Math: Unit 13 Interpreting and using symbols in numeric expressions and comparisons

 March 10-13, 2014

(2 out of a 2 Week Duration)

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| **Content Objective:** * [1.OA.7](https://www.dropbox.com/s/ytfbtr8shs0wqtw/1.OA.7%20Unwrapped%20document.docx?dl=1). 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](https://www.dropbox.com/s/59bppjad4rfdf88/1.OA.8%20Unwrapped%20document.docx?dl=1). 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.NBT.3](https://www.dropbox.com/s/33vcjzwffskn4wp/1.NBT.3%20Unwrapped%20document.docx?dl=1). Compare two two-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons with the symbols >, =, and <. |
| **WARM UP: (problem of the day, etc) 10-15 MIN.**TW guide students to complete calendar activities: (using complete sentences) day of the week, month of the year, discuss specials of the day, sing songs about the days of the week and months of the year, quick images, counting incorporating tallies and/or graphs |
| **COMPUTATIONAL FLUENCY PRACTICE/Discussions: 10-15 MIN.*** Skip counting by 2s, 5s, and 10s forwards and backwards
* Number of the Day – Students discuss number patterns explaining using complete sentences how problem of the day was solved
* **Number Talks (Combinations 6-10, fact fluency 1-10)**

Unit 13 Review, Week 2, Days 1-5 |

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| **Materials Needed:** <http://www.youtube.com/watch?v=aMtrPTzTI1U> (More than This song (One Direction))<http://www.youtube.com/watch?v=S0anH3L2iBM> (Alligator song)**Practice Sheets 1.OA 7, 1.OA.8, 1.NBT.3**“True or False” gameUnit Final Assessment |

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|  **Anchor Chart** | **Focus:**  **patterns in the base-10 system** |
| **Background vocabulary to be used by the teacher:****CONTENT** *(nouns)***:** * Equations
* Expressions
* Equivalencies
* Conjectures

**SKILLS** *(verbs)***:*** Explain reasoning
* Create a representation
* Add
* Subtract
* Compare
* Draw conclusion

**Vocabulary:** * Equal/ Same As
* Greater Than Symbol (>)
* Less Than Symbol (<)
* Not Equal Symbol (≠)
* Addition Symbol/Plus sign (+)
* Subtraction Symbol/Minus sign (-)
* Equal Sign (=)
* Conjecture (a statement that is believed to be true but not yet proved)
* Value
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| **Mathematical Practices:**MP1: Make sense and preserveMP2:Abstract/quantitative reasoningMP 3: Construct arguments**MP 4: Model with math** MP 5: Use appropriate tools **MP 6: Attend to precision** MP 7: Make use of structure MP8: Regularity/repeated reasoning |

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| **TEACHER BACKGROUND*** This unit will focus on helping students apply their conceptual understanding of addition, subtraction, and comparison to interpret and write expressions and equations.
	+ It is important for students to make sense of the symbols involved, as well as knowing when to use them.
	+ An important concept to review is reasoning about whether or not equations are true or false.
	+ This unit incorporates many student-lead conversations that will be facilitated by the teacher. **Very little** if any worksheet based activities should occur.
* This unit also provides an opportunity for students to apply their understanding of the symbols while practicing their addition and subtraction strategies in different problem situations.
* Throughout the unit, students will develop conjectures that they are able to prove.

*Central concept, provides a real-world context, & continues through to reflection** The equal sign is one of the most important symbols in arithmetic and early algebra.
* The equal sign means “the same as.”
* The equal sign shows equivalence of value.
* There are multiple ways to show equivalent values. For example, 4+6=5+5
* When reading an equation, the language “equals” and “the same as” should be used interchangeably.
* A conjecture is a rule or conclusion that students can prove with mathematical reasoning.

*Focuses big idea on what is relevant to the student. Provides provocative questions that foster inquiry, understanding, and transfer of learning.** How can you show that value in another way?
* What does the equal sign mean and where can it be used?
* How can I prove my reasoning?
* Is that equation/expression true or false? How do you know?
* Is it true for all numbers?

**MISCONCEPTION*** Viewing the equal sign (=) as meaning “the answer is” instead of a sign demonstrating equivalence.
* The “answer” is not always to be shown on the right side of the equal sign.
* Numbers do not have to identical on each side of the equal sign.
* Not all subtraction problems are “take away” problems.
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|  **Beginning (introduction/Knowledge Building):****Monday-Thursday:** * 1. Review anchor chart
	2. practice adding doubles (2+2, 3+3 …)
	3. review making tens
 | **Student Engagement Strategies**TPSManipulativesPartnersWriting |

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| **Middle (Investigating/Exploring):****Monday-Wednesday:** **Daily Questions:** The vast majority of learning will take place through discussion and hands-on learning experience. In order to guide the discussion and help students develop valid conjectures, the teacher will pose some of the following questions:1. What happens when you add 0 to a number?
2. What happens when you subtract 0 from a number?
3. What happens when you add 1 to a number?
4. What happens when you subtract 1 from a number?
5. What happens when you reverse the numbers in an addition equation? (i.e. 4+5=5+4)
6. What happens when you reverse the numbers in a subtraction equation? (i.e. 5-4=4-5)
7. How can you use addition to help you solve a subtraction problem?

These questions will help students recognize the relationship between addition and subtraction. The teacher should focus on just one or two questions each day. Provide students with manipulatives so they are able to process and prove their answers. This will ensure that students have plenty of time to discuss the questions and explain their reasoning with pictures or concrete models. With support from the teacher, the students will use the discussions to state conjectures. They will prove the conjectures by testing them with real numbers (again pictures and concrete models should be used)  A conjecture is valid if it is true for all numbers. **LEARNING PLAN & ACTIVITIES:****Communication** Emphasize the meaning of the equal sign as a balance. It is important for students to learn that both sides of the equal sign are equivalent. Write problems that have the answer to the left of the equal sign such as 8 = 3 + 5. Include problems that ask students to show number relationships. **Ask them to use pictures and words to show why: 2+3= 3+2.****Representation** Use a balance scale to demonstrate both sides of an equation as being equal.For example, on one side of the scale, you could hang weights on 8 and 4. On the other side, hang a weight on 5. Ask what other number do you need on the side with the five to make your scale balance? 7You have represented the equation below: 8 + 4 = \_\_\_ + 5**Problem Solving** True or False? Write several equations on the board such as: 5 + 3 = 7, 4 + 4 = 8, 6 - 3 = 3, 2 + 8 = 11. The students task is to decide which of the equations are true and which are false. As the school year progresses, try using more difficult equations such as 8 - 3 = 4 + 3.**Thursday:**Administer assessment.**Friday: Grading Day** | **Student Engagement Strategies**TPSManipulativesPartnersWriting |

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| **Level 5: Distinguished Command** | **Level 4: Strong** **Command** | **Level 3: Moderate** **Command** | **Level 2: Partial****Command** |
| Student correctly identifies all of the correct equations.Student’s justifications (pictures and words) **demonstrate clearly their understanding** of equality and the commutative property.  The student is able to write true and false equations with accuracy. | Student correctly identifies **all of the correct equations.** Student’s justification is unclear whether they understand the equality of the commutative property. The student is able to **write true and false equations with accuracy** | Student correctly identifies some of the true equations. Student’s justification is **unclear** whether they understand the equality of the commutative property. Students **are able to write some true and false equations with some accuracy.** | Students may identify some true equations. Students is unable to justify their answer. Students are unable to write true and false equations. |

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| **End (Summary): (ex. Exit ticket, quick write)**Show two facts and ask if it is equivalent.3+2=9+1, 12=12 | Student Engagement:T-P-S, Whole group response, partners, independent work |

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| 4 Hour ELD Weekly Lesson Plan | **Week of Lesson:**  | March 10-14, 2014 |
| Time of Daily Lesson: | 9:25-10:05 | Grade Level: | 1st Grade |
| **ELPS (English Language Proficiency Standard):** | [ ]  **I** |  **[x]  Il**  | [ ]  **III** | [ ]  **IV** | **[ ]  V** |  |
| **Proficiency Level:** | **[ ] PE** | **[ ] E** | **[x]  B** | **[x]  I** |  |  |
| **Time Allocation: 30 min.**  | **Oral English Conversation** |
| **ELP Standard(s)/Performance Indicator(s):** **Student Friendly Language Objective:** | **II-LS-1-HI-5: responding to social conversations by rephrasing and repeating information, asking questions, and expressing one’s thoughts****II-LS-2-HI-2: independently reciting familiar rhymes, songs, chants and text with accurate pronunciation, prosody, voice projection and expression** |
|  **Vocabulary:** * Equal/ Same As
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* Less Than Symbol (<)
* Not Equal Symbol (≠)
* Addition Symbol/Plus sign (+)
* Subtraction Symbol/Minus sign (-)
* Equal Sign (=)
* Conjecture (a statement that is believed to be true but not yet proved)

Value |  |
| **Materials:** | -Vocabulary pictures <http://www.youtube.com/watch?v=aMtrPTzTI1U> (More than This song (One Direction))<http://www.youtube.com/watch?v=S0anH3L2iBM> (Alligator song) |
| LESSON DELIVERY |
| **Monday:**  | TW review vocabulary words using pictures/TPR. SW echo respond to definition and TPR. *use sentence stem; The word \_\_\_\_\_ means\_\_\_*TW use the vocabulary word in an academic sentence.SW echo respond to the sentence.SW use the word in a complete sentence. *use sentence stem; This word is \_\_\_\_\_\_ I have heard it or seen it at \_\_\_. Another way I can use this words in a sentence is \_\_\_\_\_.* TW use inside/outside circle to share the sentences multiple times. |
|  **Tuesday:** | TW review vocabulary words using pictures/TPR. SW echo respond to definition and TPR. *use sentence stem; The word \_\_\_\_\_ means\_\_\_*TW use the vocabulary word in an academic sentence.SW echo respond to the sentence.SW use the word in a complete sentence. *use sentence stem; This word is \_\_\_\_\_\_ I have heard it or seen it at \_\_\_. Another way I can use this words in a sentence is \_\_\_\_\_.* TW use inside/outside circle to share the sentences multiple times. |
| **Wednesday:**  | TW review vocabulary words using pictures/TPR. SW echo respond to definition and TPR. *use sentence stem; The word \_\_\_\_\_ means\_\_\_*TW use the vocabulary word in an academic sentence.SW echo respond to the sentence.TW show video to teach songSW sing the song using correct pronunciation TW ask “what is your favorite part of the song?’SW respond using “My favorite part is \_\_\_. I like it because \_\_\_\_. |
|  **Thursday:**  | TW review vocabulary words using pictures/TPR. SW echo respond to definition and TPR. *use sentence stem; The word \_\_\_\_\_ means\_\_\_*TW use the vocabulary word in an academic sentence.SW echo respond to the sentence.TW show video to teach songSW sing the song using correct pronunciation TW ask “what is your favorite part of the song?’SW respond using “My favorite part is \_\_\_. I like it because \_\_\_\_. |
| **Friday:**  | GRADING DAY |

Content Objective:

**1.NBT.3** Compare two two-digit numbers based

on meanings of the tens and ones digits,

recording the results of comparison

with the symbols >, =, and <.

Student friendly:

*I can compare two-digit numbers using <, =, and >.*

Content Objective:

[1.OA.7](https://www.dropbox.com/s/ytfbtr8shs0wqtw/1.OA.7%20Unwrapped%20document.docx?dl=1). 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.*

Student friendly:

*I know what an equal sign means and can tell if an addition or subtraction equations are true or false. 1.OA.7*

Content Objective:

[1.OA.8](https://www.dropbox.com/s/59bppjad4rfdf88/1.OA.8%20Unwrapped%20document.docx?dl=1). 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 =*  *.*

Student friendly:

*I can tell the missing number in an addition or subtraction problem. 1.OA.8*