

Decimal Detective

Compare decimal parts with confidence.

GRADE 4 • NY-4.NF.7

NY-4.NF.7 "Compare two decimals to hundredths by reasoning about their size. Recognize that comparisons are valid only when two decimals refer to the same whole. Record the results of comparisons with the symbols $>$, $=$, or $<$."

NAME _____

DATE _____

COMPARE THE SAME WHOLE

Compare decimals only when they name parts of the same whole. Line up the decimal points, then compare tenths and hundredths from left to right. A decimal with one digit after the decimal can be written in hundredths, so $0.2 = 0.20$.

WORKED EXAMPLE

Compare 0.46 and 0.49. Write $>$, $=$, or $<$.

1. Both decimals name parts of the same whole.
2. The tenths digits are the same, 4.
3. Compare the hundredths digits: 6 is less than 9.
4. So 46 hundredths is less than 49 hundredths.

Answer: $0.46 < 0.49$

PRACTICE 6 problems

1 PRACTICE 1: Compare 0.7 and 0.68. Write $>$, $=$, or $<$.

ANSWER _____

2 PRACTICE 2: Compare 0.35 and 0.35. Write $>$, $=$, or $<$.

ANSWER _____

3 PRACTICE 3: Compare 0.09 and 0.12. Write $>$, $=$, or $<$.

ANSWER _____

4 PRACTICE 4: Compare 1.04 and 1.4. Write $>$, $=$, or $<$.

ANSWER _____

5 PRACTICE 5: Compare 0.56 and 0.65. Write $>$, $=$, or $<$.

ANSWER _____

6 PRACTICE 6: Both decimals name parts of the same whole. Compare 0.83 and 0.8. Write a symbol and a sentence that explains your reasoning.

ANSWER _____

APPLY IT

Show your work

- 1** APPLY 1: In a reading challenge, Noor and Eli are each working toward the same 100-page goal. Noor has read 0.72 of the goal. Eli has read 0.67 of the goal. Compare the decimals. Who has read more of the goal? Explain.

WORK SPACE

ANSWER _____

- 2** APPLY 2: Priya has painted 0.80 of a 10-square mural. Mateo has painted 0.75 of a 20-square mural. Can you use 0.80 and 0.75 alone to decide who painted more squares? Explain.

WORK SPACE

ANSWER _____

CHALLENGE

One step up

CHALLENGE: All of these decimals name parts of the same whole. Put 0.08, 0.8, 0.80, and 0.18 in order from least to greatest. State which decimals are equal and explain why.

WORK SPACE AND ANSWER

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	PRACTICE 1: Compare 0.7 and 0.68. Write $>$, $=$, or $<$.	$0.7 > 0.68$
2	PRACTICE 2: Compare 0.35 and 0.35. Write $>$, $=$, or $<$.	$0.35 = 0.35$
3	PRACTICE 3: Compare 0.09 and 0.12. Write $>$, $=$, or $<$.	$0.09 < 0.12$
4	PRACTICE 4: Compare 1.04 and 1.4. Write $>$, $=$, or $<$.	$1.04 < 1.4$
5	PRACTICE 5: Compare 0.56 and 0.65. Write $>$, $=$, or $<$.	$0.56 < 0.65$
6	PRACTICE 6: Both decimals name parts of the same whole. Compare 0.83 and 0.8. Write a symbol and a sentence that explains your reasoning.	$0.83 > 0.8$ because 83 hundredths is greater than 80 hundredths.

PART 2 • APPLY IT

- $0.72 > 0.67$. Noor has read more of the goal because 72 hundredths is greater than 67 hundredths.** The goals are the same whole, so the decimals can be compared. Compare 72 hundredths with 67 hundredths.
- No. The decimals refer to different wholes, so comparing 0.80 and 0.75 alone does not tell who painted more squares.** The murals have different total numbers of squares. A decimal comparison is valid only when the decimals refer to the same whole.

CHALLENGE

$0.08 < 0.18 < 0.8 = 0.80$. The decimals 0.8 and 0.80 are equal because both are 80 hundredths.

Accept equivalent decimal forms, such as 0.70 for 0.7 and 0.80 for 0.8. For explanations, accept correct place-value reasoning that compares decimals only when they refer to the same whole.