

Tuesday
Sept. 1, 2015

WARM-UP

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Find the greatest common factor of each set of numbers.

1. $GCF(16,24)$

2. $GCF(12,20)$

3. $GCF(6,9)$

4. $GCF(40,60)$

Write the fraction in simplest form.

5. $\frac{16}{20}$

6. $\frac{8}{18}$

7. $\frac{27}{12}$

**WHAT IS THE
MEANING
OF LIFE?
WHATEVER YOU
WANT IT TO BE.**

(JAMES FREY)

Where do we see Integers in life?

**Topic:
Integers**

Lesson Essential Question

How is the relationship between positive and negative numbers represented in a mathematical sentence?

What are integers?

- Integers are **whole numbers** that describe opposite ideas in mathematics.
- Integers can either be **negative(-), positive(+)** or **zero**.
- The integer zero is neutral. It is neither positive nor negative, but is an integer.



How are they represented?

- Integers can be represented on a number line, which can help us understand the value of the integer.

Topic:
Integers

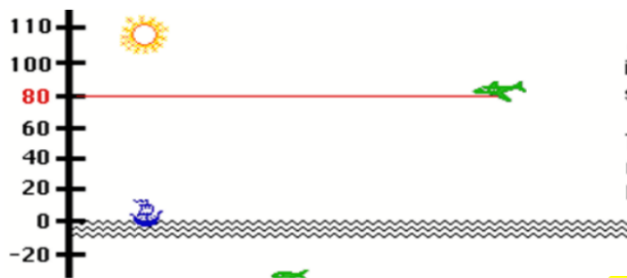
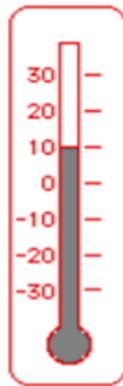
Lesson Essential Question

How is the relationship between positive and negative numbers represented in a mathematical sentence?

Positive Numbers

- are to the right of zero
- are valued greater than zero
- express ideas of up, a gain, or a profit
- The sign for a positive integer is (+), however the sign is not always needed.
- Meaning +3 is the same value as 3.

Examples



Positive Integers indicate height above sea level.

The airplane is **80** meters above sea level.

Topic:
Integers

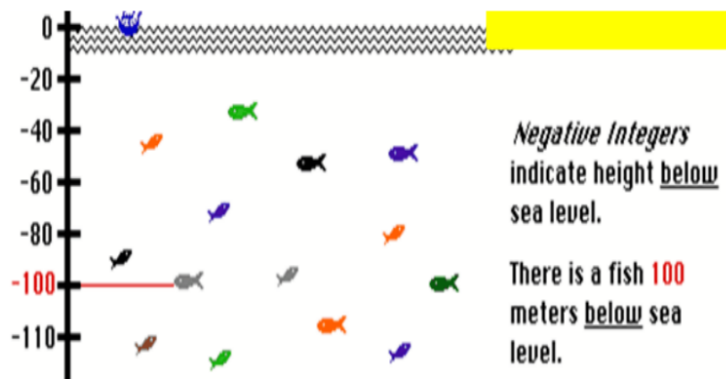
Lesson Essential Question

How is the relationship between positive and negative numbers represented in a mathematical sentence?

Negative Numbers

- are to the left of zero
- are valued less than zero
- express ideas of down or a lose
- The sign for a negative integer is (-). This sign is **always** needed.

Examples

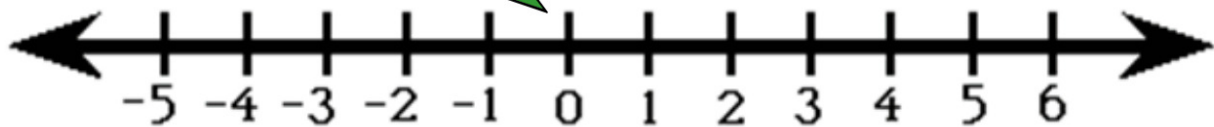


The Integer Line

Integers can be represented on an **INTEGER LINE**...

Negative Integers are the numbers $\{-1, -2, -3, -4, -5, \dots\}$

Zero is neither positive or negative



Negative integers
are valued less than zero, and
are always to the left of zero.

Positive integers
are valued more than zero, and
are always to the right of zero.

Integers... An Introduction

Integers are also used to indicate Golf Scores.

Allison Freud	-5
Mike Payola	-3
Randy Norfolk	-1
Kara Pumpernick	+2
Luke Greenwich	+3

The -5 indicates five strokes under par.

The +2 indicates two strokes over par.



Which score is less?
Who is winning?

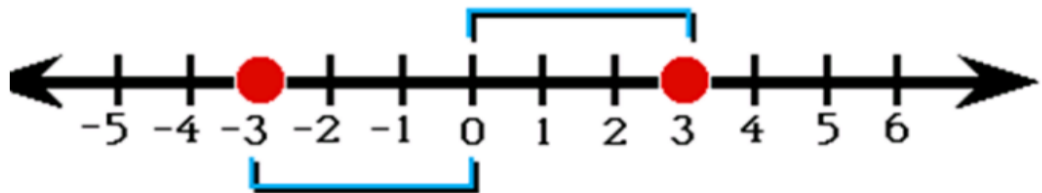
Topic:
Integers

Lesson Essential Question

How is the relationship between positive and negative numbers represented in a mathematical sentence?

Opposite Integers

The integers 3 and -3 are called *opposites*. They are the same distance away from 0.



Opposite integers always have a "net worth" of 0. This is called the ZERO PRINCIPAL.

Absolute Value

Opposite integers have the same "absolute value", meaning the distance from the points on a number line to zero is the same.

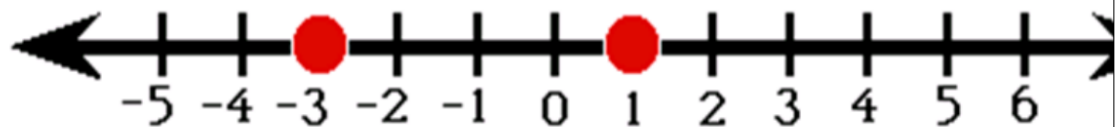
(absolute value is the POSITIVE value of the number)

Ordering
Integers

LEQ: How are negative and positive integers used outside of math class?

Comparing
Integers

The integer line can be used to compare integers ...



Let's look at two integers on the integer line:

We can see that -3 is to the left of 1

Therefore:

$$-3 < 1$$

an Integer

Each person gets a card with an integer. Order yourselves

Comparing Integers

Use your number line to help you compare each set of numbers.

(i.e. for the numbers 3 and -2 $3 > -2$ $-2 < 3$)

a) -6 7 b) 12 3

c) -5 -8 d) $|-7|$ -4

e) $|-3|$ $|-7|$ f) 13 $|-14|$

* g) $-|-8|$ $-|8|$

Exit Ticket:

1) List the following integers in order from least to greatest:

9, -3, $|4|$, $| -2|$, -10

2) Describe what an integer is.

3) What are the characteristics of zero?

