

Decimal Detectives

Compare, order, and explain decimals through thousandths.

GRADE 4 • 4.NS.4.e

4.NS.4.e "Compare using symbols ($<$, $>$, $=$) and/or words (greater than, less than, equal to) and order (least to greatest and greatest to least), a set of no more than four decimals expressed through thousandths, using multiple strategies (e.g...."

NAME _____

DATE _____

COMPARE PLACE BY PLACE

Line up the decimal points, then compare digits from left to right. The first place with different digits tells which number is greater, and you may add zeros at the end of a decimal to help compare.

WORKED EXAMPLE

Compare 0.482 and 0.479.

1. Line up the decimal points: 0.482 and 0.479.
2. The ones and tenths digits match.
3. Compare the hundredths digits: $8 > 7$.
4. The first different digits show that 0.482 is greater.

Answer: $0.482 > 0.479$

PRACTICE 6 problems

1 Write $<$, $>$, or $=$. 0.306 ____ 0.360

ANSWER _____

2 Write $<$, $>$, or $=$. 1.005 ____ 1.05

ANSWER _____

3 Use 0.500 as a benchmark. Write $<$, $>$, or $=$.
0.498 ____ 0.503

ANSWER _____

4 Write $<$, $>$, or $=$. 0.900 ____ 0.9

ANSWER _____

5 Order from least to greatest: 0.218, 0.281, 0.208

ANSWER _____

6 Compare 0.672 and 0.675. Write a sentence that explains your answer using place value.

ANSWER _____

APPLY IT Show your work

- 1** Ava saved a stop-motion movie file that is 0.875 GB. Noor's movie file is 0.857 GB. Which file is larger? Write a comparison sentence.

WORK SPACE

ANSWER _____

- 2** Four robotics teams recorded their times, in minutes, to finish a coding challenge: Team A, 1.208; Team B, 1.28; Team C, 1.082; Team D, 1.218. Order the teams from fastest to slowest.

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

Order these decimals from least to greatest: 3.09, 3.009, 3.9, 3.099. Then write one sentence explaining how zeros helped you compare them.

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	Write $<$, $>$, or $=$. 0.306 ____ 0.360	$0.306 < 0.360$
2	Write $<$, $>$, or $=$. 1.005 ____ 1.05	$1.005 < 1.05$
3	Use 0.500 as a benchmark. Write $<$, $>$, or $=$. 0.498 ____ 0.503	$0.498 < 0.503$
4	Write $<$, $>$, or $=$. 0.900 ____ 0.9	$0.900 = 0.9$
5	Order from least to greatest: 0.218 , 0.281 , 0.208	0.208, 0.218, 0.281
6	Compare 0.672 and 0.675 . Write a sentence that explains your answer using place value.	$0.672 < 0.675$ because the tenths and hundredths digits are the same, and 2 is less than 5 in the thousandths place.

PART 2 • APPLY IT

- $0.875 > 0.857$. Ava's movie file is larger.** The tenths digits are both 8, but the hundredths digit 7 is greater than 5.
- Team C, Team A, Team D, Team B** Fastest means the least time. Write 1.28 as 1.280 , then order the times from least to greatest: 1.082 , 1.208 , 1.218 , 1.280 .

CHALLENGE

3.009 , 3.09 , 3.099 , 3.9 . When each number is written to thousandths, they are 3.009 , 3.090 , 3.099 , and 3.900 , so the order follows their decimal digits.

Accept equivalent decimals with trailing zeros, such as 1.050 for 1.05 . For written explanations, accept correct place-value reasoning that identifies the first different digit or uses a valid benchmark.