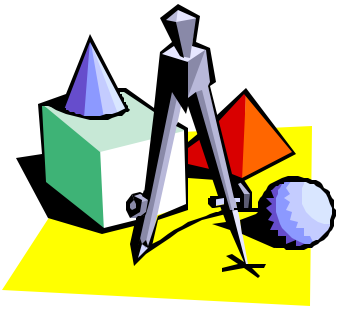
Algebra/Geometry Institute Summer 2003



Lesson Plan #1

Faculty Name: Polyneise Redd
School: Oakhurst Junior High
City: Clarksdale, MS
Grade Level: 8th Grade Pre-Algebra

1. Teaching Objective(s)

   - Students will be able to model integer addition and will begin to understand the connection between addition and subtraction.

2. Instructional Activities

   - The teacher will begin the lesson by using students to model or act out the following situation:

     One student has $25 but owes another student $22. How much is left once the debt is paid?

   - The teacher will review the definition of integers and distribute to each student a packet of counters containing 10 yellow and 10 red counters.

   - The teacher will ask the students which color counter represents negative and which color represents positive.

   - The teacher will write and explain three examples on the overhead projector.

     Example 1:
     2 + 5

   - The teacher will ask the students to explain in words what the problem means and wait for responses.

   - The teacher will reply that the addition sentence can also mean to **combine** a set of two positive counters with a set of three positive counters. The teacher will model the addition sentence.

***Ò represents the positive counters and Ó represents the negative counters.**

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Ò ÒÒ

Therefore, 2 + 5 = 7.

Example 2:
3 + (¯6)

- The teacher will ask the students what color counters and how many represent positive 3 and (¯6)?

- The teacher will now ask the students to model example 2.

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- The teacher will explain to students the procedure for solving example 2. "Pair a positive counter with a negative counter. This pair is called a **zero pair**. Remove all of the zero pairs. The remaining counters will be your answer."

The following example shows zero pairs being paired together and taken away.

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Ò Ó	Ó
Ò Ó	Ó

Therefore, 3 + (¯6) = ¯3

Example 3:
¯4 + (¯6)

- The teacher will now ask students to model the problem above with the result. The teacher will also remind students that when the counters are the same color, then you must combine the two sets of numbers.

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Therefore, ¯4 + (¯6) = ¯10

- The teacher will list the following problems on the overhead projector and monitor students as they model each example.

1. 6 + 2	5. 7 + 3	9. -5 + (-4)
2. -4 + 7	6. -6 + -4	10. 8 + (-10)
3. 3 + (-5)	7. 2 + (-6)	11. (-7) + (-2)
4. -1 + (-8)	8. 7 + (-7)	12. (-4) + 8

- The teacher will close the lesson by asking students to write a rule for adding integers. The teacher will ask some students to share their answers.

3. Materials and Resources

- Textbook: Merrill Pre-Algebra/A Transition to Algebra. Glencoe: Macmillan/McGraw-Hill, Publishing Company (1995). Pages 59 – 60
- Counters
- Pencil
- Paper
- Overhead Projector
- Markers

4. Assessment

- Teacher Observation
- Oral and written response

5. Enrichment (Optional)

The teacher will distribute four index cards to each student. The students will write an addition expression on each card. (Example: Card 1 should contain two positive integer, Card 2 should contain two negative integers, Card 3 should contain a positive integer first then a negative integer, and Card 4 should contain a negative integer first then a positive integer). Then each student will exchange cards with another student. The objective here is for each student to draw a model illustrating the four addition expressions with its result.