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Final Project
Money Management Lesson
Graphing using lists on a calculator and Central Tendency**

Money Management Unit

Final Lesson: Two Day Lesson

Objectives:

- To finalize class project on Money Management.
- To graph points on a coordinate grid.
- To determine the correct scale to use when graphing.
- To use technology to graph points from lists.
- To determine patterns of graphs visually.
- To determine measures of central tendency.

CSO's:

For Algebra I:

A1.2.5 analyze a given set of data for the existence of a pattern numerically, algebraically and graphically; determine the domain and range; and determine if the relation is a function.

A1.2.18 collect, organize, interpret data and predict outcomes using the mean, mode, median, and range.

For Applied Math I:

AM1.2.13 collect, organize, interpret data, and predict outcomes using the mean, mode, median, range and standard deviation.

For Applied Math II:

AM2.2.1 analyze a given set of data for the existence of a pattern numerically, algebraically and graphically; determine the domain and range; and determine if the relation is a function.

Performance Descriptors:

- **Distinguished:** The student demonstrates exceptional performance with distinctive application of the knowledge and skills that exceed Applied II standards. The student creates models to solve the problems involving graphing and central tendency. Data is exceptionally well organized with added charts and graphs on paper and calculator. The student provided further interpretations of the material. The student is able to recognize and support areas of change to improve their project outcomes. With logical reasoning and six examples, the students will be able to explain why certain similarities and differences occur between their graph and another group. Students can reason why measures of central tendencies compare and contrast in the manner that they do.
- **Above Mastery:** The student demonstrates competent and proficient performance and shows a thorough and effective application of the knowledge and skills that exceed Applied II standards. The student was able to graph the data on both their graph paper and calculator. The students were able to identify patterns and provide appropriate generalizations. The student provides some interpretations of the material and can recognize areas in which that could have improved their project. The students were able to provide examples to explain changes in their graphs. The student was able to provide explanations why their graph was different than another groups. Students were able to define differences in central tendencies.
- **Mastery:** The student demonstrates knowledge and skills that are consistent and accurate with the standards of Applied II. The student is able to plot points and graph correctly. The

student is able to find patterns in the graphs. The student can use the calculator to graph lists of information. The student's data is complete. The student can demonstrate and perform operations of central tendency.

- **Partial Mastery:** The student demonstrates basic but inconsistent performance of fundamental knowledge and skills characterized by errors and omissions in Applied II. Work is characterized by errors and has not met the standard. Performance on graphing and central tendency needs further development. The student inconsistently graphed by placing points in incorrect marks on the Cartesian Plane.
- **Novice:** The student demonstrates need for development of fundamental knowledge and skills, which shows an incomplete performance in Applied II. Performance needs considerable improvement. The student completed most assignments and had more than five mistakes. The data write-ups were hard to understand and showed little organization. The graphs were accompanied by statements of facts with no generalization or application. The student could not determine how their decisions effected the changes in their graphs. The student could not compare and contrast the measures of central tendency.

Materials:

- Money Management Monthly Budgets
- TI-83 Calculators
- Graph Paper
- Money Management Final Report Papers

Adaptations:

- Choose mixed ability groups rather than students picking groups
- Connect calculator to the overhead projector
- Have an overhead replica of the calculator
- Have a poster on the wall that replicates the calculator
- Bold the names of the buttons of the calculator on the instruction sheet
- Have a visual poster in the room of mean, median, and mode

Pre-Requisites for the Lesson:

- Balancing a checkbook
- Mean, Mode, and Median
- Financial lessons such as interest, credit, etc.
- Money management advice

Websites for the Money Management Unit:

Website Name	Uses	Favorite Components
www.moneyinstructor.com	Instruction resources on basic money, credit cards, balancing checkbooks, and personal finance	Materials are on multiple levels (low and high), Worksheets, printable checkbook templates, word problems, budget plans, and financial planning advice
www.practicalmoneyskills.com	14 money management topics for high school age students including: credit, budgeting, car buying, and consumer awareness,	Operated by VISA, offers free workbooks for students and manuals for teachers, contains all of the money management concepts, grade level appropriate activities, matches state content standards, interactive calculators and videos online
www.fleetkids.com	Real-world application and role playing lessons	Lessons on running a business, online activities

Money Management Final Report

1. Make a list of the final balances from each of the 12 months that you worked during on this unit.
Ex: January-\$12,000; February-\$8,000;.....
2. Graph the points from this list on graph paper to form a line.
The months will be plotted on the x-axis. Use the numbers 1-12 to represent the months. Allow the number 1 to represent January and 2 to represent February and so on.
3. Describe the graph that you see.
4. What months did you have an increase in your final balance? What months did you have a decrease in your final balance? Were there any months where the balance did not change month to month?
5. Based on your group's own money management project, why did some months have larger values? Give at least two examples of decisions that you made that influenced the larger balances.
6. Based on your group's own money management project, Why did some months have smaller values? Give at least two examples of decisions that you made that influenced the smaller balances.
7. Reflecting on the decisions you made, what changes would you make?

Graphing the values using a calculator.

To enter values into the calculator.

- A. Turn calculator on.
- B. Hit **STAT**. (Beside the blue arrow keys.)
- C. Hit **Enter** to Edit lists.
- D. Place this list of final balances in L1 and L2 in the calculator.
L1 will contain the numbers 1-12 which correspond with the months of the year.
L2 will contain the final balances for each month.
(Be careful to place each month across from the correct final balance.)
- E. After checking your points, Hit **2nd** (Yellow Button) **MODE** for the **QUIT** function. This should take you to a blank screen. If not, hit the **clear** button below the blue keys.
- F. Now Hit "**2nd**" (Yellow button) **Y=** which will take you to **STAT PLOT**.
- G. Enter on #1 Plot 1
- H. Make sure that the On is highlighted black. If not, hit enter on top of it to highlight.
- I. Cursor down with the arrows to the second type of graph on your calculator. It should be a connected line graph.
- J. Check the following..... Xlist is L1 and Ylist is L2.
- K. The mark that we will use is the box. Hit enter on the box to highlight and select this feature.
- L. Hit **2nd MODE** to **QUIT**.
- M. Hit **Y=** (Top row). Check to see that there is nothing in any of the Y= lines.
Check to see that plot one is highlighted black.
- N. Hit **GRAPH** (top row).

8. Can you see your graph?

9. Let's look at the numbers that we typed in. What is the range of values that we have for our data?
 Write down the range of values for L1 (x-values) _____
 Write down the range of values for L2 (y-values) _____
10. Let's check the window that we see. Hit **WINDOW** (top row).
11. We are going to change our window.
 Write down exactly what your window says on your paper.
11. Let's change the window to match our data.
 X min 1 X max 12 Xscl = 1
 Y min 0 Y max (Depends on your data, take the largest final balance and add 100.) Yscl = 500
12. Can you see your data now? If *not, stop* and ask for the teacher to help.
13. Explain your graph. Does this look different from the graph that you created on the graph paper? Why or why not?
14. Compare this graph with that of another group. How do your graphs compare with the other groups? What's the same about the graphs?
15. Contrast your graph with that same group. How did your graphs contrast with the other group? What is different about your graphs?

Determining measures of central tendency for our data.

From the lists, you will determine the mean, mode, and median for the cash values of each month.

16. Explain how to find the mean of the data, then determine the mean of the data.
17. Explain how to find the mode of the data, then determine the mode of the data.
18. Explain how to find the median of the data, then determine the median of the data.

Using the calculator to determine measures of central tendency.

Follow the preceding steps to determine the central tendencies of the data you have placed in L1 and L2. The calculator will solve the following: mean, median, range, and amount of values entered.

19. Hit **STAT** on your calculator.
20. Use the arrow keys to highlight the word **CALC**.
21. You want to select **1-Var Stats**. Therefore, you can hit **Enter** or the number **1**.
22. On the main screen, you will see **1-Var Stats**. Since we are using the cash values of each month, we will use the values in L2.
23. Hit **2nd** and then the number **2**. This will make L2 appear after **1-Var Stats** on your screen.
24. Hit **ENTER**.

Using the following key find the mean, median, range, and amount of values entered.

\bar{X} = mean

n = amount of values entered

$\min X$ = minimum value in list $\max X$ = maximum value in list

Med = median value

25. Write the mean _____.

26. Write the median _____.

27. Write the amount of values entered _____.

28. Write the range of the values _____.

29. Do any of these values differ from the values that you found before using the Stat feature of your calculator? Why or why not?

Follow-up questions about your group project in general.

30. What advice would you give people about budgeting their money?

31. When buying a car what did you learn? Would it be wise to buy a car that is a little above your budget? What amount of down payment if any would you place on a car, write this as a percentage of the total price of the car? Such as 2% or 75% of the total price.

32. According to your monthly balances, which month would be best for you to have taken a trip to Disney World that cost \$750? Explain your reasoning.

When finished turn in your group project including all materials in which you have collected throughout the Money Management unit.