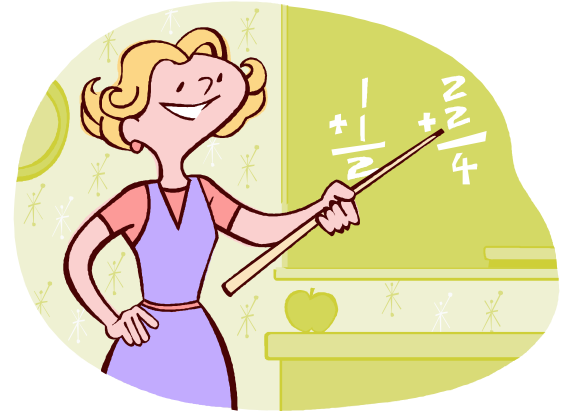# Algebra/Geometry Summer Institute

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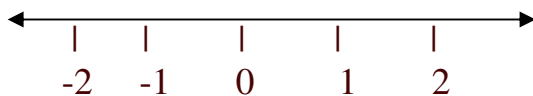
Adding and Subtracting Integers

Teaching Objective

The students will learn to add and subtract integers.

Instructional Activity

The teacher will introduce the lesson by reviewing comparing integers. The teacher will remind students that integers that name points on the number line to the left of zero are negative and numbers that name points to the right of zero are positive.

The teacher will then discuss rules for adding and subtracting integers by discussing what situations that represent a positive, negative, and zero amount where it depends on the sign:

- Sum of two positive integers is positive.
- The difference of two positive integers is positive.
- The sum of s number and its opposite is zero.
- The sum of a negative and zero is negative.
- The difference of two negative may be negative or positive.

The teacher will give examples for each situation:

- $6 + 8 = 14$
- $16 - 8 = 8$

- -5 + 5 = 0
- -6 + 0 = -6
- -6 – 2 = -8
- 6 - 2 = 4

Students will then complete two activities after the teacher feels each student has grasp the concepts of the lesson. This will be after several examples are mastered by all students.

Examples: (1) -6 + 3 = -6 (2)   -2 + -2 =   (3) -4 + 0 =   (4) -5 + 5 = (5) -7 – (-7)

The teacher will then pass out the days activities (see attachment # 1 and # 2).

Activity 1

The teacher will divide the student into teams. Each team will draw a large number line at least two feet in length (the teacher will assist students) with units from -10 to 10 on their poster paper. Students will be given a cup with 5 pennies and 4 game pieces.

Rules

1. Each team member puts his mark or game piece on zero at the start of the game.
2. Each player in turn puts 5 pennies in the cup, shake the cup and drop the coins on a flat surface.
3. For every penny showing "heads" the player moves his marker one unit to the right. For every penny showing "tails" will move one unit to the left.
4. The first player to make it to the 10 or -10 will win the game.
5. The game ends automatically without a winner if on one makes it to 10 or -10 with in 8 rounds.

After every team has completed its match, ask the students the following questions:

1. Which set of numbers is represented to the left on the number line?
2. What does a move to the right represent on the number line?
3. What does a move to the left represent on the number line?
4. If you make it at zero and you roll 3 heads, and 2 tails where will your marker land (1)?
5. What equation would you write for the roll of 3 heads and 2 tails?
   $$3 + (-2) =$$
6. What roll could be represented by $-1 + 4 = 3$? *1 tail and 4 heads*.

Activity 2

Use the rules to add or subtract the following integers.

1) $3 + 4 =$
2) $-3 + -4 =$
3) $-2 + 5 =$
4) $4 + (-6) =$
5) $-6 + 3 =$
6) $5 - 2 =$
7) $-4 - (-2) =$
8) $6 - (-4) =$
9) $-4 - 2 =$

Materials

Students will need notebooks paper and pencils.

The teacher will need overhead projector, cups, pennies, and posters.