

Decimal Detectives

Use place value to compare decimals through thousandths.

GRADE 4 • 4.NS.4

4.NS.4 "The student will use mathematical reasoning and justification to represent, compare, and order decimals through thousandths, with and without models..."

NAME _____

DATE _____

COMPARE PLACE BY PLACE

Line up the decimal points and compare digits from left to right. If needed, add zeros to the right of a decimal, because adding zeros does not change its value.

WORKED EXAMPLE

Compare 0.472 and 0.479 using $<$, $>$, or $=$.

1. The tenths digits are equal: 4 and 4.
2. The hundredths digits are equal: 7 and 7.
3. Compare the thousandths digits: 2 is less than 9.

Answer: $0.472 < 0.479$

PRACTICE 6 problems

- 1** What is the value of the digit 6 in 0.863?

ANSWER _____

- 2** Write three tenths and eight thousandths in standard form.

ANSWER _____

- 3** Compare: 0.570 ____ 0.57

ANSWER _____

- 4** Compare: 0.804 ____ 0.84

ANSWER _____

- 5** Order these decimals from greatest to least:
0.215, 0.251, 0.205, 0.125

ANSWER _____

- 6** In 0.777, how does the value of the 7 in the tenths place compare to the value of the 7 in the thousandths place?

ANSWER _____

APPLY IT Show your work

- 1** At a robot race, Jada's robot finished in 3.458 seconds, Luis's robot finished in 3.485 seconds, and Mei's robot finished in 3.405 seconds. Which robot was fastest? Write the times from fastest to slowest.

WORK SPACE

ANSWER _____

- 2** In a coding game, Aiden scored 8.306 points, Nia scored 8.36 points, and Omar scored 8.063 points. Who earned the highest score? Order the scores from greatest to least.

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

Mina says that 0.408 is greater than 0.48 because 408 is greater than 48. Is Mina correct? Rewrite both decimals to the thousandths place and explain which decimal is greater.

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	What is the value of the digit 6 in 0.863?	0.06
2	Write three tenths and eight thousandths in standard form.	0.308
3	Compare: 0.570 ____ 0.57	0.570 = 0.57
4	Compare: 0.804 ____ 0.84	0.804 < 0.84
5	Order these decimals from greatest to least: 0.215, 0.251, 0.205, 0.125	0.251, 0.215, 0.205, 0.125
6	In 0.777, how does the value of the 7 in the tenths place compare to the value of the 7 in the thousandths place?	0.7 is 100 times 0.007.

PART 2 • APPLY IT

1. **Mei's robot was fastest. 3.405, 3.458, 3.485** The fastest robot has the least time. Compare the decimals from left to right: $3.405 < 3.458 < 3.485$.
2. **Nia earned the highest score. 8.36, 8.306, 8.063** Rewrite 8.36 as 8.360. Then compare: $8.360 > 8.306 > 8.063$.

CHALLENGE

No. $0.408 < 0.480$. The tenths digits are both 4, but 0 hundredths is less than 8 hundredths.

Accept trailing-zero forms such as 0.840 for 0.84 and 8.360 for 8.36. For written explanations, accept any correct place-value comparison that identifies the first place where the digits differ.