

Statistics & Probability

(Dot Plots & Frequency Tables)

I can create a frequency table
and dot plot from given data.

What is a dot plot?

A dot plot is a quick way to organize data by plotting dots vertically on a line by the number of times a value occurs in data.

Vocab:

What is a frequency table?

A frequency table is another way to organize statistical data to show the number of times a data value occurs.

How do we make frequency tables and dot plots?

Valerie rolled a die 10 times and had the following results:

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

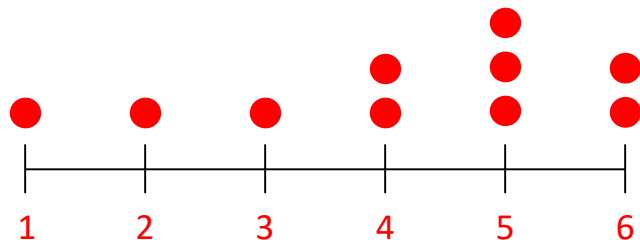
Frequency Table

Dice Outcome	Tally	Frequency
1		1
2		1
3		1
4		2
5		3
6		2

What are tally marks?

Tally marks is a quick method used to keep track of numbers in groups of five.

Dot Plot



Statistics and Probability
(Histograms)

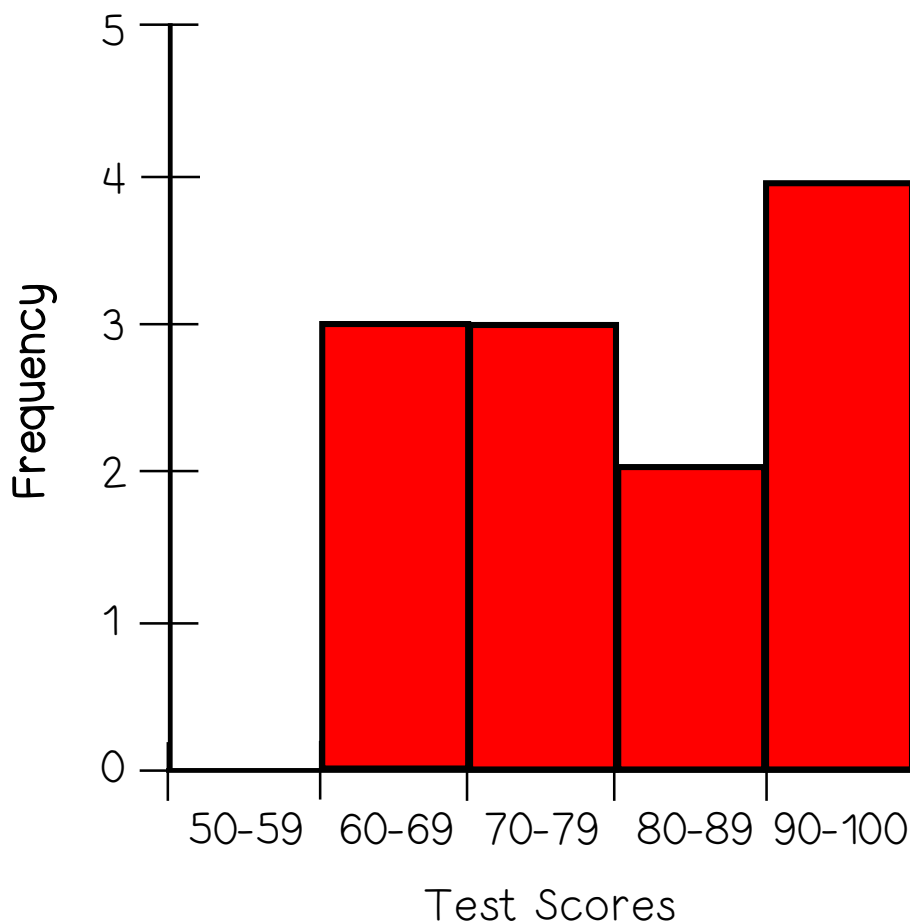
I can create a histogram from
a given set of data.

What is a
histogram?

A histogram is a visual diagram
of data using bars (shaped as
rectangles) to display the
frequency of data.

Listed below is the test scores from a classroom of 12
students. Use this data to create a histogram.

65, 89, 92, 73, 85, 100, 71, 79, 90, 67, 63, 98



Statistics and Probability
(Mean, Median, Mode, & Range)

I can calculate the mean, median, mode, and range from a given set of data.

Vocab:

What is mean, median, mode, and range?

"Mean"

The average
of a data set

"Median"

The middle
of a data set

"Mode"

The number
that occurs
the most

"Range"

The difference
between the
largest and
smallest value

Sam's test scores in math were 85, 78, 96, 92, 83, and 77. Determine the mean, median, mode, and range of Sam's test scores.

Mean:

$$\frac{85 + 78 + 96 + 92 + 83 + 77}{6}$$

$$\frac{511}{6} = 85.1\bar{6} \approx 85.2$$

Median:

$$77, 78, \underline{83, 85}, 92, 96$$

$$= \frac{83+85}{2} = 84$$

77, 78, 83, 85, 92, 96

None – There is no number
that occurs more than once

Mode:

$$96 - 77 = 19$$

The difference between the
largest number and smallest
number is 19

Range:

Statistics and Probability
(Mean Absolute Deviation)

I can calculate the mean absolute deviation from a given set of data.

Vocab:

What is mean absolute deviation (MAD)?

The mean absolute deviation is the average distance between each given value and the mean.

Steps

How to Calculate Mean Absolute Deviation:

- 1.) Calculate the mean. Distance will be positive
- 2.) Find the distance of each value from the mean.
- 3.) Calculate the mean of all of the distances.

Example:

Calculate the mean absolute deviation:

Sam's test scores in math were 87, 62, 94, 85, 98, and 81.

Ordered data: 62, 81, 85, 87, 94, 98

$$\frac{62 + 81 + 85 + 87 + 94 + 98}{6} = \frac{507}{6} = 84.5$$

$$62 - 84.5 = 22.5 \quad 87 - 84.5 = 2.5$$

$$81 - 84.5 = 3.5 \quad 94 - 84.5 = 9.5$$

$$85 - 84.5 = 0.5 \quad 98 - 84.5 = 13.5$$

$$\frac{22.5 + 3.5 + 0.5 + 2.5 + 9.5 + 13.5}{6} = \frac{52}{6} = 8.\bar{6} \approx 8.7$$

Answer

8.7

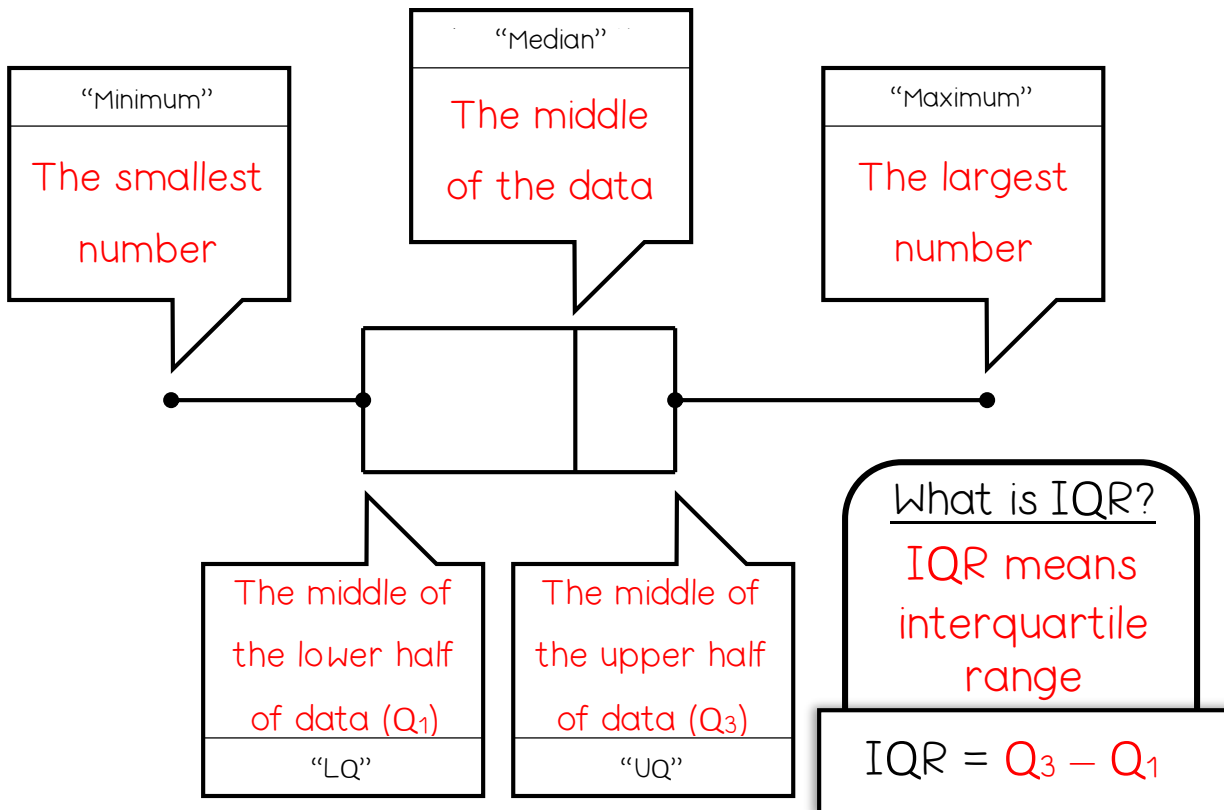
Statistics and Probability
(Box & Whisker Plot)

I can create a box and whisker plot from a given set of data.

Vocab:

What is a box and whisker plot?

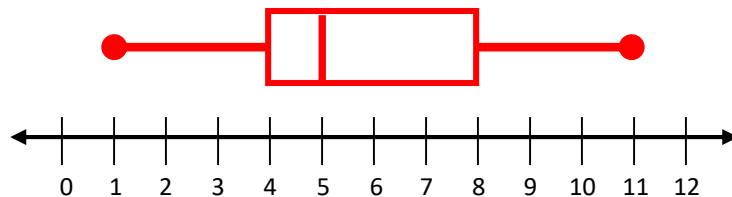
A box and whisker plot is a way to organize data by creating a box to visualize the data.



Create a box and whisker given the data:

11, 8, 5, 1, 4, 5 → Ordered Data: 1, 4, 5, 5, 8, 11

- 1.) Minimum: **1**
- 2.) Lower Quartile: **4**
- 3.) Median: **5**
- 4.) Upper Quartile: **8**
- 5.) Maximum: **11**



$IQR = \underline{8 - 4} = \underline{4}$