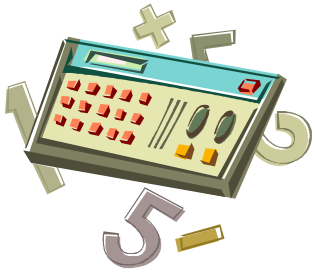
Algebra/Geometry Institute Summer 2004



Lesson Plan Two

Faculty Name: Avis Williams
School: Shelby Middle School
Shelby, MS 38762
Grade Level: 6

1 Teaching objective(s)

The students will use models to solve equations.

2 Instructional Activities

- Students will work with a partner.
- Solve the equation x + 3 = 5 using models.
- Use a cup to represent the unknown value, x. Place 1 cup and 3 yellow counters on the left side of an equation mat. Place 5 yellow counters on the right side of the mat.
- The goal is to determine what's in the cup. To do so, get the cup by itself on one side of the mat. Then the counters on the other side will be the value of the cup, or x.
- To find the value of x, remove 3 counters from the left side and 3 counters from the right side. You need to remove the same amount from both sides to maintain the balance.
- The cup is by itself on one side of the mat. There are two counters on the other side. Find the solution to the problem.
- Solve the equation x – 8 = 10 using models.
- Use a cup to represent the unknown value, x. Place 1 cup and 8 red counters on the left side of an equation mat. Place 10 yellow counters on the right side of the mat.
- The goal is to determine what's in the cup. To do so, get the cup by itself on one side of the mat. Then the counters on the other side will be the value of the cup, or x.
- To find the value of x, add 8 yellow counters to the left side and 8 yellow counters to the right side. You need to add the same amount to both sides to maintain the balance. Remove the zero pairs.
- The cup is by itself on one side of the mat. There are 18 counters on the other side. Find the solution.
- Solve the equation 2x = -10 using models.
- Place two cups on the left side of an equation mat. Place 10 red counters on the right side of the mat.
- Each cup must contain the same number of counters. Arrange the counters into two equal groups to correspond to the two cups. Find the solution.

- Students will work problems 1 through 10. **(See Attachment)**

3 Materials and Resources

cups
counters
equation mats

Glencoe Mathematics Applications and Connections Course 2 p.226

4 Assessment

Observation of students' work.
Have students to watch for the positive and negative signs. The yellow counters means positive and the red counters mean negative. Remind students that when the signs are the same to add and when they are different to subtract. In division and multiplication, two positive signs equal positive, two negative signs equal positive, and a positive and negative sign equal negative.

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Solve each equation using models.

1. $x + 1 = 6$
2. $x + 2 = 5$
3. $x - 7 = 12$
4. $x - 10 = 25$
5. $3c = 21$
6. $-5m = 35$
7. $34 = -2g$
8. $8n = 16$
9. $x - 4 = 8$
10. $x + 9 = 10$