TEACHER KEY · LESSON WORKSHEET · GRADE 6 · 6.NS.1-6.NS.3 · 6.AF.5

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 0 (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: THE SONAR SUBMARINE QUEST

Write each code piece as you earn it: Level 1: S Level 2: O Level 3: N Level 4: A Level 5: R

Final code: SONAR

PART 13 · WRAP-UP

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

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