

## Core Content

**Cluster Title: Understand decimal notation for fractions, and compare decimal fractions.**

**Standard 7:** Compare two decimals to hundredths by reasoning about their size. Recognize that comparisons are valid only when the two decimals refer to the same whole. Record the results of comparisons with the symbols  $>$ ,  $=$ , or  $<$ , and justify the conclusions, e.g., by using a visual model.

**MASTERY Patterns of Reasoning:****Conceptual:**

Students will understand that decimal values can only be compared when they refer to the same whole.

Students will understand that two decimal values can be written differently but still be equivalent ( $0.1 = 0.10$ ).

**Procedural:**

Students can compare two decimal values with the symbols  $>$ ,  $=$ , or  $<$ .

**Representational:**

Students can record the comparison of two decimal values by using a visual model, e.g., grid drawing, base ten blocks, pictures, tiles.

Students can justify the comparison of two decimal values by using a visual model, e.g., grid drawing, base ten blocks, pictures, tiles, number line model or meter stick.

## Supports for Teachers

**Critical Background Knowledge****Conceptual:**

Students will understand that decimals represent part of a whole and can be represented as fractions with denominators of 10 or 100 (see 4.NF.6.).

Students will understand comparison of whole numbers based on place value.

**Procedural:**

Students can write a decimal by looking at a visual model.

<p>Students can use the symbols <math>&gt;</math>, <math>=</math>, <math>&lt;</math> to compare whole numbers and fractions.                  Students can locate decimal values on a number line (see 4.NF.6).</p> <p><b>Representational:</b>                  Students can use a model to visually represent fractions.                  Students can place decimal values on a number line (see 4.NF.6).</p>		
<p><b>Academic Vocabulary and Notation</b></p> <p>decimal, tenth, hundredth, fraction, equivalent, <math>&gt;</math>, <math>=</math>, <math>&lt;</math>, 0.00</p>		
<p><b>Instructional Strategies Used</b></p> <ol style="list-style-type: none"> <li>1. Use grids or base ten blocks to match fraction representations to decimal representations, e.g. <math>1/10 = 0.1</math>. Students benefit from hands-on practice more than from just observing the teacher work examples.</li> <li>2. Emphasize the use of 0 when there are no whole units, e.g., 0.1.</li> <li>3. Use a meter stick and number line to show decimal placement and relationships.</li> </ol>		<p><b>Resources Used</b></p> <p>The following link could be used to compare, even though it is intended for addition and subtraction:  <a href="http://nlvm.usu.edu/en/nav/frames_asid_264_g_2_t_1.html?from=category_g_2_t_1.html">http://nlvm.usu.edu/en/nav/frames_asid_264_g_2_t_1.html?from=category_g_2_t_1.html</a></p>
<p><b>Assessment Tasks Used</b></p> <p><b>Skill-Based Task:</b>                  Compare</p> <ol style="list-style-type: none"> <li>1. 0.1 and 0.7</li> <li>2. 1.2 and 2.1</li> <li>3. 0.3 and 0.30</li> <li>4. 0.5 and 0.05</li> <li>5. 0.4 and 0.17</li> </ol>		<p><b>Problem Task:</b>                  Ron says 0.17 is greater than 0.4. Kym says Ron is wrong. Who is right? Justify your answer with written explanation and a visual model.</p>