Algebra/Geometry Institute Summer 2003

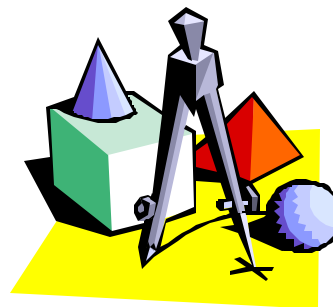Lesson plan 2
Faculty Name: Ruth Dotson
School: Broad Street High School
City: Shelby, MS
Grade Level: 8

1   Teaching objective(s)
        Compare, order, and locate real numbers on a number line.

2   Instructional Activities
        The teacher will: Review the meaning of the symbols > and <. Remind
        students that > is the symbol for is greater than, and < is the symbol for is
        less than. Use an overhead grid to show the relationship of fractions that are
        commonly used. Show halves, fourths, fifths, and tenths in decimal,
        fraction, and percent form on the overhead so students can see their
        relationships, and be able to compare them.

   The teacher will show $\frac{1}{2}$ by circling 50 of the 100 squares, and writing it in

   decimal, and percent form. Show $\frac{1}{4}$ by circling 25 of the 100 squares, and

   writing it in decimal and percent form. Show $\frac{1}{5}$ by circling 20 of 100

   squares, and writing it in decimal and percent form. Show $\frac{1}{10}$ by circling

   10 of 100 squares, and writing it in decimal and percent form. The teacher
   will show that the fraction with the most grids shaded is the largest
   fraction.

   Explain that real numbers are in order from least to greatest on the number
   line. Compare several problems on the board.
   1. $-12 < 0$ because all negative numbers are less than zero and less than
        the positive numbers.
   2. $-25 > -30$ because -25 is closer to zero than -30 is.

3. $\frac{3}{4} > 0.7$ because $\frac{3}{4}$ written in decimal form is 0.75. Seventy-five hundredths is larger than seventh tenths. Show students how to convert fractions to decimals.

4. $1\frac{1}{3} < 2\frac{1}{4}$ because the number 1 is less than 2. Students are reminded that if they are comparing mixed numbers, to compare the number in front of the fraction first.

5. $\frac{2}{5} > \frac{1}{8}$ because $\frac{2}{5} = \frac{16}{40}$, and $\frac{1}{8} = \frac{5}{40}$. Students are reminded that in order to compare two fractions, they should have common denominators.

Supply students with a string, and numbers on index cards, and allow them to play "Find the Home for me game". Students will display a number line in the classroom and place numbers in their best location on the number line.

Find the Home for "Me"

I am a number. Please put "me" in my home on the number line.

Directions: Make a number line and plot each number in its best location on the number line.

1. $\frac{3}{4}$ 2. $\frac{0}{7}$ 3. $\frac{-5}{6}$ 5. $\frac{10-4}{3}$ 6. $\frac{4}{5}$ 7. $\frac{1}{3}$

8. -5 9. 0.75   10. 0.333…   11. 5.4   12. -0.5

13. -2^3 14. 3^2 15. $\frac{1}{8}$ 16. 8   17. 0.12   18. 0.122…

19. $\frac{22}{7}$ 20. 2.454

3   Materials and Resources

Merrill Math Textbook, Merrill Publishing Co.
Overhead Projector
String
Index cards
Paper

Pencil

4   Assessment

Student demonstration
Oral response
Class work