Algebra/Geometry Institute Summer 2004
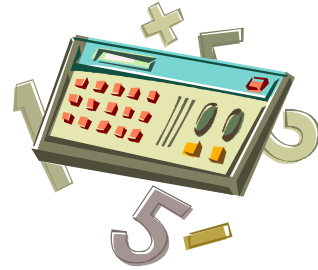
Lesson Plan One

Faculty Name: Sandra Kay Wilson
School: East Side High School
City: Cleveland, MS
Grade Level: 9th

1   Teaching objective(s):
     The student will find probability of an event.

2   Instructional Activities
     Students will enter room and begin answering the bell ringer on board.
     Bell Ringer: Without using a calculator, write the decimal and percent
                   equivalences of the following fractions. (10 minutes)

1. $\frac{1}{3}$	6. $\frac{1}{5}$
2. $\frac{1}{2}$	7. $\frac{3}{5}$
3. $\frac{3}{4}$	8. $\frac{1}{8}$
4. $\frac{1}{6}$	9. $\frac{1}{4}$
5. $\frac{2}{3}$	10. $\frac{1}{7}$

     After going over students' answers, point or refer to objective written
     on the board.

     Announce to class that we will view a brief video pertaining to probability.

     Instruct students to pay close attention to the video's content as far as defining
         probability and giving real-world applications of probability. (10-12 minutes)

     Referring to the video, the teacher may want to initiate a class discussion where
         students share their definition of probability and tell in what areas and how
         probability is used. From here we can derive the formal definition of

     probability: $\dfrac{number\ of\ favorable\ outcomes}{number\ of\ possible\ outcomes}$

     Define sample space: the set of all possible outcomes.
                 event: the something(favorable outcome) that is being measured
                 complement of an event: all possible outcomes not in the event.

     Emphasize symbolism P(E) and correct reading of that symbolism.

Connecting probability to fractions, the teacher gives several practice
exercises.

Examples: A driver arrives at the traffic lights numerous times during the
week. She encounters 16 green lights, 5 yellow lights, and 9 red
lights.   Find

P(yellow)
P(red)
P(green)
P(not yellow)

Question: Can you come up with an event that has the same
probability as P(not yellow)?

Activity One: "Go Class! It's Your Birthday!"

Goal: Find the probability of a student being born in a particular month
of the year.

Data Collection: Calling out the months of the year, have students to raise
their hands when their birth month is called.

Procedure 1:
Expressing your answers in fractions, decimals, and percents, find
P(Jan. Birthdays)
P(Feb. Birthdays)
P(March Birthdays)
P(April Birthdays)
P(May Birthdays)
P(June Birthdays)
P(July Birthdays)
P(Aug. Birthdays)
P(Sept. Birthdays)
P(Oct. Birthdays)
P(Nov. Birthdays)
P(Dec. Birthdays)

.

Procedure 2:   Students will come together as a whole group and discuss their findings.

Question: Will these findings be exact in every situation?

Procedure 3:   Give students data from collected in two of your other classes or of
               A co-worker's classes and allow them to find the probable births in
               two other classes . Students are to compare their class's probable births
               to those found in Class 2 and then to those found in Class 3.

Procedure 4:   Each group will construct a bar graph showing the number of births
               in each month for each individual class(i.e. each month should have
               a bar shown for each class).

Procedure 5:   Discuss the question posed in Procedure 2 again with class and allow
               students to answer by discussing and showing their findings using the bar
               graphs constructed.

3   Materials and Resources:

Poster board/ Paper for making bar graphs
Prentice Hall Textbook, pages 36-39
Chalkboard/ Overhead
Video(Cord Mathematics—Tech Prep Video)
TV/VCR
Coloring Pencils
Calculator(optional)

4   Assessment

Oral Answers
Teacher Observation

Quiz (5 questions) given the following day
 Find   P(nickels)
        P(dimes)
        P(quarters)
        P(pennies)
        P(half-dollars)
If there are 12 nickels, 10 pennies, 9 quarters, and 13 dimes in a jar.
Express each answer as a fraction, decimal, and percent.