

THE TRUE
STORY
OF THE

3 LITTLE PIGS!

Community Service Order

Grade Level: 5th

Subject: Math

Florida Standards: MA.5.DP.1.1, MA.NSO.2.3, MA.5.NSO.2.2

Duration: 40-50 minute class period

Activity: Students will analyze data

Objectives: Students will analyze data and use mathematical calculations to find the mean, median, and mode for the data

Description: Students will analyze data in a table by calculating the mean then comparing those values. They will then use those values and the cost to determine the best choice for building material. The students will then find the cost for each type of house then find the mean, median, and mode for the length of lumber needed to build the houses.

Materials:

- Pencil
- Community Service Order worksheet

Procedures:

1. Pass out the worksheets
2. Read the scenario with the students, read the directions
3. Review the table with the students
4. Have the students complete the tables and answer the questions

Assessment: Assess students on completion of the worksheet

Community Service Order

Alexander T. Wolf, you are hereby ordered to complete community service by constructing replacement houses for the pig family you ate. You will build houses for the pigs' other family, including their cousins, aunts, uncles, and parents.

FIRST: You will determine the best material for the house that has the best combination of strength and cost.

SECOND: You will then calculate the total price for each type of house you will have to build. The pig families are different sizes, so there will be different sized houses.

Building Materials

Several types of wood were tested for their strength. The data is shown in the table below. For each type of wood, find the mean of the data.

NOTE: To find the mean, you

1. Add up all of the numbers for the trials
2. Divide the sum by the number of trials there were

Your mean should be somewhere in the range of your data set

Type of Wood	Cost per yard	Trial 1 (kpsi)	Trial 2 (kpsi)	Trial 3 (kpsi)	Trial 4 (kpsi)	Mean (kpsi)
Maple	\$2.92	5.3	5.1	4.9	5.1	
Mahogany	\$3.72	5.8	5.6	5.9	5.6	
Pine	\$1.63	3.2	3.4	3.4	3.1	
Cedar	\$2.37	4.1	4.4	4.2	4.2	

Which type of wood do you think would be the BEST choice to build the pigs' houses out of?
Use the cost of the wood AND the strength (mean you calculated) to explain your reasoning.

Community Service Order

Alexander T. Wolf, you are hereby ordered to complete community service by constructing replacement houses for the pig family you ate. You will build houses for the pigs' other family, including their cousins, aunts, uncles, and parents.

FIRST: You will determine the best material for the house that has the best combination of strength and cost.

SECOND: You will then calculate the total price for each type of house you will have to build. The pig families are different sizes, so there will be different sized houses.

House Cost

For each of the house styles, calculate the total cost that it would be to build the house. Use the price per yard of the wood you chose from the first part.

*****Notice that several of the house styles need the same amount of wood*****

Math Hint: cost = total yards needed x cost per yard

1. Find the mean for the total yards of wood needed:

Mean: _____ yards

2. Find the mode for the total yards of wood needed:

Mode: _____ yards

3. Find the median for the total yards of wood needed:

Median: _____ yards

BONUS: Find the mean, median, and mode for the cost of the houses:

Mean: \$_____ Mode: \$_____ Median: \$_____

House Style	Total Yards of Wood Needed	Cost
A	142	
B	153	
C	127	
D	153	
E	165	
F	142	
G	127	
H	127	
I	142	
J	153	
K	142	

Answer Key

Community Service Order

Alexander T. Wolf, you are hereby ordered to complete community service by constructing replacement houses for the pig family you ate. You will build houses for the pigs' other family, including their cousins, aunts, uncles, and parents.

FIRST: You will determine the best material for the house that has the best combination of strength and cost.

SECOND: You will then calculate the total price for each type of house you will have to build. The pig families are different sizes, so there will be different sized houses.

Building Materials

Several types of wood were tested for their strength. The data is shown in the table below. For each type of wood, find the mean of the data.

NOTE: To find the mean, you

1. Add up all of the numbers for the trials
2. Divide the sum by the number of trials there were

Your mean should be somewhere in the range of your data set

Type of Wood	Cost per yard	Trial 1 (kpsi)	Trial 2 (kpsi)	Trial 3 (kpsi)	Trial 4 (kpsi)	Mean (kpsi)
Maple	\$2.92	5.3	5.1	4.9	5.1	5.1
Mahogany	\$3.72	5.8	5.6	5.9	5.6	5.725
Pine	\$1.63	3.2	3.4	3.4	3.1	3.275
Cedar	\$2.37	4.1	4.4	4.2	4.2	4.225

Which type of wood do you think would be the BEST choice to build the pigs' houses out of?

Use the cost of the wood AND the strength (mean you calculated) to explain your reasoning.

Answer Key

Community Service Order

Alexander T. Wolf, you are hereby ordered to complete community service by constructing replacement houses for the pig family you ate. You will build houses for the pigs' other family, including their cousins, aunts, uncles, and parents.

FIRST: You will determine the best material for the house that has the best combination of strength and cost.

SECOND: You will then calculate the total price for each type of house you will have to build. The pig families are different sizes, so there will be different sized houses.

House Cost

For each of the house styles, calculate the total cost that it would be to build the house. Use the price per yard of the wood you chose from the first part.

*****Notice that several of the house styles need the same amount of wood*****

Math Hint: cost = total yards needed x cost per yard

1. Find the mean for the total yards of wood needed:

Mean: 144 yards

2. Find the mode for the total yards of wood needed:

Mode: 153 yards

3. Find the median for the total yards of wood needed:

Median: 142 yards

BONUS: Find the mean, median, and mode for the cost of the houses:

Mean: \$ _____ Mode: \$ _____ Median: \$ _____

House Style	Total Yards of Wood Needed	Cost
A	142	
B	153	
C	127	
D	153	
E	165	
F	142	
G	127	
H	127	
I	142	
J	153	
K	142	