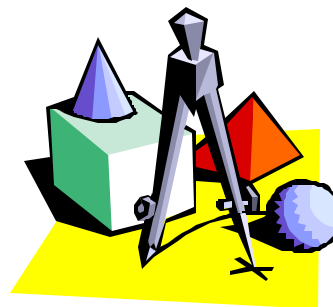


Algebra/Geometry Institute Summer 2003

Lesson 1 **Count on the letters**

Faculty Name: Candace Jackson Gray
Grade Level: 6-9 (~90minute block)



Teaching objective(s):

- Apply the concepts of ratio, proportion and percent to solve real-life problems.
- Interpret, organize, and make predictions about a variety of data using concepts of probability and statistics

Instructional Activities:

Pre-requisite skills needed for students are construction of a variety of charts: frequency table, pie and bar charts. Elementary readiness in data collection and analysis is helpful, although not necessary. Teacher needs to research through microfiche or library for various newspapers from various centuries. Lesson may be integrated into a reading or history lesson.

Students:

- **count** the letters of the alphabet within an article of a certain square area measured: 1×1 , 2×2 ... 10×10 . Use front pages of 1750, 1800, 1850, 1900, 1950 and current year newspaper supplied by teacher
- record frequencies upon the chart (see attachment 1) and calculate the percentage.
- **build** a circle (pie) graph from the frequency chart for display comparison and discussion.
- **construct** a bar graph using technology: graphing calculator/computers, graph paper, or measurement tools, to show a comparison with data frequency totals from all years.
- will **display** charts using a wall, outside or inside the classroom recorded from the frequency chart.
- with their groups, **present** the 'century word wall'. Comparisons can be shared in discussion, as well as tidbits from reading. For instance, look for exponential growth patterns in letters versus areas, as well as patterns in growth and time.
- **write** in journals: reflections of group activity and task management, conjectures about the time periods that may include readings of events, as well as differences in language AND similarities.

Extension: some students may observe that there are frequencies in the words in larger areas of the cut newspaper. Instructor may suggest a **word frequency chart**. A **timeline** may be constructed from the charts for a museum model outside the classroom depending upon quality of work.

Materials and Resources

- Copies of period newspaper provided by instructor on 11 x 17 papers.
- Poster board and butcher block paper of various colors.
- Measuring tools: rulers, compasses, string, template letters for posters
- Paints, markers, colored pencils. Frequency Chart. Math journals.

Assessment: Rubrics attached.

<i>Letter</i>	<i>Frequency</i>	<i>Percent</i>
A		
B		
C		
D		
E		
F		
G		
H		
I		
J		
K		
L		
M		
N		
O		
P		
Q		
R		
S		
T		
U		
V		
W		
X		
Y		
Z		

Total number of letters: _____

Newspaper date: _____

Student(s) names: _____

Frequency Chart



Rubric for museum graphs

Student(s) names:

Computation correctness.

4 3 2 1 0

Graphs are pleasing and understandable to the viewer.

4 3 2 1 0

All graphs are represented, labeled, neat and precise.

4 3 2 1 0

Oral explanation reflects true analysis of data.

4 3 2 1 0

Work load well distributed

4 3 2 1 0

Total Score _____

Data Chart Rubric

	Outstanding	Satisfactory	Needs Improvement	Self Evaluation	Teacher Evaluation
Main Idea	Chart has a clear title which gives specific information from investigation.	Chart has a title that gives some of the numbers recorded from the investigation.	Chart is missing a title and many of the numbers recorded from the investigation.		
Details from Investigation	Chart includes all frequencies from investigation and has clear labels, phrases, or sentence descriptions.	Chart includes most details from investigation and has clear labels or phrases.	Chart includes a few details from investigation using labels or phrases.		
Effectiveness of Chart	Chart shows others a clear and thorough insightfulness.	Chart gives others a clear understanding.	Chart gives others a general understanding...		
Quality of Chart	Chart includes illustrations and labels. Content of chart is edited for spelling and math has no errors.	Chart includes illustrations and labels. Content of chart is edited for spelling and math has less than 3 errors.	Chart includes illustrations and labels. Content of chart is not edited for spelling and math, more than 3 errors.		
			Total Score:		

Handwriting Score: O / S / N

Overall Appearance: O / S / N

Comments: