

Just In Time Quick Check
Standard of Learning (SOL) 4.3c

Strand: Number and Number Sense

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The student will compare and order decimals.

Grade Level Skills:

- Compare two decimals expressed through thousandths, using symbols ($>$, $<$, $=$, and \neq) and/or words (*greater than*, *less than*, *equal to*, and *not equal to*).
- Order a set of up to four decimals, expressed through thousandths, from least to greatest or greatest to least.

Just in Time Quick Check

Just in Time Quick Check Teacher Notes

Supporting Resources:

- VDOE Mathematics Instructional Plans (MIPS)
 - [4.3c - Comparing Decimals](#) (Word) / [PDF Version](#)
- VDOE Word Wall Cards: Grade 4 ([Word](#)) | ([PDF](#))
 - Decimal Place Value Position
 - Less Than
 - Greater Than
 - Equal To
 - Equality
 - Inequality

Supporting and Prerequisite SOL: [4.1b](#), [4.2a](#), [4.3a](#), [3.1c](#), [3.2c](#), [2.1c](#)

SOL 4.3c - Just in Time Quick Check

1. Miki says that 5.069 is greater than 5.3. Is Miki correct? Explain your thinking.
2. Complete each number sentence to make the statement true. Use no more than five digits in each number. You may use digits more than one time.

0	1	2	3	4	5	6	7	8	9
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1.01	=
	< 1.101
	> 2.054
2.504	≠

3. Write the following numbers in order from least to greatest.

7.8

7.68

7.608

7.086

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Common Errors/Misconceptions and their Possible Indications

1. Miki says that 5.069 is greater than 5.3. Is Miki correct? Explain your thinking.

A common misconception for some students is thinking that a number with more digits is always larger than a number with fewer digits. This misconception is frequently caused by applying whole number reasoning to decimal numbers. This thinking neglects the importance of the decimal point placement to the value of the digits in the number.

These students may need to build conceptual understanding of decimals by using base 10 blocks to construct models of decimal numbers and then comparing the models. Using concrete materials provides visual cues that help students understand the importance of considering the place of each digit when comparing.

Concrete materials like base 10 blocks can also be used to help students understand that a number like 5.3 can be thought of as 5.300 because 3 tenths is equivalent to 300 thousandths. Developing understanding of this equivalent relationship will help students as they compare decimals.

Using a place value chart as a visual aid for comparing the individual digits in a number can help students see the importance of the place of a number when comparing. For visual continuity, teachers can suggest that students place a zero where no digit is represented. In this question the tenths place confirms that 5.3 is greater than 5.069. Example:

Ones	.	Tenths	Hundredths	Thousandths
5	.	0	6	9
5	.	3	0	0

2. Complete each number sentence to make the statement true. Use no more than five digits in each number. You may use digits more than one time.

0	1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---	---

1.01 =
< 1.101
> 2.054
2.504 ≠

A common error for some students is confusing the greater than symbol with the less than symbol. Another common error is misinterpreting the not equal symbol and reading it as an equal symbol. Some students may have developed misconceptions when initially learning to compare numbers that will transfer to decimal comparison.

For those students demonstrating a lack of understanding with how to use these symbols, begin by comparing whole numbers using concrete representations and comparison words. As students become confident with comparison words, transition to using symbols and concrete representations of decimal numbers. Finally, transition to using symbols to compare decimals in standard form. Using Word Wall cards as a visual cue will also benefit students.

Using a place value chart as a visual aid for comparing the individual digits in a number can also help students see the importance of the place of a number when comparing.

3. Write the following numbers in order from least to greatest.

7.8 7.68 7.608 7.086

Common errors when ordering numbers include focusing on the first digit in the number, the number of digits in the number, or the “whole number” value of the digits in the number. These students often forget to think about the place of each digit when comparing.

In addition to building models of the decimal numbers with concrete materials, some students may benefit from focusing on only two numbers at a time. These students can choose two numbers to compare and use place value thinking (and a place value chart, if needed) to order the two numbers. After ordering two numbers, these

students can compare a third number to the first two numbers and determine where it should go in the order and then repeat this process with the last number.

Another visual that helps some students is stacking the numbers on top of each other. As students stack, they line the numbers up by lining up the decimal point and each of the places. This provides students a method to compare each number in its place value.

7.8

7.68

7.608

7.086

In the above example, students can see the smallest number is 7.086, followed by 7.608, 7.68, and 7.8.