UNIT 1   Integers, Operations, Opposites and Absolute Value

Tues
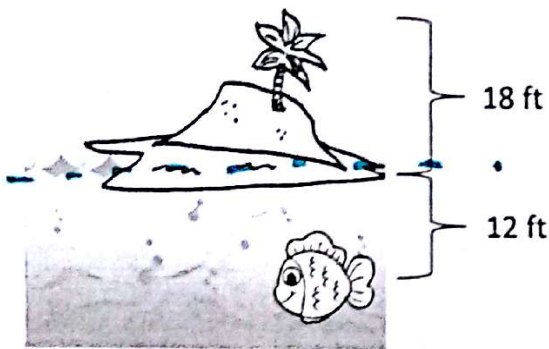Aug. 30   Day 1: Representing Real-World Integers
           obj: I will be able to represent integers based on
                real world scenarios.

An Exploration of Integers

Use the visual representations to complete the statements.

1

18 ft

12 ft

The tree's height is **18** feet **above** sea level.

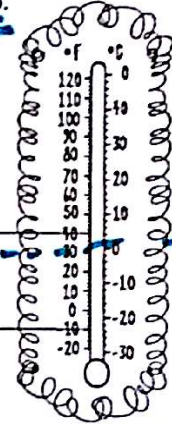The fish is swimming **12** feet **below** sea level.

2

The high temperature is **40** degrees Fahrenheit **above** zero.

The low temperature is **-10** degrees Fahrenheit **below** zero.

High temperature —

Low temperature —

3

-5 -4 -3 -2 -1 0 1 2 3 4 5
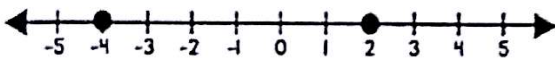
-4 is four spaces to the left of zero.

2 is two spaces to the right of zero.

4

How do the visual representations relate to your understanding of integers? Explain in 1-3 sentences.

- integer is a number that lies on either side of zero
- spaces from zero
- away from zero

Name _____

Real World Integers

Write a definition for <u>integer</u> based on your understanding of the term.

Integers are whole numbers and their opposites or positive and negative whole numbers

Rethinking the Meaning of Zero

As a number, zero is neither ___**negative**___ nor ___**positive**___. Previously, you may have learned that zero means "nothing." So, how can numbers exist that are less than zero?

In the real world, zero is used as a benchmark to compare or measure the quantitative properties of objects within a group or system.

Group or System	Meaning of Zero	Explanation
Elevation	At sea level	An object can be above sea level (+), below sea level (-), or at sea level (0).
Temperature	Freezing point of water (°C) Freezing point of salt water (°F)	A temperature can be above zero (+), below zero (-), or the freezing point (0).
Electric charge	No charge (net)	A proton has a positive charge (+) and a electron has a negative charge (-). When there are the same number of protons and electrons, the net charge is zero.
Finances	No money or no gains or losses. Also known as "balanced."	Earning money or making a profit (+), spending money or losing money (-), and no net profit or loss (0).
Golf score	Par	Failure to make the hole within a set number of shots (+), making the hole in less than the set number of shots (-), making the hole within the set number of shots (0 or par).
Games	No points	Gaining points (+), losing points (-), and no net gain or loss in points (0).

Write an integer that represents the number in each statement.

1. Badwater Basin, located in Death Valley, California, is 86 meters below sea level. **-86**	2. Catalina earned $100 from her lemonade stand. **100**	3. The low temperature was 15°F below zero. **-15**
4. Tomas answered a question wrong during the game and lost 250 points. **-250**	5. Joseph scored 3 over par during the first round of the golf tournament. **3**	6. A chlorine ion has 18 electrons and 17 protons. What is the chlorine ion's charge? **1**

Name _____ Class _____ Date _____