

Algebra/Geometry Institute Summer 2006



Lesson Plan 1: Collecting and Organizing Data

Faculty Name: Erika Downing

School: Oakhurst Middle School Clarksdale, MS

Grade Level: 6th

Teaching Objective(s)

Collect, organize, and summarize data and use simple probability.

A. Gather, organize, and display data in an appropriate chart or graph.

Instructional Activities

- The teacher will say, "Today we are going to collect our own data and create a graph using that information." The teacher will review parts of a graph, types of graphs, dependent and independent variables.
- The teacher will ask the students to raise their hands if they know the words to "Happy Birthday." The class will sing "Happy Birthday." The teacher will ask, "How long did it take to sing the song?" The students will discuss how long it took to sing the song. The students will discuss how many times the song can be sung in one minute with all the words said clearly.
- The student will be placed into groups of four. Each student will be assigned a role – counter, time keeper, recorder, or singer.
- The teacher will pass out the "Happy Birthday" activity sheet to the student and explain the directions along with each student's role.
 - Time Keeper – calls out the time every ten seconds within a two minute time frame
 - Counter – counts the number of times the song is sung and calls out the count every ten seconds
 - Recorder – records the count after each ten seconds and keeps track of the cumulative number of times the song is sung
 - Singer – sings "Happy Birthday" in a reasonable speed so that all words are understood.
- After data has been collected and recorded, the students will create a graph recording the cumulative times the song was sung over two minutes on poster board or butcher paper.
- The students will then present their findings to the class. The teacher will ask the students:

- What are the dependent and independent variables in the graph?
- What were the most difficult and least difficult aspects of collecting data?
- How might the data have been different if you were singing a different song?
- Why was it important to use a stopwatch during the experiment instead of just counting the seconds by yourself?

Material and Resources

- A copy of the “Happy Birthday” activity sheet for each student or group
- A stopwatch or clock for each group
- Poster board or butcher paper
- Markers, crayons, paint, or colored pencils

Assessment

- The teacher will observe to see that the students are correctly recording their data and that the number of times the song was sung is increasing with the time.

Adapted from Navigating through Algebra in Grades 6 – 8 (NCTM p. 21 – 24)

HAPPY BIRTHDAY!

Name(s) _____

How many times can you sing "Happy Birthday" in two minutes?

For this experiment to work correctly, the words to "Happy Birthday" must be sung correctly and clearly:

*Happy birthday to you
Happy birthday to you
Happy birthday dear friend.
Happy birthday to you.*

Each person in the group needs a role. Write the name of each student by their role.

Time Keeper – calls out the time every ten seconds within a two minute time frame

Counter – counts the amount of times the song is sung and calls out the count every ten seconds

Recorder – records the count after each ten seconds and keeps track of the cumulative number of times the song is sung

Singer – sings "Happy Birthday" in a reasonable speed so that all words are understood.

Time (Seconds)	Number of Songs during Interval	Cumulative Number of Songs
0		
10		
20		
30		
40		
50		
60		
70		
80		
90		
100		
110		
120		

After all the data has been collected, use poster board or butcher paper to make a graph illustrating your findings.