Lesson Plan

Text: Financial Algebra

Volume: __1_____   **Chapter:** __5_____

Unit number __3__   **Title of unit:** Graph Frequency Distributions

Developed by: Jacqueline Brewster   **jbrewster@psd1.org**

Date: 6/26/2012

This lesson is a classroom lesson that will take one day of instruction. Topics covered will be graphing frequency and the graphs that go with this unit.

LESSON PLAN

TEACHER: Teacher Prep/ Lesson Plan

- **Lesson Objectives:**
  - **Students will be able to:**
    - **Create a frequency distribution from a set of data**
    - **Use box-and-whisker plots and stem-and-leaf plots to display information**
    - **Use linear regression to negotiate the purchase or sale of a used car.**

- **List of prerequisite skills needed: Previous use of scatterplots.**

- **Vocabulary:**

Frequency distribution	Frequency	Stem-and-leaf plot
Box-and-whisker plot	Boxplot	Modified boxplot

- **State Standards addressed:** *(You may use your District's Power Standards if applicable, Highlight "Green" Standards)*
  Math:
  > S-ID1
  > S-ID2
  > S-ID3
  > S-ID4

  Reading:
  1.2.1- Apply reference skills to define, clarify, and refine word meanings.
  1.2.2- Apply vocabulary strategies in grade level text.
  Writing:
  2.2 — Writes for different purposes.
  Leadership:
  2.D.1 Solve different kinds of non-familiar problems in both conventional and innovative ways

- **Teacher Preparation:** Read Financial Algebra text pages 231-237, prepare examples for class practice of formulas, determine assigned practice problems set, and review quizzes FA 5-3A and FA 5-3B (Applied Math Conference 2012) for assessment at end. Check out these websites:

http://ellerbruch.nmu.edu/cs255/jnord/boxplot.html,
http://www.internet4classrooms.com/, and
http://www.internet4classrooms.com/skill_builders/box_and_whisker_math_eighth_8th_grade.htm

- **Content Delivery:** Content will be delivered as a whole class discussion, teacher presentation on information, class practice of graphs, and individual practice of graphs and concepts.

- **Instructional Documents** Go over pages 231-237 with class including examples. Assign application questions form pages 236 and 237. Quizzes FA 5-3A and FA 5-3B (Applied Math Conference 2012)

- **Assessment Tool used in this Lesson** Assess students during class discussion, practice problems, and quizzes.

- **Reinforcement/Intervention/Extension Activities**
  Have students explore these three websites:
  http://ellerbruch.nmu.edu/cs255/jnord/boxplot.html,
  http://www.internet4classrooms.com/, and
  http://www.internet4classrooms.com/skill_builders/box_and_whisker_math_eighth_8th_grade.htm

- **Career Applications** Individuals who will be dealing trends and frequencies such as those in retail, hospitality, etc can benefit from this information.

5-3 Websites

http://ellerbruch.nmu.edu/cs255/jnord/boxplot.html

http://www.internet4classrooms.com/

http://www.internet4classrooms.com/skill_builders/box_and_whisker_math_eighth_8th_grade.htm

5-8 Website

http://nces.ed.gov/nceskids/createagraph/

Chapter 5-3 Quiz A

1. Represent the following soccer ball weekly inventory in a stem-and-leaf plot: 11, 59, 78, 15, 65, 84, 31, 24, 59, 11, 12, 37, 84, 59, 68, 52, 84, 24, 24, 74, 23, 30, 23, 20, 56, 45, 48, 58, 68, and 64.

2. What is the frequency of the chart you created above?

3. Using the frequency and the stem-and-leaf plot you created for number one what is the mean of the soccer ball weekly inventory? Show your work.

4. Using the stem-and-leaf plot you created for number one what is the median of the soccer ball weekly inventory? Show your work if applicable.

5.   Give an example of a legend or key to describe how to read your stem-and-leaf plot.

Chapter 5-3 Quiz A

<mark>Answer Key</mark>

1. Represent the following soccer ball weekly inventory in a stem-and-leaf plot: 11, 59, 78, 15, 65, 84, 31, 24, 59, 11, 12, 37, 84, 59, 68, 52, 84, 24, 24, 74, 23, 30, 23, 20, 56, 45, 48, 58, 68, and 64.

```
1 | 1 1 2 5
2 | 0 3 3 4 4 4
3 | 0 1 7
4 | 5 8
5 | 2 6 8 9 9 9
6 | 4 5 8 8
7 | 4 8
8 | 4 4 4
```

2. What is the frequency of the chart you created above?

    30

3. Using the frequency and the stem-and-leaf plot you created for number one what is the mean of the soccer ball weekly inventory?

    46.3

4. Using the stem-and-leaf plot you created for number one what is the median of the soccer ball weekly inventory?

    50

5. Give an example of a legend or key to describe how to read your stem-and-leaf plot.

    Varies- However, and example would be:

    $3 \mid 0 \; = \; 30$

Chapter 5-3 Quiz B

1. Represent the following data indicating how many hours a week your classmates spend using a cell phone in a box-and-whisker plot: 30, 25, 8, 20, 70, 92, 84, 25, 26, 74, 59, 12, 10, 0, 46, 71, 41, 25, 24, 29, 76, 48, 15, 24, 95, 32, 23, 42, 24, and 60.

2. Make a frequency distribution table using the information from the data listed in question one.

3. Using the frequency you found in question 2 and the box-and-whisker plot you created for number one what is the mean of the how many hours a week your classmates spend using a cell phone? Show your work.

4. Using the box-and-whisker plot you created for number one what is the median of the hours a week your classmates spend using a cell phone? Show your work if applicable.

5. Using the data from number one find the interquartile range of the hours a week your classmates spend using a cell phone. Show your work.
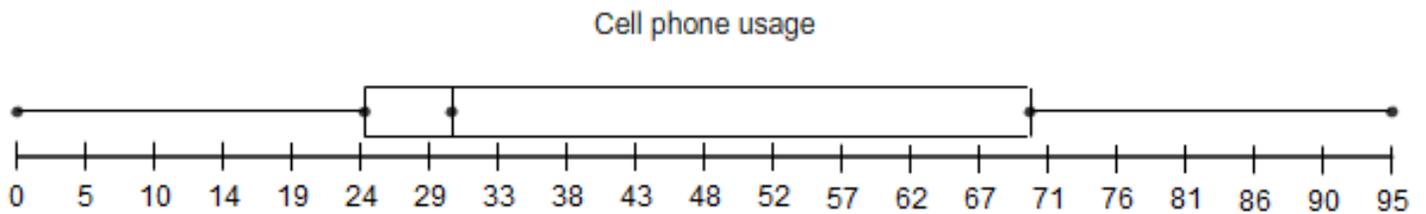
6. How many outliers are there?

Chapter 5-3 Quiz B
<mark>Answer Key</mark>

1. Represent the following data indicating how many hours a week your classmates spend using a cell phone in a box-and-whisker plot: 30, 25, 8, 20, 70, 92, 84, 25, 26, 74, 59, 12, 10, 0, 46, 71, 41, 25, 24, 29, 76, 48, 15, 24, 95, 32, 23, 42, 24, and 60.

Cell phone usage

2. Make a frequency distribution table using the information from the data listed in question one.

Hours	Frequency
0	1
8	1
10	1
12	1
15	1
20	1
23	1
24	3
25	3
26	1
29	1
30	1
32	1
41	1
42	1
46	1
48	1
59	1
60	1
70	1
71	1

74	1
76	1
84	1
92	1
95	1
TOTAL	30

3. Using the frequency you found in question 2 and the box-and-whisker plot you created for number one what is the mean of the how many hours a week your classmates spend using a cell phone? Show your work.

   1210/30=**40.3**

4. Using the box-and-whisker plot you created for number one what is the median of the hours a week your classmates spend using a cell phone? Show your work if applicable.

   30+29=59

   59/2= **29.5**

5. Using the data from number one find the interquartile range of the hours a week your classmates spend using a cell phone. Show your work.

   60-24=**36**

6. How many outliers are there?

   14