LESSON MAKER PRO

Below Zero Decisions

Compare rational numbers and explain what the order means.

GRADE 6 · 6.NS.C.7b

CCSS.Math.Content.6.NS.C.7b "Write, interpret, and explain statements of order for rational numbers in real-world contexts. For example, write -3 o C > -7 o C to express the fact that -3 o C is warmer than -7 o C."

NAME _____ DATE _____

COMPARE IN CONTEXT

On a number line, numbers farther right are greater. For negative numbers, the number closer to 0 is greater. Use <, >, or =, then tell what the comparison means in the situation.

WORKED EXAMPLE

At a snow camp, one morning was -1.8 C and the next morning was -2.3 C. Write an inequality and tell which morning was warmer.

1. Both temperatures are negative.
2. -1.8 is closer to 0 than -2.3.
3. So -1.8 is greater than -2.3.

Answer: -1.8 C > -2.3 C. The -1.8 C morning was warmer.

PRACTICE 6 problems

1 At sunrise, Town A is -5/8 C and Town B is -1/4 C. Write an inequality. Which town is colder?

ANSWER _____

2 Two elevator sensors show locations of -12.5 m and -12.05 m relative to street level. Write an inequality. Which location is lower?

ANSWER _____

3 At a lake, a fish finder marks Boat A at -3.6 m and Boat B at 1/5 m relative to the water surface. Write an inequality. Which mark is above the surface?

ANSWER _____

4 Two friends track money they owe. Kai has -4.25 dollars and Luz has -4 1/4 dollars. Use =, <, or > to compare the amounts.

ANSWER _____

5 A diving team has two sensors at -7/10 km and -0.65 km relative to sea level. Write an inequality. Which sensor is deeper?

ANSWER _____

6 A skateboard app shows changes from the starting height of -0.09 m and -0.1 m. Write an inequality. Which change is closer to the starting height?

ANSWER _____

APPLY IT Show your work

1 An esports club records each team's point change after one round. List the point changes from least to greatest. Which team had the greatest loss?

ESPORTS CLUB POINT CHANGES

Team	Point change
Nova	-1.75
Orbit	-1/2
Pixel	-1.2

WORK SPACE

ANSWER _____

2 Before a snowboarding trip, the temperature is -4.5 C at 6:00 a.m. and -1 3/4 C at noon. Write an inequality comparing the temperatures. Which time is warmer?

WORK SPACE

ANSWER _____

CHALLENGE One step up

On a mountain-bike trail map, two elevations are -3/5 km and -0.7 km relative to the trailhead. Jordan says -3/5 km is lower because 3/5 is less than 0.7. Is Jordan correct? Rewrite -3/5 as a decimal, write the correct inequality, and explain why.

WORK SPACE AND ANSWER

ANSWER KEY

Below Zero Decisions

GRADE 6 · 6.NS.C.7b

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	At sunrise, Town A is -5/8 C and Town B is -1/4 C. Write an inequality. Which town is colder?	**-5/8 C < -1/4 C. Town A is colder.**
2	Two elevator sensors show locations of -12.5 m and -12.05 m relative to street level. Write an inequality. Which location is lower?	**-12.5 m < -12.05 m. The -12.5 m location is lower.**
3	At a lake, a fish finder marks Boat A at -3.6 m and Boat B at 1/5 m relative to the water surface. Write an inequality. Which mark is above the surface?	**-3.6 m < 1/5 m. Boat B's mark is above the surface.**
4	Two friends track money they owe. Kai has -4.25 dollars and Luz has -4 1/4 dollars. Use =, <, or > to compare the amounts.	**-4.25 = -4 1/4**
5	A diving team has two sensors at -7/10 km and -0.65 km relative to sea level. Write an inequality. Which sensor is deeper?	**-7/10 km < -0.65 km. The sensor at -7/10 km is deeper.**
6	A skateboard app shows changes from the starting height of -0.09 m and -0.1 m. Write an inequality. Which change is closer to the starting height?	**-0.09 m > -0.1 m. The -0.09 m change is closer to the starting height.**

PART 2 · APPLY IT

1. **-1.75 < -1.2 < -1/2. Nova had the greatest loss.** Order the negative point changes from farthest below 0 to closest to 0. Nova's change, -1.75, is the least value.
2. **-1 3/4 C > -4.5 C. Noon is warmer.** Rewrite -1 3/4 as -1.75 if helpful. Since -1.75 is closer to 0 than -4.5, it is greater and warmer.

CHALLENGE

Jordan is not correct. -3/5 = -0.6, and -0.6 km > -0.7 km because -0.6 is closer to 0, so it is higher.

Accept equivalent decimal or fraction forms and correctly placed units. For explanations, accept wording that correctly connects a greater negative value to being warmer, higher, closer to 0, or a smaller loss, as the context requires.