

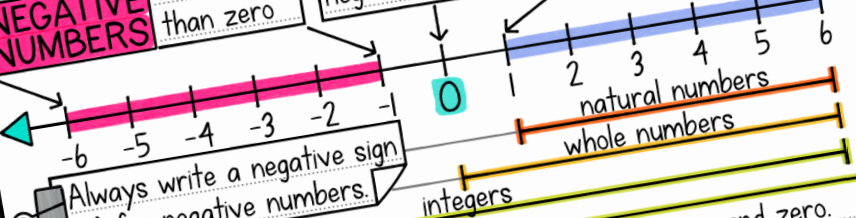
6th GRADE MATH SKETCH NOTES GROWING BUNDLE

NUMBER LINE VOCABULARY 1

Numbers get smaller when moving to the left on a number line.  Numbers get larger when moving to the right on a number line. 

NEGATIVE NUMBERS are less than zero. **ZERO** is neither negative or positive. **POSITIVE NUMBERS** are greater than zero.

Always write a negative sign (-) for negative numbers.

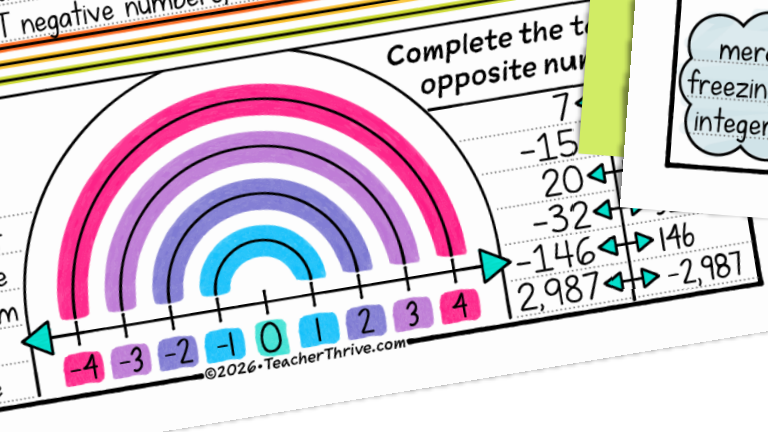
Integers:  natural numbers, whole numbers.

INTEGERS ARE positive numbers, negative numbers, and zero.
ARE NOT fractions or decimals.

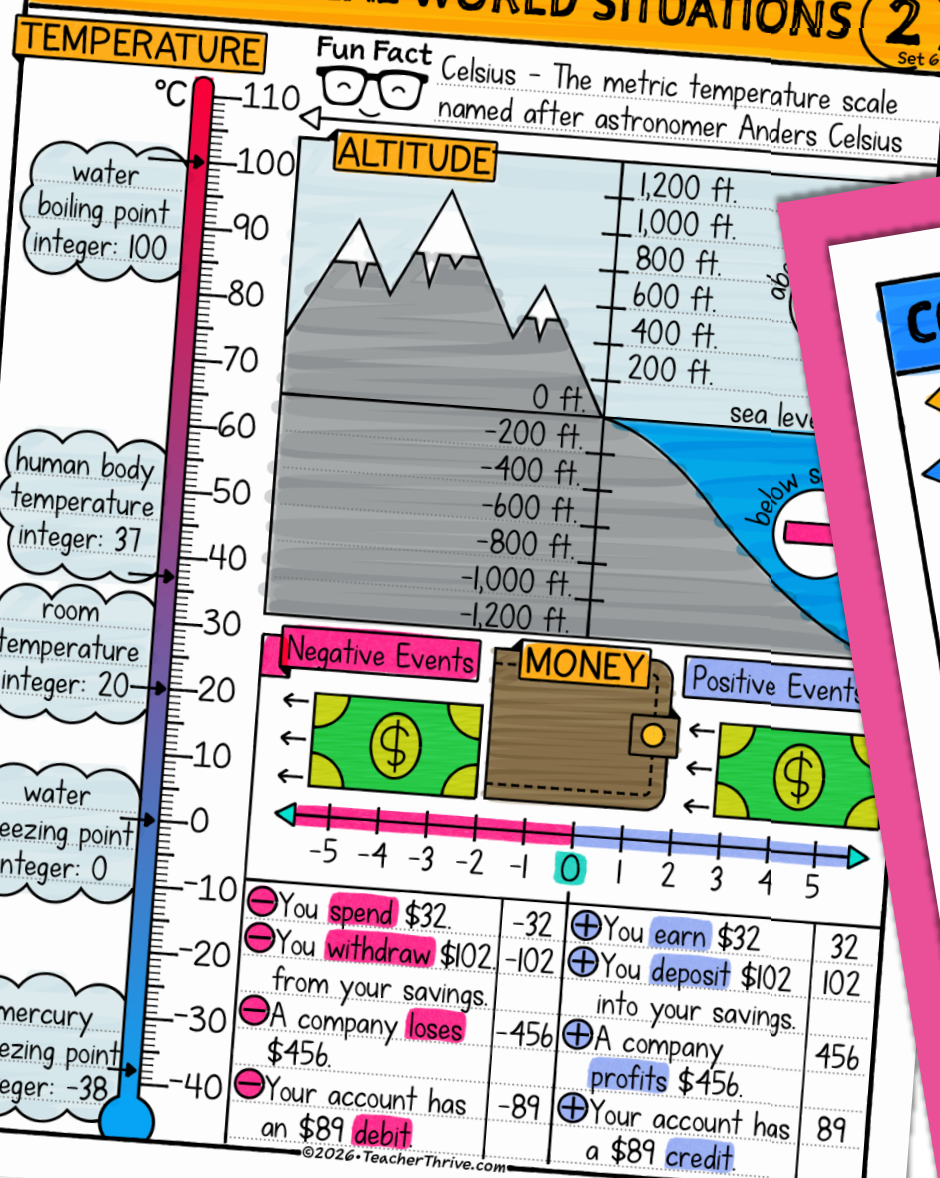
WHOLE NUMBERS ARE positive numbers, including zero.
ARE NOT negative numbers, fractions, or decimals.

NATURAL NUMBERS ARE used for counting/ordering. AKA "counting numbers".
ARE NOT negative numbers, zero, fractions, or decimals.

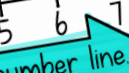
OPPOSITE NUMBERS ARE two numbers that are the same distance from zero on the number line.



INTEGERS: REAL WORLD SITUATIONS 2



COMPARE and ORDER INTEGERS 3

Numbers get smaller when moving to the left on a number line.  Numbers get larger when moving to the right on a number line. 

Two positive numbers: $b > 4$
 b is to the right of 4 on the number line.
 b is greater than 4, 4 is less than b .

One positive and one negative number: $3 > -7$
 3 is to the right of -7 on the number line.
 3 is greater than -7 , -7 is less than 3.

Two negative numbers: $-2 > -5$
 -2 is to the right of -5 on the number line.
 -2 is greater than -5 , -5 is less than -2 .

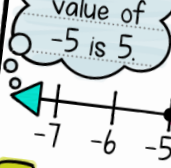
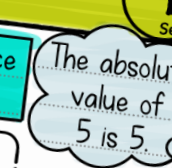
Ascending order means integers are arranged from least to greatest.

Descending order means integers are arranged from greatest to least.

Ascending (Least to Greatest)	Descending (Greatest to Least)
-15, -4, 3, 8	8, 3, -4, -15
-18, 4, 20, 34	34, 20, 4, -18
-123, -48, -17, 7	7, -17, -48, -123
-76, 0, 2, 59	59, 2, 0, -76
-78, -6, 15, 26	26, 15, -6, -78
-90, -10, -2, 39	39, -2, -10, -90
-71, -55, -9, 24	24, -9, -55, -71

ABSOLUTE VALUE 4

The absolute value of a number is the distance of that number from zero on a number line.

The absolute value of -5 is 5.  The absolute value of 5 is 5. 

Vertical bars are used to denote the absolute value of a number.

-8 is 8 units away from 0. Write: $|-8| = 8$. Say: The absolute value of -8 is 8.

10 is 10 units away from 0. Write: $|10| = 10$. Say: The absolute value of 10 is 10.

-20 is 20 units away from 0. Write: $|-20| = 20$. Say: The absolute value of -20 is 20.

Because distances are always positive, the absolute value of a positive or a negative number is always positive.

Opposite numbers are two numbers that have the same absolute value. -7 and 7 are opposites. $-7 = 7 = |7|$.

$-x = x = |x|$

NUMBER	ABSOLUTE VALUE	OPPOSITE
15	15	-15
-32	32	32
-40	40	40
108	108	-108
18 or -18	18	-18 or 18

6th GRADE MATH SKETCH NOTES

GROWING BUNDLE

COMPARE and ORDER ABSOLUTE VALUES 5

GREATER THAN **EQUAL TO** **LESS THAN**

A number's absolute value increases the farther it is from zero.

Opposite numbers have equal absolute values.

A number's absolute value decreases the closer it is to zero.

THINK The number closer to zero has an absolute value that is "less than."

THINK The number farther away from zero has an absolute value that is "greater than."

1-15 **<** **1-40**

+ **+** **+** **+**

+ **+** **+** **+**

+ **+** **+** **+**

+ **+** **+** **+**

GREATEST TO LEAST

LEAST TO GREATEST

RATIONAL NUMBERS 6

✓ ARE ✗ ARE NOT

RATIONAL NUMBERS

✓ positive and negative numbers, zero, decimals, fractions

INTEGERS

✓ positive and negative numbers, & zero

WHOLE NUMBERS

✓ positive numbers, including zero

NATURAL NUMBERS

✗ negative numbers, zero, decimals, fractions

ALL-SOME-NONE LOGIC

RATIONAL NUMBERS -6, 21, 0, $\frac{3}{4}$, -102, 0.25, $\frac{2}{3}$, 36, 0.7

INTEGERS -6, 21, 0, -102, 36

WHOLE NUMBERS 0, 21, 36

NATURAL NUMBERS 21, 36

- Sort the rational numbers into the logic diagram.
- Use the diagram to solve the logic statements.

ALL integers are whole numbers.

No decimal number is an integer.

SOME rational numbers are negative.

ALL natural numbers are whole numbers.

No whole numbers are negative.

SOME rational numbers are fractions.

OPPOSITES & ABSOLUTE VALUES 7

I KNOW... The absolute value of a number is the distance of that number from zero on a number line.

I ALSO KNOW... Opposite numbers are the same distance from zero on a number line. They have the same absolute value.

INTEGERS

DECIMALS

FRACTIONS

ABSOLUTE VALUE

NUMBER

OPPOSITE

ABSOLUTE VALUE

FACTORS and MULTIPLES 8

FACTORS

Numbers multiplied together that result in a product: $7 \times 3 = 21$ 7 & 3 are factors, 21 is the product. AKA numbers that divide evenly into another.

MULTIPLES

The products that result from multiplying two factors. 21 is a multiple of 7 & 3.

THINK Divisibility, fixed, few, limited, finite

THINK Skip counting, many, multitude, unlimited, infinite

FACTORS

MULTIPLES

FACTORS

MULTIPLES

FACTORS

MULTIPLES

FACTORS

MULTIPLES

FACTORS

MULTIPLES

FACTORS

MULTIPLES

FACTORS

MULTIPLES

FACTORS

MULTIPLES

WHEN

DO WE USE EACH?

12

18

20

Skip Counting

Common Denominator

Least Common Multiple

6th GRADE MATH SKETCH NOTES GROWING BUNDLE

And
many
more to
come!!!

