

Integers, Absolute Value & the Coordinate Plane

Fill in each part when its number appears on the slide.

PART 1 • TARGET

I can use integers to describe real-world situations, compare them, find absolute value, and graph points in all four quadrants.

PART 2 • WARM-UP

1. What is the opposite of "5 degrees above zero"? Write both as integers.

Key: 5 degrees below zero; +5 and -5.

2. Which is colder: -8°F or -3°F ? How do you know?

Key: -8°F , because it is farther below zero (farther left on the number line).

3. Plot (3, 2) in your notes. Which way did you move first?

Key: Right 3 (x first), then up 2.

PART 3 • PREDICTION

It was -8°F in Fort Wayne and -3°F in Evansville. Which city was colder?

Circle one: ☐ Fort Wayne ☐ Evansville ☐ Same

PART 4 • VOCABULARY

Word	Meaning
Integer	Whole numbers and their opposites (...-2, -1, 0, 1, 2...).
Opposite	A number the same distance from 0 on the other side (5 and -5).
Absolute value	A number's distance from 0, always positive or zero. $ -7 = 7$.
Quadrant	One of four regions of the coordinate plane, numbered I-IV counterclockwise.

PART 5 • OPPOSITES IN REAL LIFE

Positive and negative numbers describe OPPOSITES, like gain and LOSS.

Check: Write an integer for "a loss of 12 yards."

Answer: _____

Key: -12. A loss is negative.

PART 6 • COMPARE INTEGERS

Numbers increase to the RIGHT. -3 is GREATER than -8.

Check: Which statement is true?

Circle one: (A) $-3 < -8$ (C) $-3 > -8$ (D) $-8 > -3$

Key: (C) $-3 > -8$. -3 is to the right of -8.

PART 7 • ABSOLUTE VALUE

ABSOLUTE VALUE is distance from zero. It is never NEGATIVE.

Check: $|-150| = ?$

Answer: _____

Key: 150. -150 is 150 units from 0.

PART 8 • THE COORDINATE PLANE

In (x, y), x moves LEFT OR RIGHT and y moves UP OR DOWN.

Check: What is the distance from A (-3, 4) to B (2, 4)?

Answer: _____

Key: 5. $|-3| + |2| = 5$.

PART 9 • WORKED EXAMPLE

1. Problem: plot (-3, 4), then find its distance to (5, 4).
2. Step 1: Start at the origin. $x = -3$, so move 3 left.
3. Step 2: $y = 4$, so move 4 up. That is Quadrant II.
4. Step 3: Both points have $y = 4$. Opposite signs, so add: $|-3| + |5| = 8$.
5. Answer: 8 units apart.

PART 10 • WE DO

What is the distance between (-4, 3) and (5, 3)?

Answer: 9 units

PART 11 • YOU DO

Which is the coldest temperature?

Circle one: (A) -4°F (B) 0°F (C) 6°F (D) -14°F

Key: (D) -14°F . -14 is farthest left on the number line.

PART 12 • WORK TIME: EXTREME EARTH FIELD TRIP

Write each code piece as you earn it: Stop 1: D Stop 2: E Stop 3: P Stop 4: T Stop 5: H

Final code: DEPTH

PART 13 • WRAP-UP

Was your prediction in Part 3 right? One thing I learned today:

Key: Right 3 (x first), then up 2.