

## Core Content

**Cluster Title:** Understand place value.

**Standard 4:** Compare two three-digit numbers based on meanings of the hundreds, tens, and ones digits, using  $>$ ,  $=$ , and  $<$  symbols to record the results of comparisons.

### **MASTERY Patterns of Reasoning:**

#### **Conceptual:**

Students will understand that when comparing two numbers, one is looking at the whole number, not just individual digits.

Students will understand that when comparing two numbers, if the number of hundreds is the same then one should look at and compare the number of tens.

Students will understand that two three-digit numbers that have equal value are represented by the  $=$  sign.

#### **Procedural:**

Students can use the vocabulary words (greater than, less than, equal to) to compare two three-digit numbers in terms of value.

Students can use the vocabulary words and  $>$ ,  $<$ ,  $=$  symbols together to compare two three-digit numbers in terms of value.

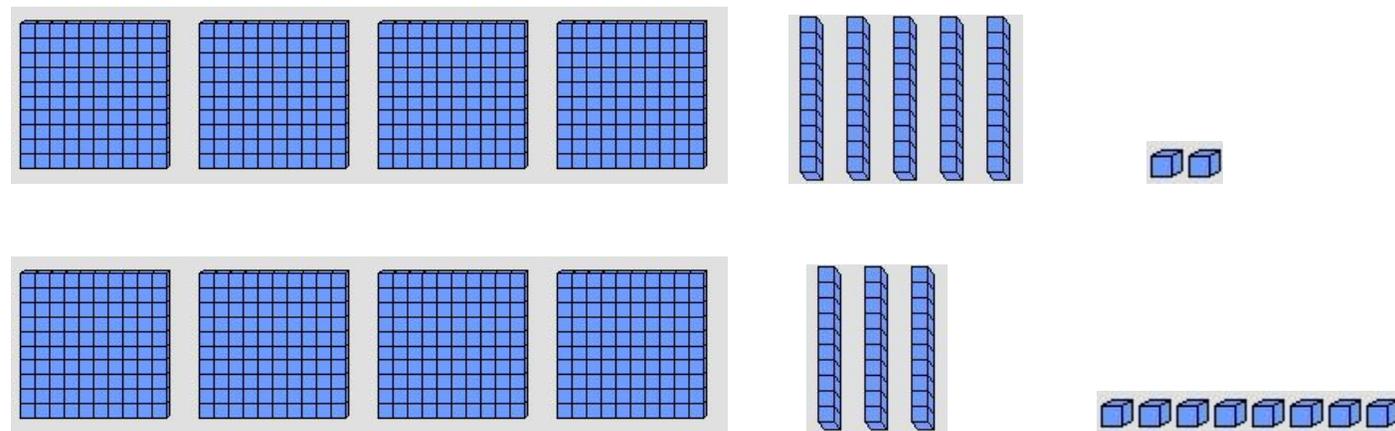
Students can use only symbols to compare two three-digit numbers in terms of value.

#### **Representational:**

Students can model greater than, less than and equal to using sets of money.

Students can model each number with base ten blocks (straws, beans, or place value drawings, etc.), attending to precision in the placement of hundreds with hundreds, tens with tens, and ones with ones.

(Example:  $452 > 438$ , 452 is greater than 438)



## Supports for Teachers

### Critical Background Knowledge

#### Conceptual:

Students will understand comparison of two-digit numbers using the words *greater than*, *less than*, and *equal to*.

#### Procedural:

Students can solve problems using only the vocabulary words.

Students can solve problems using  $>$ ,  $=$ , and  $<$  symbols.

#### Representational:

Students can compare sets of objects using vocabulary.

Students can compare two-digit numbers using  $>$ ,  $=$ , and  $<$  symbols.

<b>Academic Vocabulary and Notation</b>					
greater than, less than, more, fewer, compare, equal to, < , > , =					
<b>Instructional Strategies Used</b>	<b>Resources Used</b>				
<p>Before introducing the symbols, teach the vocabulary and review the concept of comparing two double-digit numbers using the words greater than, less than, and equal to.</p> <p>Play “guess my number” using a classroom number line. The teacher picks a number, then children ask questions in terms of greater than or less than. (For example, the teacher chooses a number between 10 and 80; students begin guessing numbers, and the teacher offers clues such as “My number is less than Billy’s guess of 45”; “My number is more than Jamie’s guess of 21” etc.) The teacher writes the clues on the board using the &lt; and &gt; symbols. Later, the students can choose the numbers and give the clues.</p> <p>“Fruit Basket”: give every student an index card and have him/her create his/her own three-digit number. Once everyone has chosen a number, students quickly find a partner and compare their numbers to decide who has the greater number. The teacher calls out “fruit basket,” and all students pick a new partner. The teacher can choose each time whether students are identifying the number that is “greater than” or “less than.” Play continues for five to eight rounds.</p>	<p>Murphy, Stuart J. <i>More or Less (MathStart 2)</i>. HarperCollins, 2005.</p> <p>Murphy, Stuart J. <i>Just Enough Carrots (MathStart 2)</i>. HarperCollins, 1997.</p>				
<b>Assessment Tasks Used</b>					
<p><b>Skill-Based Task:</b> Students will compare sets of numbers using symbols (see example):</p>	<table border="1"> <tr> <td>Student problem:</td> </tr> <tr> <td>435      532</td> </tr> <tr> <td>Completed:</td> </tr> <tr> <td>435 &lt; 532</td> </tr> </table> <p><b>Problem Task:</b> Terri wants to know if her school has more students than her cousin’s. Her school has 556 students. Her cousin’s school has 567 students. Which school has more students? Use &lt;, &gt; or = symbols to show the results of the comparison. How do you know your answers are correct?</p>	Student problem:	435      532	Completed:	435 < 532
Student problem:					
435      532					
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435 < 532					