and a symbol for the unknown |
| H. Properties of operations are strategies that can help us add and subtract (commutative and associative properties of addition) (1.OA.3) | H1. Add and subtract within 20 using commutative and associative properties  
H2. Use mathematical tools such as cubes, balances, number line, 100 chart to model commutative and associative properties |
| I. Subtraction can be thought of as an unknown addend problem (1.OA.4) | I1. Use strategies that relate addition and subtraction as a tool to subtract. For example: think addition, build up through ten, back down through ten  
I1. Create fact families showing the relationship between addition and subtraction |
| J. Counting is related to addition and subtraction (e.g. by counting on 2 to add 2) (1.OA.5) | J1. Add by counting on  
J2. Subtract by counting back |
| K. Strategies for addition and subtraction within 20 (1.OA.6) | K1. Add and subtract within 20  
K2. Add and subtract fluently within 10  
K3: Use strategies such as counting on, making 10, comparing, decomposing a number leading to ten, using |
| L. | The equal sign is a symbol that signifies an equivalent relationship on both sides of the sign (1.OA.7) | relationship between addition and subtraction, creating equivalent but easier or known sums to add and subtract L1. Solve equations of various representations L2. Determine if an addition or subtraction equation is true or false |
| M. | Addition or subtraction equation relating three whole numbers (1.OA.8) | M. Determine and solve for the unknown in an addition and subtraction equation |

### Terms/ Vocabulary
- equal to
- less than
- more than
- number line
- number patterns
- number relationships
- same
- table
tally mark
ten frame
- unitizing
- one
ten
long
ten frame
- compare
- counting on
cube
- compose
decompose
- addition
- subtraction
- sum
- difference
- addend
- skip count
- equivalent
- unknown addend
- equal sign
- whole number
- true
- false
- associative property
- commutative property
- counting on
- bundle
- value
digit
- greater than
- adding to

### Mathematical Language for Communication
1.OA.1/1.OA.2 - adding to – taking from- putting together- taking apart- comparing-unknown-sum- less than- equal to minus- subtract- the same amount as- and (to describe the + symbol)
1.OA.3/1.OA.4-order- first- first-second
1.OA.5/1.OA.6- addition-subtraction-counting all- counting on- counting back
1.OA.7/1.OA.8- equations- equal- the same amount/quantity as- true and false
1.NBT.2/1.NBT.3- tens- ones- bundle- left-overs- singles- groups- greater than/less than- equal to

### Stage 2 – Assessment Evidence

| Initial Task: | Halloween Fun |
| Final Performance Task: | Thanksgiving |

### Other Evidence
- Teacher observation, conferencing, teacher designed assessment pieces, student work, exit slips, journal entries

### Stage 3 – Learning Plan

**Everyday Mathematics /Impact Mathematic Lessons –**

The following lessons will support some of the CCLS & essential questions outlined in this unit map:

**Everyday Mathematics CCLS Lessons –**

The following lessons will support some of the CCLS & essential questions outlined in this unit map:

- 1.NBT.1: 1-1, 1-2, 1-3, 1-4, 1-7, 1-8, 1-9, 1-10, 1-12, 1-13, 2-1, 2-2, 2-3, 2-4, 2-5, 2-6, 2-7, 2-11, 2-13, 3-6, 4-10, 5-1, 9-1, 9-3, 10-7
- 1.NBT.2: 5-1, 5-2, 5-3, 5-5, 5-6, 5-8, 5-9, 6-6, 8-2, 8-3, 8-4, 8-5, 10-4, 10-7
- 1.OA.3: 2-13, 3-10, 4-11, 4-12, 5-5, 5-8, 5-11, 5-12, 6-1, 6-3, 6-4
- 1.OA.6: 1-5, 1-10, 2-1, 2-2, 2-3, 2-8, 2-11, 2-12, 2-13, 3-6, 3-9, 3-14, 4-2, 4-6, 4-7, 4-8, 4-11, 4-12, 5-5, 5-7, 5-9, 5-10, 5-11, 6-1, 6-2, 6-3, 6-4, 6-5, 6-6, 6-7, 6-8, 7-2, 7-3, 7-7, 8-2, 8-3, 8-5, 8-7, 8-8, 8-9, 9-1, 9-6, 9-7, 10-2
- 1.OA.8: 3-8, 3-9, 4-12, 5-8, 5-11, 5-12, 6-3, 6-4, 6-5, 6-6, 6-8

**Additional Resources:**

https://www.georgiastandards.org/Common-Core/Pages/Math-K-5.aspx
- Click on Grade 1 ~ Unit 6 (Right hand side of the page)
  - Pony Bead Place Value ~ Pages 12-17
- The King’s Counting Crew ~ Pages 32-41 (Focus on place values aspects of the activity/task)
- Silly Symbols ~ Pages 43-49
- Developing Meaning by Using Story Problems – Result Know ~ Pages 19-24
- Fill the Tree ~ Pages 25-31
- I Spy Addition ~ Page 37
- Make Twenty ~ Pages 44-45

http://www.k-5mathteachingresources.com/1st-grade-number-activities.html
All activities listed under 1st Grade Number Activities: Number and Operations in Base Ten
1. Mike has 88 pieces of candy from trick or treating.

   a) Use base ten blocks to show two different ways to represent the number 88.

   b) Mike has 40 Swedish Fish. Show how you can group forty (40) into tens (10’s)

   c) Mike has 12 Starburst. Can he make a group of ten? How many will he have left over? Show your thinking
2. Jessica visits 12 apartments while trick or treating. Daniel visits 21 apartments while trick or treating.
   a. Write a number sentence using greater than (>) or less than (<) to compare the numbers 12 and 21 ________________________________
   b. Prove, using tens and ones, why the greater number is greater.

3. There are four (4) ghosts at the party. Then, some more ghosts arrived at 8:00 pm. Now there are ten (10) ghosts at the party.
   a. Write an equation with a symbol for the unknown that represents the problem
      Equation: ______________________________________
   b. How many ghosts arrived at 8:00 pm? Show your work below.
4. There are six (6) pumpkins set up on two tables for the pumpkin carving contest. Show three different ways that the two tables can be set up.

5. Melissa made three more caramel apples than candied apples. She made 9 candied apples.
   a. How many caramel apples did Melissa make? Show your math thinking
   b. Write an equation with a symbol for the unknown that represents the problem.

Equation: _____________________________________
6. Mrs. Smith bakes 4 apple pies, 5 pumpkin pies and 3 cherry pies. How many pies does Mrs. Smith bake? Show two different ways to solve this problem.

7. For each of the following equations, fill in the number that makes the sentence true

   a. \(5 + 8 = \underline{\ \ \ \ }\)

   b. \(\underline{\ \ \ \ } = 12 - 7\)

   c. \(14 = \underline{\ \ \ \ } + 12\)

   d. \(\underline{\ \ \ \ } = 15\)
## Halloween Fun Initial Scoring Guide

<table>
<thead>
<tr>
<th>Halloween Fun Initial Scoring Guide</th>
<th>Points</th>
<th>Section Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. (1.NBT.2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Student shows two different representations of the number 88 using base ten blocks. For example 8 tens and 8 ones, 88 ones, 4 tens and 48 ones, 7 tens and 18 ones, etc</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>b. Student shows 4 tens in any representation (objects, base ten blocks, etc)</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>c. Student correctly states “Yes, he can make one group of ten and there will be 2 leftover” and shows appropriate work</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>2. (1.NBT.3)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Student shows correct relationship either 21 &gt; 12 or 12 &lt; 21</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>b. Student can show this response in a variety of ways using base ten blocks or decomposing each number and comparing the number of tens and ones in each number</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>3. (1.OA.1, 1.OA.5, 1.OA.8)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Student writes a correct equation such as 4 + g = 10</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>b. Students can show in a variety of methods that the number of ghosts that arrived at 8:00 pm is 6 such as counting on by 2, drawing a diagram or picture, or by solving the equation using an algorithm</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>4. (1.OA.1)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student shows three different ways that the two tables can be set up: 1 and 5, 2 and 4, 3 and 3, 4 and 2, 5 and 1 (0 and 6 and 6 and 0 are not acceptable answers since the pumpkins must be set up on both tables)</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>5. (1.OA.1, 1.OA.4, 1.OA.8)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Student correctly states and shows using any method such as counting on, drawing a picture, or solving the equation that Melissa made 12 candied apples.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>b. Student writes a correct equation such as 9 + 3 = a</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>6. (1.OA.2, 3, 5, 6)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student shows either with numbers, pictures or symbols that Mrs. Smith bakes 12 pies. Student may choose to use only numbers and associative property to prove or may also draw picture or use a number line to add</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>7. (1.OA.7, 1.OA.8)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Students must fill in a single number to make each equation true:</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>a. $5 + 8 =$ 13</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. $5 = 12 - 7$</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. $14 = 2 + 12$</td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. $15 = 15$</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Points</td>
<td>16</td>
<td>16</td>
</tr>
</tbody>
</table>

### Ratings

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<thead>
<tr>
<th>Novice</th>
<th>Apprentice</th>
<th>Practitioner</th>
<th>Expert</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 4</td>
<td>5 - 9</td>
<td>10 - 14</td>
<td>14 - 16</td>
</tr>
</tbody>
</table>
Grade 1 Unit 2
Final Performance Task: Winter Fun

1. Juan has 93 marshmallows for hot chocolate.
   a. Use base ten blocks to show two different ways to represent the number 93.

b. Juan has 60 gingerbread cookies. Show how you can group sixty (60) into tens (10's).

C) Juan has 17 gingerbread cookies. How can Juan make a group of ten? How many will Juan have left over? Show your thinking.
   a) Write a number sentence using greater than (>) or less than (<) to compare the numbers 14 and 23
      ______________________________________________________
   b. Using tens and ones prove why the greater number is greater.
      ______________________________________________________

3. The kindergarten students made six (6) snowmen. The first grade students made more. Now there are twelve (12) snowmen.
   a. Write an equation with a symbol for the unknown that represents the problem.
      Equation: _____________________________________________
   b. How many snowmen did the first grade students make? Show your work below.
      ______________________________________________________
4. There are eight (8) cups of hot chocolate on two tables. Show three different ways that the two tables can be set up.

5. Anna made five (5) more oatmeal cookies than gingerbread cookies. Anna made thirteen (13) gingerbread cookies.
   a. How many oatmeal cookies did Anna make? Show your math thinking:

   b. Write an equation with a symbol for the unknown that represents the problem.
   Equation: ________________________________
6. Mrs. Green bakes 7 chocolate chip cookies, 8 oatmeal cookies and 4 gingerbread cookies. How many cookies does Mrs. Green bake? Show two different ways to solve this problem.

7. For each of the following equations fill in the number that makes the sentence true:
   a. \( 6 + 7 = \)__________
   
   b. \( \)__________ = \( 14 - 5 \)
   
   c. \( 17 = \)__________ + 13
   
   d. \( \)__________ = 17
<table>
<thead>
<tr>
<th>Winter Fun Final Scoring Guide</th>
<th>Points</th>
<th>Section Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. (1.NBT.2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Student shows two different representations of the number 93 using base ten blocks. For example 9 tens and 3 ones, 93 ones, 4 tens and 53 ones, 7 tens and 23 ones, etc.</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>b. Student shows 6 tens in any representation (objects, base ten blocks, etc.)</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>c. Student correctly states “Yes, he can make one group of ten and there will be 7 leftover” and shows appropriate work</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>2. (1.NBT.3)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Student shows correct relationship either 23 &gt; 14 or 14 &lt; 23</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>b. Student can show this response in a variety of ways using base ten blocks or decomposing each number and comparing the number of tens and ones in each number</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>3. (1.OA.1, 1.OA.5, 1.OA.8)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Student writes a correct equation such as $6 + S = 12$</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>b. Students can show in a variety of methods that the number of snowmen is 6 and counting on by 2, drawing a diagram or picture, or by solving the equation using an algorithm</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>4. (1.OA.1)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student shows three different ways that the two tables can be set up: 1 and 7, 2 and 6, 4 and 4, 6 and 2, 7 and 1 (0 and 8 and 8 and 0 are not acceptable answers since the hot chocolate must be set up on both tables)</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>5. (1.OA.1, 1.OA.4, 1.OA.8)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Student correctly states and shows using any method such as counting on, drawing a picture, or solving the equation that Anna made 18 oatmeal cookies.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>b. Student writes a correct equation such as $13 + 5 = O, 5 + 13 = O$</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>6. (1.OA.2, 1.OA.3, 1.OA.5, 1.OA.6)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student shows either with numbers, pictures or symbols that Mrs. Smith bakes 19 cookies. Student may choose to use only numbers and associative property to prove or may also draw picture or use a number line to add.</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>7. (1.OA.7, 1.OA.8) Students must fill in a single number to make each equation true:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. $6 + 7 = 13$</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>b. $9 = 14 - 5$</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. $17 = 4 + 13$</td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. $17 = 17$</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Points</td>
<td>16</td>
<td>16</td>
</tr>
</tbody>
</table>