

Name _____

Understand Integers**Essential Question** How can you use positive and negative numbers to represent real world quantities?**UNLOCK the Problem** REAL WORLD

Connect You have used a number line to show 0 and whole numbers. You can extend the number line to the left of 0 to show the **opposites** of the whole numbers. For example, the opposite of $+3$ is -3 . Any whole number or the opposite of a whole number is called an **integer**.



Negative integers are written with a negative sign, $-$. Positive integers are written with or without a positive sign, $+$.

- How can you tell whether a number is an integer or not?

Example 1

The temperature in Fairbanks, Alaska, was 37 degrees below zero. Write an integer to represent the situation.

STEP 1 Decide whether the integer is positive or negative.

The word _____ tells me that the integer is _____.

STEP 2 Write the integer: _____.

So, the temperature in Fairbanks was _____ degrees.

Example 2

The Koala Bears gained 11 yards on a football play. Write an integer to represent the situation. Then, tell what 0 represents in that situation.

STEP 1 Decide what positive integers and negative integers represent.

Positive integers represent yards _____.

Negative integers represent yards _____.

STEP 2 Decide what 0 represents.

So, 0 means yards were neither _____

nor _____.

Math Talk Identify some words that might tell you that an integer is negative.

Share and Show



Write an integer to represent the situation.

1. a loss of \$25

The word *loss* represents an integer that is

_____.

The integer that represents the situation

is _____.

2. 73 degrees above zero _____

3. 200 feet below sea level _____

4. a profit of \$76 _____

Write an integer to represent the situation. Then, tell what 0 represents.

Situation	Integer	What Does 0 Represent?
5. The passenger jet flew at an altitude of 34,000 feet.		
6. Zack lost 45 points on his first turn.		
7. Craig was 20 minutes early for his appointment.		

On Your Own

Write an integer to represent the situation.

8. the temperature went up 2 degrees _____

9. 11 feet below sea level _____

10. an increase of 37 students _____

11. 15 seconds before rocket liftoff _____

Write an integer to represent the situation. Then, tell what 0 represents.

Situation	Integer	What Does 0 Represent?
12. Amelia earned \$1,200 in one week.		
13. The coal was 2 miles below ground level.		
14. The alarm clock rang 5 minutes early.		

Problem Solving



15. Gina withdrew \$600 from her checking account to pay for her new guitar. What integer can you write to represent the withdrawal? What does 0 represent?
