Organizing Statistical Data

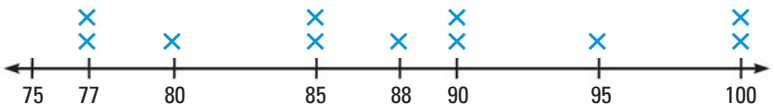
TEKS 8.12.C

Because it is difficult to analyze unorganized data, it is helpful to organize data using a line plot, stem-and-leaf plot, histogram, or box-and-whisker plot.

EXAMPLE **Sydney's math test scores are 90, 85, 88, 95, 100, 77, 85, 100, 80, 77, and 90.**

a. Draw a line plot to display the data.

Make a number line from 75 to 100. Each time a value is listed in the data set, draw an X above the value on the number line.



b. Draw a stem-and-leaf plot to display the data.

First write the leaves next to their stems.

7	7 7
8	5 8 5 0
9	0 5 0
10	0 0

Key: 7 | 7 = 77

Then order the leaves from least to greatest.

7	7 7
8	0 5 5 8
9	0 0 5
10	0 0

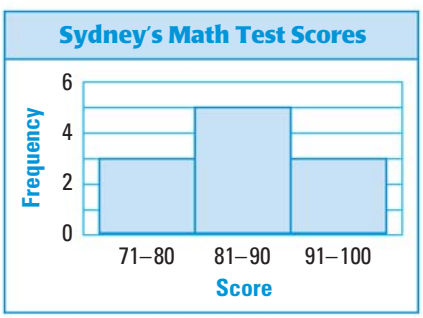
Key: 7 | 7 = 77

c. Draw a histogram to display the data.

First make a frequency table. Use equal intervals.

Score	Tally	Frequency
71–80	III	3
81–90	𝍸	5
91–100	III	3

Then make a histogram.



d. Draw a box-and-whisker plot to display the data.

Write the data in order from least to greatest. Ordered data are divided into a lower half and an upper half by the median. The median of the lower half is the **lower quartile**, and the median of the upper half is the _____.

77 77 80 85 85 88 90 90 95 100 100

77: Low value; 80: Lower quartile; 88: Median; 95: Upper quartile; 100: High value

Plot the median, quartiles, and low and high values below a number line. Draw a box between quartiles with a vertical line through the median as shown. Draw whiskers to the low and high values.