

What You Need to Know

Statistics is a type of math used to collect and organize **data**. There are many different ways to display data once it is collected. Charts, tables, plots, and graphs display data in visual ways that are easier to understand and analyze. One way to organize data is to make a **stem-and-leaf plot**.

Example: A YouTuber records how many seconds it takes for his friends to tie their shoes. He wants to display the data in a stem-and-leaf plot. This type of plot takes one data point and splits it into two parts. For example, 2.8 seconds is split into a stem (2) and leaf (8), with the stem being seconds and the leaf being tenths of a second.

2.8, 3.0, 3.5, 3.5, 4.0, 4.5, 5.0, 6.0, 6.0, 6.5

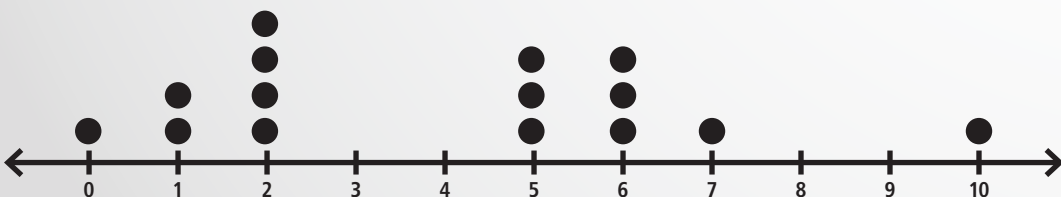
Stem	Leaf
2	8
3	0 5 5
4	0 5
5	0
6	0 0 5

Another way to display data is in a **dot plot**.

Example: A YouTuber wants to calculate how many times viewers are visiting her channel each week. She receives data for 15 viewers and records it in a table.

0	1	1	2	2
2	2	5	5	5
6	6	6	7	10

To display the data on a dot plot, she draws a number line and then adds a dot to represent each value.



To display the data on a **box plot**, she first needs to organize the data from least to greatest.

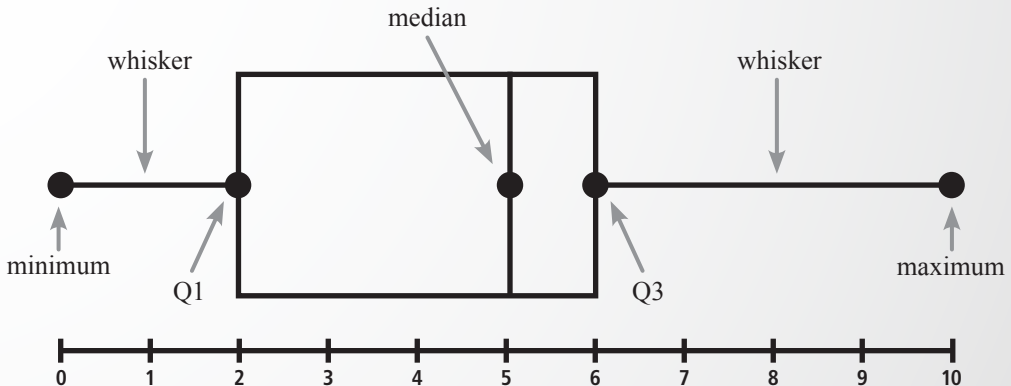
0 1 1 2 2 2 2 5 5 5 6 6 6 7 10

The **minimum** value is 0. The **median** (middle) value is 5. The **mode** (the value that appears most often) is 2. The **maximum** value is 10. The **mean** is the average of the data set. This is found by adding all the values in a set and dividing by the total amount in the set (in this case, 15 viewers).

$$0 + 1 + 1 + 2 + 2 + 2 + 2 + 5 + 5 + 5 + 6 + 6 + 6 + 7 + 10 = 60$$

$$60 \div 15 = 4$$

The **first quartile** (Q1) is the middle number in a set of data between the minimum value and the median (in this case, 2). The **third quartile** (Q3) is the middle number found between the median and the maximum value (in this case, 6). A box plot displays a box between the first and third quartiles. The “whiskers” are drawn to show the minimum and maximum values.





“The best part about being a content creator is that you can create videos that promote your interests. However, remember that one totally important goal is to gain **subscribers**, and the best way to do that is to make content that others will want to watch,” said Archie.



Work It Out

Ashavari, Cyrus, and Naomi subscribe to Archie and Alonzo's YouTube channel. Following the channel means they never miss a video. The three friends have dreamed of starting their own channel together for a long time, but they always disagree when it comes to the content. Ashavari loves gameplay videos. Cyrus prefers sports blooper videos, and Naomi is a fan of cat videos.

Archie and Alonzo asked the group to list how many hours a day they spend watching YouTube. Review the data they collected. Make a stem-and-leaf plot to display the data. What is the average amount of time that kids in the seminar spend watching YouTube? Round the average up to the nearest whole number.

Data values: 0, 0.5, 0.5, 0.7, 1.0, 1.0, 1.2, 1.5, 1.5, 2.0, 2.2, 2.5, 3.0, 3.2, 3.5, 3.5, 4.0, 4.0

Stem	Leaf