



MATH WITH MR DJ

GRADE 6 · THE NUMBER SYSTEM

ABSOLUTE VALUE

Today's goal: I can demonstrate understanding of absolute value of rational numbers.



Tan



Digit



Blaze



Pi



WARM-UP

Turn & talk · 1 min

$$|-5| = ?$$

- 1 Those bars mean absolute value.

TURN & TALK

is the answer 5 or -5?



Absolute value is a DISTANCE

- 1 $|x|$ asks: how far is x from zero?
- 2 A distance is never negative — you cannot be -3 steps away from something.



BIG IDEA 2

$|-5| = 5$ and $|5| = 5$

- 1 -5 is five units left of 0.
- 2 5 is five units right of 0.
- 3 Same distance → same absolute value.

REMEMBER

The bars ask 'how far?', not 'which side?'



BIG IDEA 3

Debt: the two questions

1 Ana owes \$75 $\rightarrow -75$. Ben owes \$40 $\rightarrow -40$.

2 $|-75| > |-40| \rightarrow$ Ana's debt is BIGGER

3 $-40 > -75 \rightarrow$ Ben's balance is the GREATER number

REMEMBER

Bigger debt, smaller number. Both are true.



BIG IDEA 4

Two different questions

- 1 'Which is greater?' → look at POSITION on the number line
- 2 'Which is farther from zero?' → look at ABSOLUTE VALUE

REMEMBER

With negatives, the answers can point opposite ways.



SPOT THE SLIP!

Turn & talk

Something went wrong here...

THE PROBLEM

Find $|0|$. Explain your answer.

WHAT A STUDENT DID

Said 'undefined' or 1. Zero is the one number whose absolute value is itself and also 0.

YOUR MISSION

What went wrong? What's the right answer?



Find $|0|$. Explain your answer.

1 Zero is zero units from itself.

2 Distance of 0 is 0.

Answer:

0



YOUR TURN

Whiteboards up!

Pick your pepper!



🌶️ MILD

Find $|-9|$.

#1 on your practice sheet



🌶️🌶️ MEDIUM

Find $|-1\frac{1}{2}|$.

#3 on your practice sheet



🌶️🌶️🌶️ SPICY

A diver is at -30 m and a bird is at -10 m relative to sea level. Whose position has the greater absolute value, and who is higher? Explain.

#6 on your practice sheet



How's it going?



3 • Got it!

I could teach it



2 • Almost

One more example, please



1 • Not yet

I need some help

NOW YOU!

Practice sheet: everyone does Mild & Medium, then climb the peppers.

Stuck? Look back at Mr DJ's example at the top of the sheet.

Need it again? Watch "Absolute Value Explained Step by Step" on YouTube @MathWithMrDJ

Brain break: 3 new daily puzzles at puzzles.mathwithmrdj.com

