

Do Now: Complete the statement using < or >

1. -8 ? $<$ 3
2. -9 ? $>$ -12
3. 0 ? $>$ -4
4. -15 ? $<$ -7

Sep 10-11:21 AM

1.4 Comparing and Ordering Integers

7.NS.1

- SWBAT compare and order integers.
- SWBAT calculate absolute value, opposites, and solve expressions involving absolute value operations.

Calculators: No

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Water freezes at 0°C , but some animals can resist freezing by producing a chemical that lowers the temperature at which the water in their bodies freezes. This temperature is called the supercooling point. Which of the insects listed in the table has the lowest supercooling point?

Insect	Supercooling point ($^{\circ}\text{C}$)
Arctic beetle	-54
Gall beetle	-35
Goldenrod galfly	-9
Snow flea	-19
Woolly bear caterpillar	-70

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Integers - numbers such as ..., -3, -2, -1, 0, 1, 2, 3, ...

- Do not include decimals or fractions

Negative Integers - integers that are less than 0 such as ..., -3, -2, -1

Positive Integers - integers that are greater than 0 such as 1, 2, 3, ...

***Note: 0 is neither positive nor negative (*neutral*)

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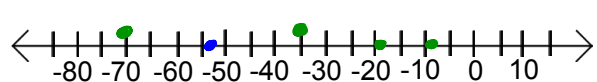
Negative Integers **Positive Integers**



neutral

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Graph the insects supercooling points:



Insect	Supercooling point ($^{\circ}\text{C}$)
Arctic beetle	-54 ✓
Gall beetle	-35 ✓
Goldenrod galfly	-9 ✓
Snow flea	-19 ✓
Woolly bear caterpillar	-70 ✓

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~~Use a number line~~ to order these integers from least to greatest:

-8, 5, -4, 2, 0, 6

-8, -4, 0, 2, 5, 6

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Absolute Value - the distance a number is from zero

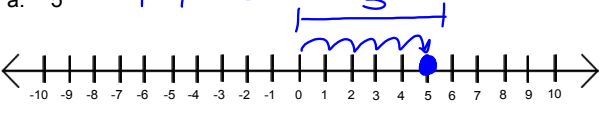
- written symbolically as $|a|$
- distance is always a **positive** integer

|a|

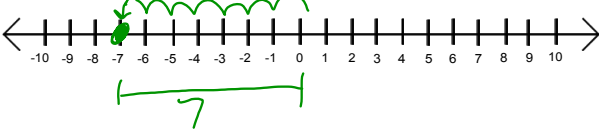
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State the absolute value of the number.

a. 5 *$|5| = 5$*



b. -7 *$|-7| = 7$*



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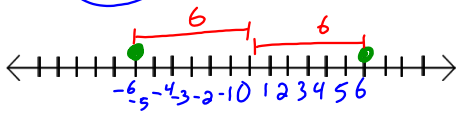
Opposites - two numbers have same absolute value but different signs

- always add up to be zero
- always a positive and a negative integer

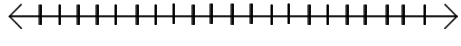
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State the opposite of the number.

a. 6 *-6* *$6 + (-6) = 0$*



b. -15 *15*



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Checkpoint.
State the absolute value and the opposite of the number.

a. 3 *$|3| = 3$* *opposite = -3*

b. -1 *$|-1| = 1$* *opposite = 1*

c. 10 *$|10| = 10$* *opposite = -10*

d. -11 *$|-11| = 11$* *opposite = 11*

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Evaluate the expression when $y = -5$

a. $-y$
 $-(-5)$
 5

b. $17 - |y|$
 $17 - |-5|$
 $17 - 5$
 12

c. $2(y) + 3$
 $2(-5) + 3$
 $-10 + 3$
 -7

abs. value
multiply

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Checkpoint.

Evaluate the expression when $x = -4$

a. $-x$ 4

b. $12 - |x|$ 8


c. $|x| + 9$ 13

d. $3(x) - 1$ -13

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"Perfect practice makes perfect."

Working individually or with a partner, complete the worksheet.




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Exit Pass 1.4

1. Evaluate the expression when $x = 1,234,567$

$$| -(-(-(-(-x)))) |$$

2. Explain why absolute value of a number is never negative.



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Reflection of Today's Lesson


1.4 Comparing and Ordering Integers
 7.NS.1
 SWBAT compare and order integers. ✓
 SWBAT calculate absolute value, opposites, and solve expressions involving absolute value operations. ✓

Sep 14-8:55 AM

Homework

Textbook

pg. 24 #1-16, 43-50



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