

6<sup>TH</sup> GRADE MATH

# Unit 3

Extending the Number  
System

Date:

### Extra! Extra! Read all about it!

We are going to start Unit 3 (Extending the Number System). Here is a list of IXL topics, for every topic you complete you will earn some extra credit. Here are the possible points you can earn on each topic. The extra credit will be due by \_\_\_\_\_.

#### Smart Score on IXL

- 100% - 5 extra points
- 95% - 4 extra points
- 90% - 3 extra points
- 85% - 2 extra points
- 80% - 1 extra point

#### Unit 3 Topics – You can earn up to 65 extra credit points. You got this 😊

6.NS.C.5 Understand that positive and negative numbers are used together to describe quantities having opposite directions or values (e.g., temperature above/below zero, elevation above/below sea level, credits/debits, positive/negative electric charge); use positive and negative numbers to represent quantities in real-world contexts, explaining the meaning of 0 in each situation.

1. Understanding integers (6-M.1)

6.NS.C.6.a Recognize opposite signs of numbers as indicating locations on opposite sides of 0 on the number line; recognize that the opposite of the opposite of a number is the number itself.

2. Understanding opposite integers (6-M.)
3. Opposites of rational numbers (6-P.)
4. Rational numbers: find the sign (6-P.7)

6.NS.C.7.a Interpret statements of inequality as statements about the relative position of two numbers on a number line diagram.

5. Compare integers (6-M.6)

6.NS.C.7.b Write, interpret, and explain statements of order for rational numbers in real-world contexts.

6. Compare rational numbers (6-P.2)
7. Put rational numbers in order (6-P.3)
8. Compare temperatures above and below zero (6-T.9)
9. Compare and order rational numbers: word problems (6-P.)

6.NS.C.7.c Understand the absolute value of a rational number as its distance from 0 on the number line and distinguish comparisons of absolute value from statements about order in a real-world context.

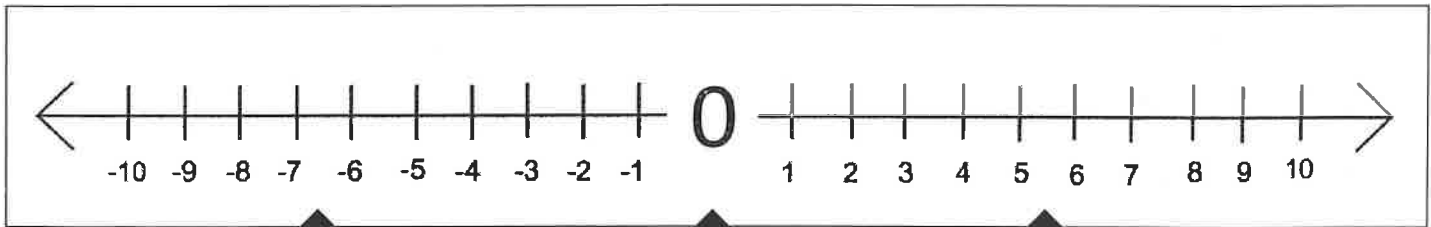
10. Absolute value (6-M.5)
11. Absolute value of rational numbers (6-P.4)
12. Understanding absolute value (6-M.4)
13. Absolute value and integers: word problems (6-M.9)

# Positive & Negative #'s

Name: \_\_\_\_\_

Date: \_\_\_\_\_

**Daily Target:** I can define and identify integers on a number line.



Negative numbers appear to the \_\_\_\_\_ of zero on a number line.

Zero represents the \_\_\_\_\_ or starting point.

Positive numbers appear to the \_\_\_\_\_ of zero on a number line.

## Integer

An integer is a \_\_\_\_\_ number and its opposite.

**Example:**

5 and -5      4 and -4

## Practice!

*Are they positive or negative?*

- 1) 4 numbers to the right of 2: \_\_\_\_\_
- 2) 8 numbers to the left of 6: \_\_\_\_\_
- 3) 2 numbers to the right of -7: \_\_\_\_\_
- 4) 3 numbers to the left of -1: \_\_\_\_\_
- 5) 5 numbers to the right of -4: \_\_\_\_\_
- 6) 6 numbers to the left of -2: \_\_\_\_\_

*List the opposite integer.*

5 : \_\_\_\_\_

-4 : \_\_\_\_\_

384: \_\_\_\_\_

-19: \_\_\_\_\_

**Positive & Negative #'s**

Name: \_\_\_\_\_

Date: \_\_\_\_\_

**Daily Target:** I can define and identify integers on a number line.**Integer Situations:** Each situation below can be labeled as either having a positive or negative integer.**Temperature:** Above  $0^\circ$  → \_\_\_\_\_Below  $0^\circ$  → \_\_\_\_\_**Elevation:** Above sea level → \_\_\_\_\_

Below sea level → \_\_\_\_\_

**Bank Accounts:** Withdraw → \_\_\_\_\_

Deposit → \_\_\_\_\_

Credit (account is given money) → \_\_\_\_\_

Debit (money is taken out) → \_\_\_\_\_

**Electric Charge:** Positive → \_\_\_\_\_

Negative → \_\_\_\_\_

**Situations:** gain → \_\_\_\_\_

Losses → \_\_\_\_\_

**Practice!***Identify if the situations below would have positive or negative integers AND what the zero (the starting point or origin of a situation) would be.*

Clarksville is 476 ft above sea level

Positive

Negative

Zero: \_\_\_\_\_

A bank account is credited \$15

Positive

Negative

Zero: \_\_\_\_\_

A football team loses 7 yards on a play

Positive

Negative

Zero: \_\_\_\_\_

Clarksville is  $8^\circ$  above freezing

Positive

Negative

Zero: \_\_\_\_\_

The Dead Sea is 314 meters below sea level

Positive

Negative

Zero: \_\_\_\_\_

Name: \_\_\_\_\_

Write each situation as an integer.

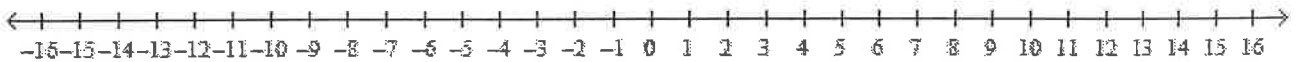
- 1) Forty-eight below sea level. \_\_\_\_\_
- 2) A pay cut of \$14,000. \_\_\_\_\_
- 3) The football player had a 60 yard gain on the play. \_\_\_\_\_
- 4)  $60^{\circ}$  below zero. \_\_\_\_\_
- 5) A withdraw of \$50. \_\_\_\_\_
- 6) A deposit of \$100. \_\_\_\_\_

Graph each integer **and** its opposite on the number line.



- 7) -2                      8) 3                      9) 5                      10) -4                      11) 1

Use the number line below to write an integer for each question.



- 12) 5 units to the right of 3 is \_\_\_\_\_
- 13) 3 units to the left of -5 is \_\_\_\_\_
- 14) 7 units to the left of 0 is \_\_\_\_\_
- 15) 2 units to the right of -13 is \_\_\_\_\_

## Absolute Value of #'s

Name: \_\_\_\_\_

Date: \_\_\_\_\_

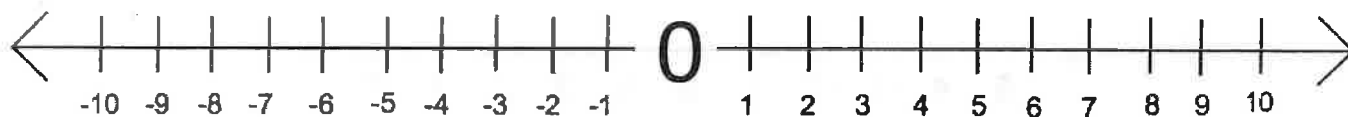
**Daily Target:** I can use my knowledge of absolute values to compare and order different numbers.

### Absolute Value

The \_\_\_\_\_ a number is from \_\_\_\_\_ on the \_\_\_\_\_ line represented using vertical bars.

The absolute value of a number \_\_\_\_\_ is written as \_\_\_\_\_ and the absolute value of a number will \_\_\_\_\_ be positive!!

Example:  $|7| = 7$ ,  $|-7| = 7$ ,  $-|7| = -7$ ,  $-|-7| = -7$



Use the number line below to find the absolute value of each number.

1.  $|5| = \underline{\hspace{2cm}}$

3.  $|-6| = \underline{\hspace{2cm}}$

6.  $|-10| = \underline{\hspace{2cm}}$

2.  $|0| = \underline{\hspace{2cm}}$

4.  $-|2| = \underline{\hspace{2cm}}$

5.  $-|-3| = \underline{\hspace{2cm}}$

### Practice!

1. What is the absolute value of 3?

$|3| = \underline{\hspace{2cm}}$

2. What is the absolute value of -5?

$|-5| = \underline{\hspace{2cm}}$

3. Compare 2 and  $|-5|$  (use  $<$ ,  $>$ , or  $=$ )

$2 \underline{\hspace{1cm}} |-5|$

4. Compare 3 and  $|-3|$

$3 \underline{\hspace{1cm}} |-3|$

5. Compare  $|-7|$  and  $|7|$

$|-7| \underline{\hspace{1cm}} |7|$

**Absolute Value of #'s**

Name: \_\_\_\_\_

Date: \_\_\_\_\_

**Daily Target:** I can use my knowledge of absolute values to compare and order different numbers.

When comparing and ordering numbers there are a few things to remember:

+ \_\_\_\_\_ - (a positive # is greater than a negative #)

+ \_\_\_\_\_ 0 (a positive # is greater than 0)

- \_\_\_\_\_ + (a negative # is less than a positive #)

- \_\_\_\_\_ 0 (a negative # is less than 0)

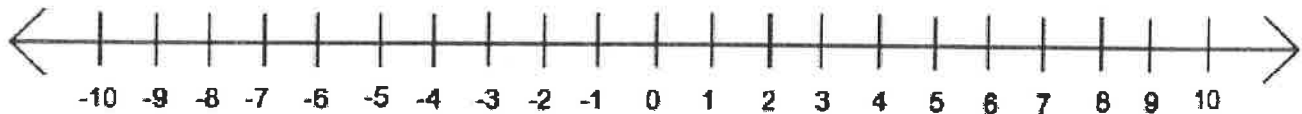
< means to the left on the number line

> means to the right on the number line

Least to greatest is left to right (L → R) on the number line

Greatest to least is right to left (R → L) on the number line

**Use the number line to answer the questions below:**



**Compare each pair of integers using < or >.**

1)  $4 \underline{\hspace{1cm}} 3$

2)  $-2 \underline{\hspace{1cm}} 5$

3)  $-5 \underline{\hspace{1cm}} -1$

4)  $0 \underline{\hspace{1cm}} -4$

**Order the integers from least to greatest.**

1)  $4, -3, 2 \rightarrow \underline{\hspace{3cm}}$

2)  $|-3|, -1, 0 \rightarrow \underline{\hspace{3cm}}$

**Answer the word problems using the number line.**

1) Tim and Kylie played golf this morning. Tim scored -4, Kylie scored +3. Because the player with the lowest score in golf wins, who won this morning's golf game?

2) In Barrow, Alaska, the average temperature in December is  $-11^{\circ}\text{F}$ . In January, the average temperature is  $-13^{\circ}\text{F}$ . In which month is Barrow warmer?

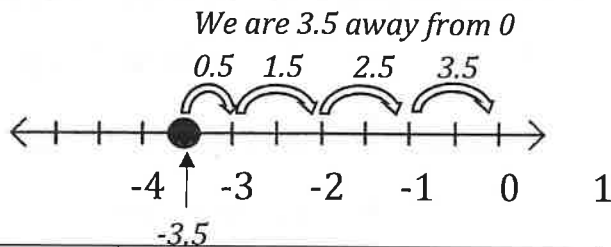
**Daily Target:** I can find compare, order, and find the absolute value of integers and rational numbers.

**Example:**

**Finding the Absolute Value**

Find the absolute value of  $|-3.5|$ .

$$|-3.5| = 3.5$$

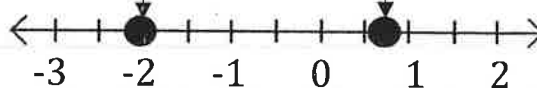


**Comparing Rational Numbers**

Compare the pair of numbers using  $<$  or  $>$ .

$$-2 \text{ \_\_\_\_ } \frac{9}{15} = -2 < \frac{9}{15}$$

$-2$  is farther on the left than  $\frac{9}{15}$   
so  $-2$  is less than  $\frac{9}{15}$

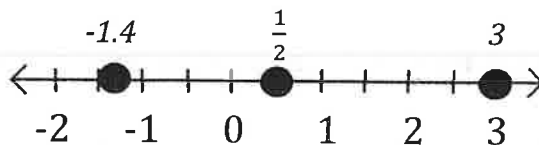


**Ordering Rational Numbers**

Order the numbers from least to greatest.

( $L \rightarrow R$  on the number line)

$$3, \frac{1}{2}, -1.4 = -1.4, \frac{1}{2}, 3$$



\* $-1.4$  is the farthest on the left so it is the lowest

**Practice!**

Find the absolute value of the numbers below.

1.  $|-2.3| = \text{\_\_\_\_\_\_}$

2.  $-|\frac{4}{5}| = \text{\_\_\_\_\_\_}$

3.  $|-0.63| = \text{\_\_\_\_\_\_}$

Compare each pair of rational numbers & integers using  $<$  or  $>$ .

1.  $-3 \text{ \_\_\_\_ } \frac{7}{12}$

2.  $\frac{7}{12} \text{ \_\_\_\_ } -3$

3.  $-5.3 \text{ \_\_\_\_ } -5.9$

4.  $|-2.3| \text{ \_\_\_\_ } 3$

5.  $-115 \text{ \_\_\_\_ } |85|$

4.  $|\frac{-4}{5}| \text{ \_\_\_\_ } \frac{1}{3}$

Order each number from greatest to least.

1)  $|-3.4|, \frac{5}{2}, -1.2$

2)  $342, 12, -142$

3)  $|-2|, 0, 4$

Order each number from least to greatest.

1)  $|\frac{-1}{2}|, 3, -1.6$

2)  $-452, 23, 622$

3)  $-33,321, -38,124, -42,123$

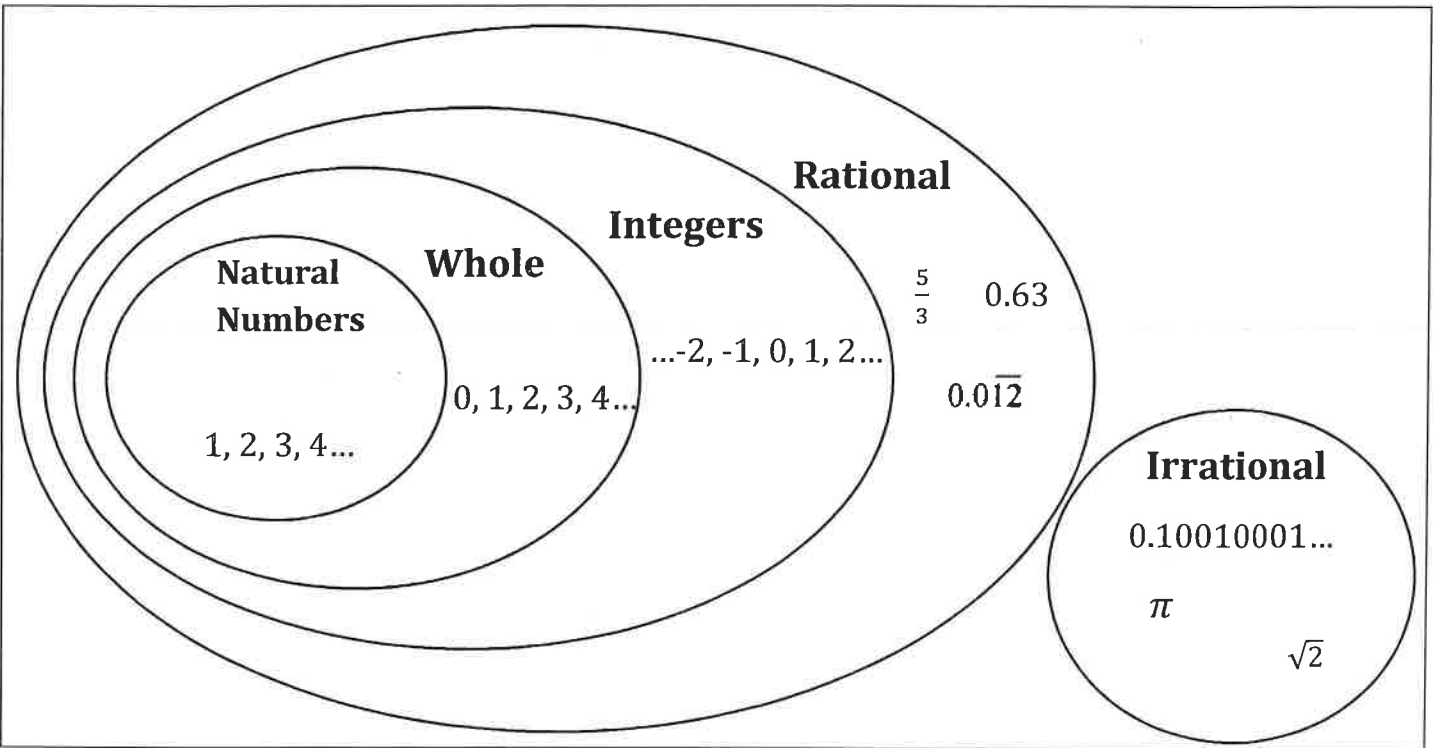


# Rational Numbers

Name: \_\_\_\_\_

Date: \_\_\_\_\_

**Daily Target:** I can identify and find a rational number using a number line.

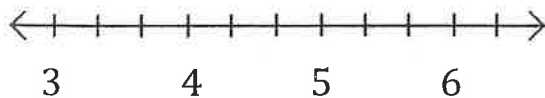


## Rational Numbers

Any \_\_\_\_\_ that can be expressed as the \_\_\_\_\_ or fraction of two integers. (Includes all \_\_\_\_\_ numbers, integers, fractions, and terminated and \_\_\_\_\_ decimals).

**Graph the number on the number lines below.**

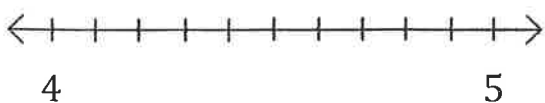
1. Using the number line find  $\frac{10}{3}$ .



4. Using the number line find 1.4.



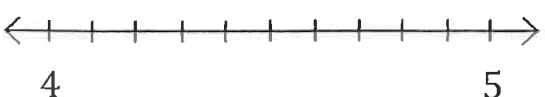
2. Using the number line find  $\frac{9}{2}$ .



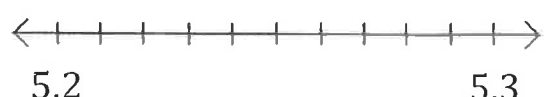
5. Using the number line find 3.75.



3. Using the number line find  $\frac{22}{5}$ .



6. Using the number line find 5.23.



# Comparing and Ordering Rational Numbers

Name \_\_\_\_\_

Fill in each blank with  $<$ ,  $>$ , or  $=$  to make each sentence true.

1.  $5.25$  \_\_\_\_\_  $6.3$

2.  $|4.3|$  \_\_\_\_\_  $2.3$

3.  $|-12|$  \_\_\_\_\_  $2$

4.  $|-3.4|$  \_\_\_\_\_  $5.4$

5.  $6.23$  \_\_\_\_\_  $6.4$

6.  $|-2|$  \_\_\_\_\_  $4$

Write the numbers in order from least to greatest.

7.  $|-0.15|$ ,  $8.4$ ,  $0.213$

8.  $0.44$ ,  $0.67$ ,  $1/2$ ,  $0.25$

9.  $0.2$ ,  $0.4$ ,  $|0.21|$ ,  $0.6$

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

10.  $-2.1$ ,  $0.5$ ,  $-0.5$ ,  $-3.4$

11.  $|-10|$ ,  $2$ ,  $-0.5$ ,  $\frac{1}{2}$

\_\_\_\_\_

\_\_\_\_\_

12.  $-12,312$  ;  $-13,752$  ;  $-11,281$

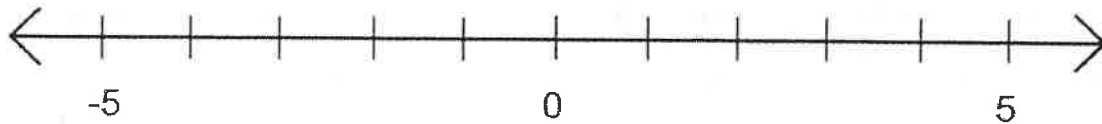
13. Which number in #12 is closest to the origin?

\_\_\_\_\_

\_\_\_\_\_

#14-15: Put the following numbers on the number lines given.

14.  $-5$ ,  $2$ ,  $-4.5$ ,  $3$ ,



15.  $-2.5$ ,  $-3$ ,  $1$ ,  $-4$

