Statistics is the science of collecting, organizing, and analyzing data.

There are two major classifications of data.

- ***Categorical*** (categories)
  - Based on "qualities" such as color, taste, or texture, rather than measurements
- ***Quantitative*** (numerical)
  - Based on measurements

There are two types of quantitative data.

- ***Discrete***
  - There is a finite number of possible data values.
- ***Continuous***
  - There are too many possible data values so data needs to be measured over intervals.

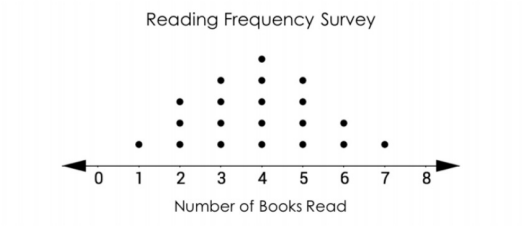
Classify the following variables.

Height	o Categorical o Discrete quantitative ✓ Continuous quantitative
Favorite subject	✓ Categorical o Discrete quantitative o Continuous quantitative
Number of televisions in a household	o Categorical ✓ Discrete quantitative o Continuous quantitative
Area code	✓ Categorical o Discrete quantitative o Continuous quantitative
Distance a football is thrown	o Categorical o Discrete quantitative ✓ Continuous quantitative
Number of siblings	o Categorical ✓ Discrete quantitative o Continuous quantitative

A group of college students were surveyed about the number of books they read each month. The data set is listed below.

1, 2, 2, 2, 3, 3, 3, 3, 4, 4, 4, 4, 4, 5, 5, 5, 5, 6, 6, 7

- Let's display the above data in a ***dot plot***.



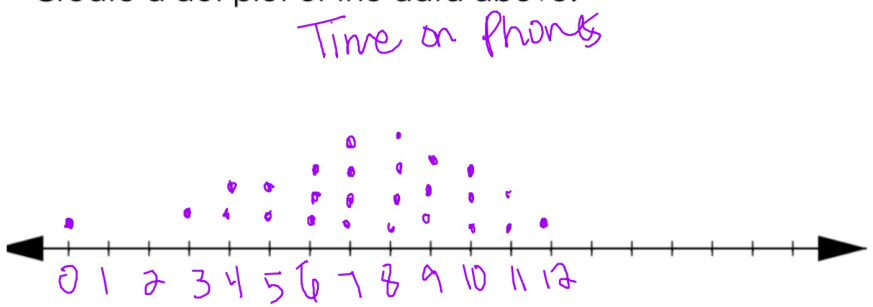
- Each data value is represented with a dot above the number line.
- The dot plot shows the frequency of data values.
- Always include the title and an appropriate scale on the number line for the dot plot.
- Dot plots are often used for:
  - smaller sets of data
  - discrete data

What is ***frequency***? How often data occurs

The amount of time 26 students spent on their phones on a given day (rounded to the nearest hour) is recorded as follows.

0, 3, 4, 4, 5, 5, 6, 6, 6, 7, 7, 7, 7, 8, 8, 8, 8, 9, 9, 9, 10, 10, 10, 11, 11, 12

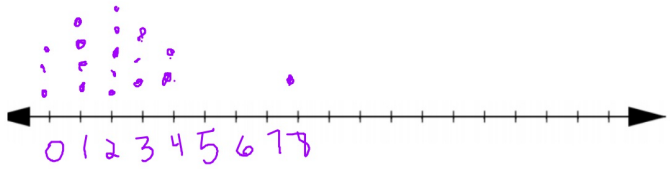
Create a dot plot of the data above.



Mrs. Ferrante surveyed her class and asked each student, "How many siblings do you have?" The results are displayed below.

0, 4, 2, 2, 3, 4, 8, 1, 0, 1, 2, 2, 3, 0, 3, 1, 1, 2

a. Construct a dot plot of the data.



b. What observations can you make about the shape of the distribution?

Most data is clumped.
One value far away.

c. Are there any values that don't seem to fit? Justify your answer.

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The cafeteria at Just Dance Academy offers items at seven different prices. The manager recorded the price each time an item was sold in a two-hour period and created a dot plot to display the data.

Describe the data from the dot plot.

Most people bought $3 items
24 items sold