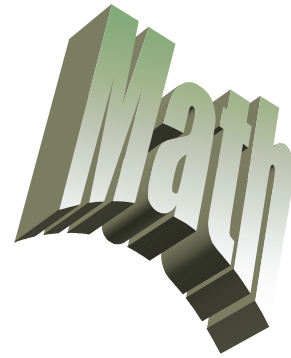


Algebra/Geometry Institute Summer 2005



Integers

Faculty Name: Derandel Allen

School: Leland School Park

Grade Level: 7th Grade, Integers

1. Teaching objective(s)

⇒ Recognize and write integers including opposites.

⇒ Given a list of integers, compare and rearrange the integers in numerical order.

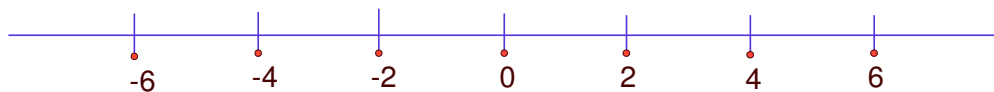
⇒ Adding integers

⇒ Define integer,

2. Instructional Activities

Lecture - Introduce the lesson by giving the definition of an integer.

- An integer is a set of whole numbers, their opposites, and zero.
 - For example, 3 and -3 are opposite of one another and are integers, 2, -4, -6, 9, are also integers
 - You can use a number line to show the arrangement of integers





- As you can see from the number line above, all negative numbers are smaller than positive numbers, and the farther to the left of zero, the smaller the number gets, therefore, -6 is smaller than -2.

⇒ Let's practice. Write the opposites of each of the following numbers and then list all of the numbers and their opposites in order from least to greatest

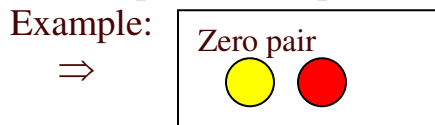
- 5, 9, -2, -1. So their opposites will be -5, -9, 2, 1.
- Arranged in order will be -9, -5, -2, 1, 2, 5, 9

- Give another example: arrange the following numbers in order from least to greatest
 - -10, 8, 0, -9, -5, 13, 2
 - ⇒ -10, -9, -5, 0, 2, 8, 13

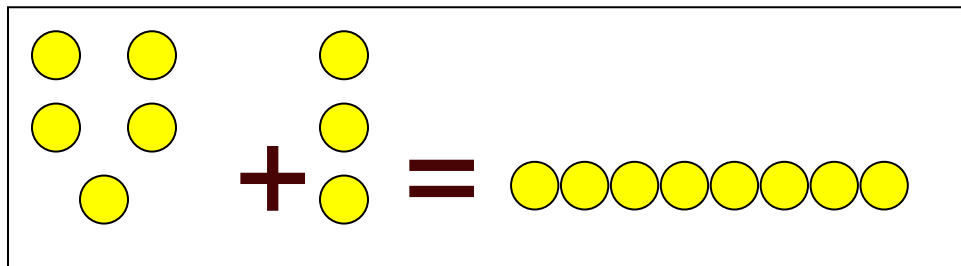
- Introduce colored counters to help assist with the concept of adding integers

Positive =  negative = 

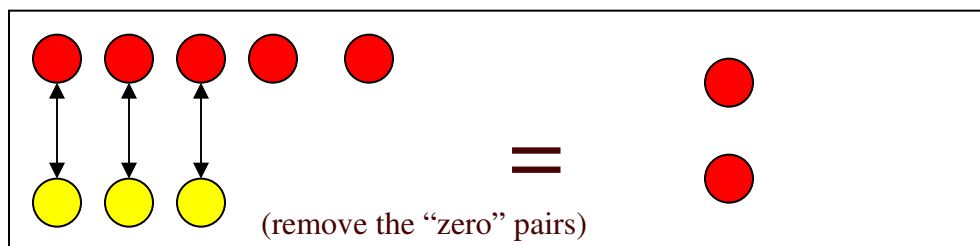
- Demonstrate to the students the process of using the colored counters and the meaning of “zero pair”
 - A “zero pair” is one positive and one negative counter.



- Perform example problems on the overhead allowing the students to see the correct procedure to answer. Sample problem: $5 + 3 = 8$



- Give another example to assist with the concept. Example, $-5 + 3$



- Give guided practice to the students by giving them ten (10) problems to work on at their desk. Provide assistance to students that need help. (see attachment #2, Integer Worksheet)
- Show students the correct answer to the practice problems and correct mistakes.

➤ Group work- students will complete integer activity

○ *Integer activity:*

Integer Activity

Divide the class into groups of three to four if possible (the number of groups and the number in each group will depend on the number of students in the class).

Each group will receive a deck of playing cards, a poster board, coloring pencils or markers and mid-sized sticky notes.

The objective of the activity is for the students to demonstrate their knowledge of adding integers as well as ordering integers on the number line.

The game is played by:

1. First shuffle the cards and each member of the group is dealt five cards.
2. Each member of the group will then give the final sum of the cards in their hand and write them down on the sticky notes.
3. Once they have written down the totals, reshuffle the cards again and repeat steps 1 and 2 for a total of three times.
4. Using the poster board arrange the totals in order from least to greatest on a number line. Use your coloring pencils or markers to design number line.

Point value

The point value of each card will be the face value of each card with the following rules:

Aces = 1
Jacks = 11
Queens = 12
Kings = 13



ALL red cards (hearts and diamonds) are negative numbers and all black cards (spades and clubs) are positive numbers

- Give rules for adding integers of like/unlike signs.

3. Materials and References

- Saxon Math 87 lesson 56, page 212
- Glencoe, McGraw Hill, Pre- Algebra, Geometry, activity masters. Page 40, 2001.
- Resource book: Hands-on Algebra: Ready-to-use games & activities for grades 7-12, pages 15-19, 2003.
- Chalkboard
- Chalk
- Two colored counters
- Computer
- Projector
- Power point software
- Textbooks
- Overhead Projector
- Screen
- Teacher made activity sheets
- Poster boards
- Coloring pencils and markers
- Playing cards (one deck per group)

4. Assessment

- Give 5 question practice quiz on adding of integers with the use of two colored counters.(See attachment #1)
- Students will pair up and each student will be given a problem to solve. The student will then demonstrate to his/her partner, the concept used to solve the problem and the solution to the problem. Teacher will monitor responses
- Students will present their number lines from the group after they have completed the integer activity.

Name _____ Date _____

Attachment #1

Integer Quiz

Directions: Use the two colored counters to assist you in finding the solution to each problem.

1. $-5 + 3$

2. $3 + -7$

3. $2 + -6$

4. $-3 + -5$

5. $-4 + 3$

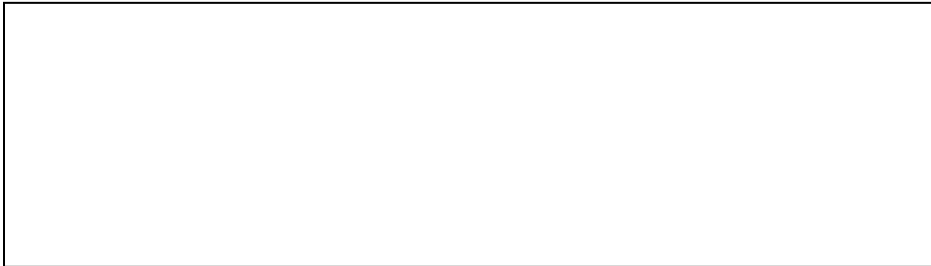
Name _____ Date _____

Attachment #2

Integer Worksheet
(Guided Practice)

Direction: Find the solution to the following problems by demonstrating the two colored counters method.

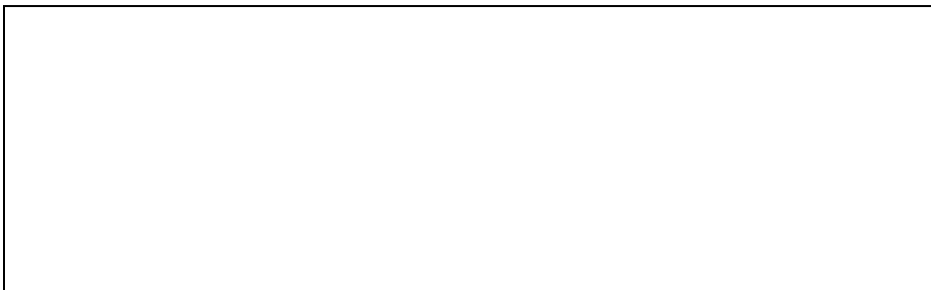
1. $-6 + 2$



2. $2 + 5$



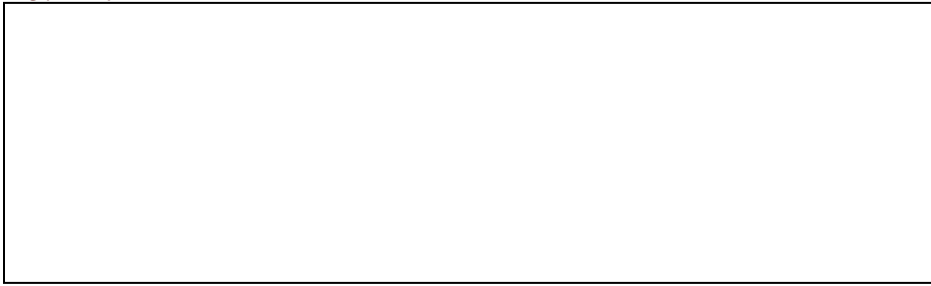
3. $-3 + -2$



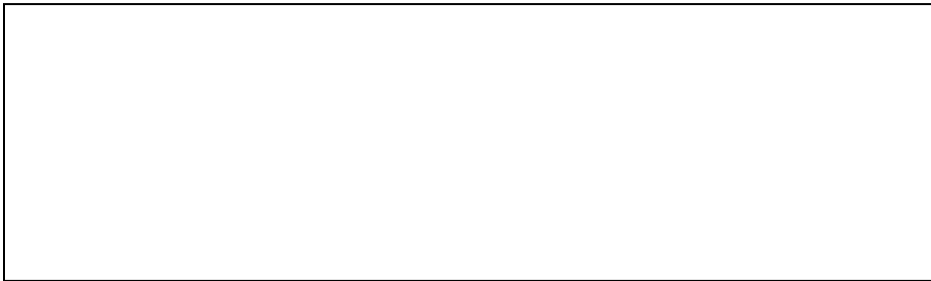
4. $5 + -3$



5. $-7 + 2$



6. $-4 + -2$



7. $-2 + 4$



8. $-5 + 8$



9. $9 + -6$



10. $7 + -2$

