

NAME: _____

UNIT 4 • DESCRIBING DATA

Lesson 1: Working with a Single Measurement Variable

Problem-Based Task 4.1.3: Comparing Data Sets

The number of miles per gallon for any given car can vary. Factors such as speed and weather affect gas mileage. Liam fills the gas tank in his car 15 times and records his gas mileage for each tank. Alyssa also fills her car's gas tank 15 times and records her gas mileage for each tank. The gas mileages are listed below.

Liam's Gas Mileage	
Tank	Miles per gallon
1	21
2	17
3	17
4	18
5	22
6	21
7	18
8	17
9	19
10	21
11	19
12	18
13	21
14	19
15	18

Alyssa's Gas Mileage	
Tank	Miles per gallon
1	23
2	24
3	25
4	23
5	23
6	24
7	24
8	25
9	25
10	22
11	23
12	24
13	23
14	22
15	21

Sarah would like to buy a car that needs the least amount of gas. She is thinking of either buying a car like Liam's, or a car like Alyssa's. If she would like a car with the highest gas mileage, which should she buy? Compare the data using measures of center and spread, and include a graph to show the differences between the data.

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Coaching

- a. Sort both data sets from least to greatest.

- b. Determine which measure of center to use to compare the data.

- c. Calculate the measure of center.

- d. Determine which measure of spread to use to compare the data.

- e. Calculate the measure of spread.

- f. Determine which type of graph would best help Sarah compare the gas mileage of the two cars.

- g. Plot the data on two graphs.

- h. Which kind of car should Sarah buy? Use the measures of center, the measures of spread, and the graphs to identify the car with the highest gas mileage.