

REAL ESTATE SALES LEADER

Performance Standard 10A.H

Examine a set of data for three realtors' sales to determine which one is the sales leader accordingly:

- *Mathematical knowledge:* calculate the mean, median and mode for a data set using the statistical functions within a spreadsheet program; know how to manipulate data to represent different points of view.
- *Strategic knowledge:* present a case for one realtor being the best choice for sales leader based on analysis of the data.
- *Explanation:* explain completely and clearly what was done and why it was done. Include three charts to support your analysis.

Procedures

1. ***In order to organize, describe and make predictions from existing data (10A)***, students should experience sufficient learning opportunities to develop the following:

- Determine the best measure of central tendency from mean, median and mode.
- Discuss how data can be manipulated to represent different points of view based on the use of different measures of central tendency and based on different graphical displays.

Business students will use the statistical functions of mean, median, mode in spreadsheet programs to complete many applications. This assessment gives students practice using functions and formulas in a spreadsheet program, along with making analytic decisions based on their findings. This assessment aligns with the following Occupational Skill Standards:

- a. Database and Spreadsheet Operations/Create Spreadsheet, Input Data into Spreadsheet, Update Data in Spreadsheet and Store Spreadsheet (Skill #86 from the Administrative Support Standards, Skill #117 from the Medical Office Standards and Skill #145 from the Legal Office Standards)
- b. Computer Applications/Create Graphs and Charts from Spreadsheets (Skill #91 from the Administrative Support Standards, Skill #122 from the Medical Office Standards and Skill #150 from the Legal Office Standards)

In addition, Workplace Skills identified with this assessment include H1 (Solving Problems and Critical Thinking/Identify the problem), H3 (Solving Problems and Critical Thinking/Identify solutions to a problem and their impact) and H7 (Solving Problems and Critical Thinking/Select and implement a solution to a problem.)

2. Provide each student a copy of the "Real Estate Sales Leader" task sheets and the rubric. Have students review and discuss the task to be completed and how the rubric will be used to evaluate it. The use of statistical functions in a spreadsheet program is required.
3. Have the students work individually to solve the problem. (Do not help the students or guide their thinking as they solve the following problem.) All work should be completed in class.

Three realtors work for the same company. Each is being considered for sales leader of the year. The sales leader of the year is given a \$5,000 bonus. Therefore, each one is trying hard to make the case to be the person selected, based on a year's sales data. Using the statistical functions in a spreadsheet program, develop a case for one realtor being the best choice based on your analysis of the data. In addition, include three charts representing and supporting your analysis.

4. Evaluate each student's work using the rubric and its guide to determine the performance level. Give each student a score in each of the three categories, scoring each part of the problem separately. Students receiving a 4 should be able to look at the situation in several ways. For example, they will consider different statistical representations of central tendency, as well as total sales and distribution of the sales. A score of 3 will generally focus on fewer measures of central tendency such as mean or median and will probably not consider all the relevant data such as total sales or number of sales made. A score of 2 will focus on only one measure of central tendency and few other details, generally having trouble viewing the data from multiple perspectives. A score of 1 reflects an inability for students to look past one measure of central tendency and an inability to view complex information from more than one point of view. Minor errors in computation include making errors in the actual addition or multiplication, rounding incorrectly. Major errors include using the wrong operation or formulas. Evaluate each part as follows:

- Part A: The students should describe how each realtor could be viewed as the sales leader. The first realtor had a mean selling price for 48 houses of \$180,000, a median of \$170,000 and a mode of \$190,000. The second realtor had a mean selling price for 63 houses of \$136,825, a median of \$135,000 and a mode of \$145,000. The third realtor had a mean selling price for 48 houses of \$174,583, a median of \$175,000 and a mode of \$175,000.
- Part B: The students should present a case for one of the realtors and justify it in terms of the sales figures. Students may choose to make a case in terms of quartile range, total dollar sales, highest average selling price, etc. There is not a single correct answer for this part. The key is to be able to produce a convincing argument for the position the student takes. This should include the use of charts or graphs generated from the spreadsheet program that clearly illustrate the points the student is trying to make.

Examples of Student Work

- [Meets](#)
- [Exceeds](#)

Time Requirements

- Two class periods

Resources

- Copies of the "Real Estate Sales Leader" task sheets
- Spreadsheet program
- Mathematics Rubric

NAME _____ DATE _____

REAL ESTATE SALES LEADER

Student Task Sheet

Three realtors work for the same company. Each is being considered for sales leader of the year. The sales leader of the year is given a \$5,000 bonus. Therefore, each of the individuals is trying hard to make the case to be the person selected, based on sales data. Using the statistical functions in a spreadsheet program, develop a case for one realtor being the best choice based on your analysis of the data. In addition, include three charts representing and supporting your analysis. The chart provided on the next page shows the value of each home sold during the year by each realtor.

A. Discuss how each person might make a case for being the sales leader, based on the data provided. Be sure to include a comparison of measures of central tendency for each realtor as part of your analysis.

B. Which person do you think should be declared the sales leader, and why? Remember to use your spreadsheet functions and charts to support your reasoning.

**REAL ESTATE SALES LEADER
Data Sheet**

Sales Month	Selling price of homes sold in thousands of dollars		
	Realtor #1	Realtor #2	Realtor #3
January	90, 125, 200	80, 90, 100, 130, 140, 155	125, 145, 225, 255
February	150, 225, 575	75, 95, 105, 115, 130, 150	145, 160, 195
March	130, 175, 205, 215	85, 120, 125, 130, 140	120, 145, 190, 200
April	125, 155, 180, 300	80, 145, 160, 180, 220,	125, 140, 160, 175, 175, 190
May	125, 140, 160, 175, 175, 190	100, 110, 120, 165, 170	110, 140, 165, 190, 210
June	125, 145, 225, 255	90, 145, 155, 190, 200	175, 180, 190
July	110, 140, 165, 190, 210	95, 110, 145, 165, 170	115, 140, 175, 195, 225
August	135, 150, 200, 290	100, 115, 125, 145, 170	170, 175, 180, 190,
September	120, 145, 190, 190	110, 125, 135, 150, 165	150, 225, 375
October	115, 140, 175, 195, 225	145, 165, 175, 190, 200	100, 135, 190, 195
November	135, 150, 165, 190	95, 105, 115, 135, 145, 175	140, 150, 165
December	150, 200	100, 125, 145, 190, 195	175, 180, 195, 210

MATHEMATICS RUBRIC

NAME _____ DATE _____

- Exceeds standard (must receive a 4 in each area)
- Meets standard (must receive all 3's or a combination of 3's and 4's)
- Approaches standard (must receive all 2's or any combination which may include a 3 or a 4)
- Begins standard (has no 3's or 4's but not all 1's)
- Absent (has all 1's and 0's)

	Mathematical Knowledge	Strategic Knowledge	Explanation
4	<ul style="list-style-type: none"> • Wrote the right answer. • Used math words correctly to show understanding of how math works. • Worked it out with no mistakes. • Used the right math words and labeled the answers. 	<ul style="list-style-type: none"> • Identified all the important parts of the problem, and knew how they went together. • Showed all the steps used to solve the problem. 	<ul style="list-style-type: none"> • Wrote what was done and why it was done. • If a drawing was used, all of it was explained in writing.
3	<ul style="list-style-type: none"> • Knew how to do the problem, but made small mistakes. 	<ul style="list-style-type: none"> • Identified most of the important parts of the problem. • Showed most of the steps used to solve the problem. 	<ul style="list-style-type: none"> • Wrote mostly about what was done. • Wrote a little about why it was done. • If a drawing was used most of it was explained in writing.
2	<ul style="list-style-type: none"> • Understood a little, but made a lot of big mistakes. 	<ul style="list-style-type: none"> • Identified some of the important parts of the problem. • Showed some of the steps used to solve the problem. 	<ul style="list-style-type: none"> • Wrote some about what was done or why it was done but not both. • If a drawing was used, some of it was explained in writing.
1	<ul style="list-style-type: none"> • Tried to do the problem, but didn't understand it. 	<ul style="list-style-type: none"> • Identified almost no important parts of the problem. • Showed almost none of the steps used to solve the problem. 	<ul style="list-style-type: none"> • Wrote or drew something that didn't go with the answer. • Wrote an answer that was not clear.
0	<ul style="list-style-type: none"> • No answer attempted. 	<ul style="list-style-type: none"> • No strategy shown. 	<ul style="list-style-type: none"> • No written explanation.
Score			