

Integers and Absolute Value

Lesson 9-2

Name: _____


Date: _____

Class: _____

Key Vocabulary Level 2 Standard

Picture first, then the word, then a plain-language meaning. Say each word out loud.

...-2, -1, 0, 1, 2...




-3 -2 -1 0 1 2 3

... -3, -2, -1, 0, 1, 2, 3 ... shown on a number line with 0 in the center

Integer

Write the definition:

0 → positive




-3 -2 -1 0 1 2 3

+5 means 5 above zero, like 5 floors above ground level

Positive

Write the definition:

negative ← 0




-3 -2 -1 0 1 2 3

-3 means 3 below zero, like 3 floors underground

Negative

Write the definition:

3 units



-3 0 3

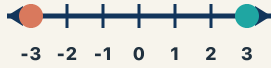
$|-3| = 3$

$|-5| = 5$ and $|5| = 5$ — both are 5 units from 0

Absolute value

Write the definition:

-3 and 3 are opposites



3 and -3 are opposites – both are 3 units from 0

Opposite

Write the definition:

Guided Notes Level 2 Standard



WHAT WE'RE LEARNING TODAY

I can identify integers and find their absolute value.



Fill in each blank as we go. Use the Word Bank to help you.



WORD BANK – FILL EACH BLANK WITH THE BEST WORD

Integer

Positive

Negative

Absolute value

Opposite



Tap any word to see what it means and a picture.

1

A whole number or its opposite, like -2 , 0 , or 5 , is an .

2

A number greater than zero is .

3

A number less than zero is .

4

The distance of a number from zero, always positive, is its .

5

Two numbers the same distance from zero but on different sides, like 4 and -4 , are .



Watch & Try – Worked Examples

See the notes in action: watch one worked all the way through, then try the next with the same steps.

 **I do – watch**

Follow each step as your teacher solves it.

Problem: What is the absolute value of -9?

- A. 9
- B. -9
- C. 0
- D. 1

Step 1 Absolute value is the distance from zero.

Step 2 -9 is 9 units from zero, so $|-9| = 9$.


 **Answer:** A. 9

 **Try – put the steps in order**

Drag the cards (or use the ▲ ▼ buttons) to put the solution steps in the right order, then press **Check**.

-9 is 9 units from zero, so $|-9| = 9$.

Absolute value is the distance from zero.

 **We do – together**

Solve this one with your class using the same steps.


Problem: Which integer has the GREATEST absolute value: -3, 7, -5, 2?

- A. 7
- B. -5
- C. -3
- D. 2

Step 1 _____

Step 2 _____

Answer: _____

 **You do — your turn**

Now try one on your own. Show every step.

Problem: What is $|0|$?

- A. 0
- B. 1
- C. -1
- D. There is no answer

Show your work:

Try It

Solve on your own. Check the answer key when you are done.

1. Two treasure sites report their temperatures: -5 degrees F at the Ice Cave and -2 degrees F at the Frozen Dock. Which site is COLDER?

- A. -5 degrees F (Ice Cave)
- B. -2 degrees F (Frozen Dock)
- C. They are the same
- D. Neither is below zero

Show your work:

2. Captain Vega compares $|-12|$ (a deep cave) and $|7|$ (a hilltop). Which absolute value is GREATER?

- A. $|-12|$ because $12 > 7$
- B. $|7|$ because 7 is positive
- C. They are equal
- D. $|-12| = -12$, so $|7|$ is greater

Show your work:

Stretch Your Thinking

Level 2 enrichment

Challenge task — explain your reasoning in full sentences.

A submarine is at -150 meters and a bird is flying at +150 meters. A student says the submarine is closer to sea level because -150 is less than 150. Is the student correct? Explain using absolute value.

Sentence starter: The student is ___ because absolute value measures ___. Since $|-150| = \underline{\quad}$ and $|150| = \underline{\quad}$, both are ___ from sea level. The student confused ___ with ___.

Show your work:

Reflect — Exit Ticket

Which integer has an absolute value of 8 and is located to the LEFT of zero on the number line?

- A. 8
- B. -8
- C. 0
- D. -80

Your answer:
