LESSON MAKER PRO

Opposite Moves

Turn subtraction into addition.

GRADE 7 · 7A.NS.A.8.c

7A.NS.A.8.c "Explain subtraction of rational numbers as addition of additive inverses."

NAME _____ DATE _____

THE BIG IDEA

To subtract a rational number, add its additive inverse, also called its opposite. Keep the first number, change the sign of the number being subtracted, and then add.

WORKED EXAMPLE

Find 2/5 - (-3/10).

1. Rewrite the subtraction: 2/5 + 3/10
2. Use a common denominator: 4/10 + 3/10
3. Add: 7/10

Answer: 7/10

PRACTICE 6 problems

1 Rewrite as addition of the opposite, then find the value: 9 - (-6).

ANSWER _____

2 Rewrite as addition of the opposite, then find the value: -12 - 4.

ANSWER _____

3 Rewrite as addition of the opposite, then find the value: 3/4 - (-1/2).

ANSWER _____

4 Rewrite as addition of the opposite, then find the value: -5/6 - 1/3.

ANSWER _____

5 Rewrite as addition of the opposite, then find the value: 1.8 - 3.1.

ANSWER _____

6 Rewrite as addition of the opposite, then find the value: -0.7 - (-2.4).

ANSWER _____

APPLY IT Show your work

1 In a video game, your score is -3.5 points. A penalty takes away 1.25 more points. Write an addition equation using the opposite, then find your new score.

WORK SPACE

ANSWER _____

2 The temperature was -2.25°C before school and 1.5°C after school. Subtract the morning temperature from the afternoon temperature to find the change. Write an addition equation using the opposite.

WORK SPACE

ANSWER _____

CHALLENGE One step up

A student writes -3/4 - (-5/8) = -3/4 + (-5/8) = -11/8. Explain the mistake and find the correct value.

WORK SPACE AND ANSWER

ANSWER KEY

Opposite Moves

GRADE 7 · 7A.NS.A.8.c

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Rewrite as addition of the opposite, then find the value: 9 - (-6).	**9 + 6 = 15**
2	Rewrite as addition of the opposite, then find the value: -12 - 4.	**-12 + (-4) = -16**
3	Rewrite as addition of the opposite, then find the value: 3/4 - (-1/2).	**3/4 + 1/2 = 5/4**
4	Rewrite as addition of the opposite, then find the value: -5/6 - 1/3.	**-5/6 + (-1/3) = -7/6**
5	Rewrite as addition of the opposite, then find the value: 1.8 - 3.1.	**1.8 + (-3.1) = -1.3**
6	Rewrite as addition of the opposite, then find the value: -0.7 - (-2.4).	**-0.7 + 2.4 = 1.7**

PART 2 · APPLY IT

1. **-3.5 + (-1.25) = -4.75 points** Taking away 1.25 points means subtracting 1.25. Rewrite -3.5 - 1.25 as -3.5 + (-1.25), then add.
2. **1.5 + 2.25 = 3.75°C** Subtract the morning temperature: 1.5 - (-2.25). Add its opposite to find a temperature increase of 3.75°C.

CHALLENGE

The student added -5/8 instead of its opposite, 5/8. The correct calculation is -3/4 + 5/8 = -6/8 + 5/8 = -1/8.

Accept equivalent fractions, such as 1 1/4 for 5/4. For each problem, check that the addition equation uses the opposite of the number being subtracted.