How many pets do you have?

How many pets does your entire group have? Find the total number of pets for your whole group and record that number in the table on the board.

1. Record the data for the class here.

2. **Finding Quartiles**
   a. List the data below in order from least to greatest. Find the median of the data. Draw a line in the data set to mark this and write in the median value. You have now split the data set into two halves.

   b. Find the median of each of the halves. Draw a vertical line to mark each of these above and write in the values. You've now split the data set into four groups or quarters. The median of the first half is called the *first quartile* and the median of the second half is called the *third quartile*.

3. **Finding Standard Deviation:** Finding range is helpful but it does not tell us how spread out the data is between the minimum and maximum. How can we find the ***average distance of the values from the mean***?

Value	Value - Mean	(value - mean)^2

   a. Find the mean of the data.
   b. Find the distance of each piece of data from the mean.
   c. Square the differences to make them positive.
   d. Find the "average".
   e. Square root to undo the squares.

Average of all (value - mean)^2:	

Square Root to undo squares:	

4. Go to www.stapplet.com. Enter the classroom data and find the summary statistics. Verify our work.
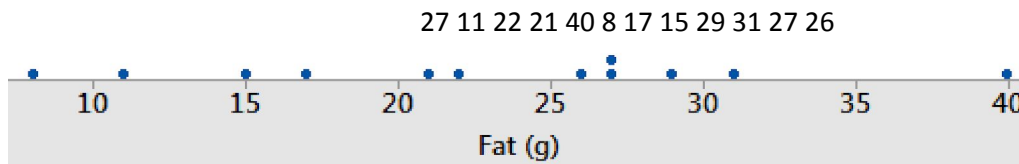
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Describing Data: Measures of Variability

Important Ideas:

Check for Understanding:

Have we found the beef?

Here are data on the amount of fat (in grams) in 12 different McDonald's beef sandwiches, along with a dotplot. The mean fat content for these sandwiches is $\bar{x} = 22.833$ grams.

27 11 22 21 40 8 17 15 29 31 27 26

Fat (g)

1. Find the range of the distribution.

2. Find the interquartile range. Interpret this value in context.

3. Calculate the standard deviation. Interpret this value in context.

4. a. The dotplot suggests that the Bacon Clubhouse Burger, with its 40 grams of fat, is a possible outlier. Recalculate the range, interquartile range, and standard deviation for the other 11 sandwiches.

b. Compare these values with the ones you obtained in Questions 1 through 3.
Explain why each result makes sense.

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