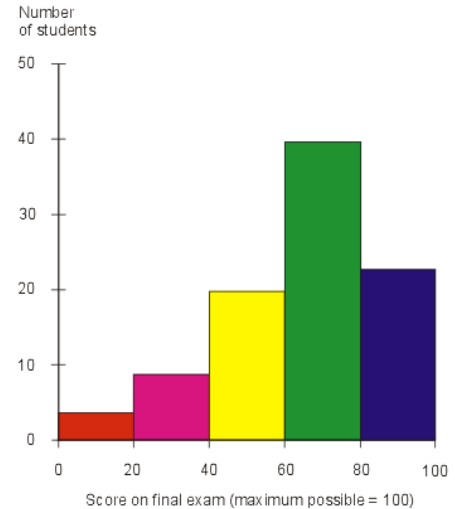


Sampling and Comparing Distributions – Tool Box

Statistics

Write a **statistical question** that might be answered by the data displayed.

Write a **survey question** that could have been asked that would generate the data displayed.



Measures of Center: Mean and Median

1) Describe how to find the **mean** of a data set: _____

2) What does the mean tell us about the data? _____

3) Describe how to find the **median** of a data set: _____

4) What does the median tell us about the data? _____

5) Find the mean and median of April's quiz scores (15 points possible): 9, 10, 12, 15, 7, 10, 14

Mean: _____ Median: _____



Measures of Variability: MAD & Range

1) Describe how to find the **mean absolute deviation** (MAD) of a data set: _____

2) What does the MAD tell us about the data? _____

3) Find the mean absolute deviation of April's quiz scores on the prior page.

April's mean absolute deviation: _____

4) What does the MAD tell us about April's quiz scores? _____

5) Find the range of April's quiz scores: _____ - _____ = _____

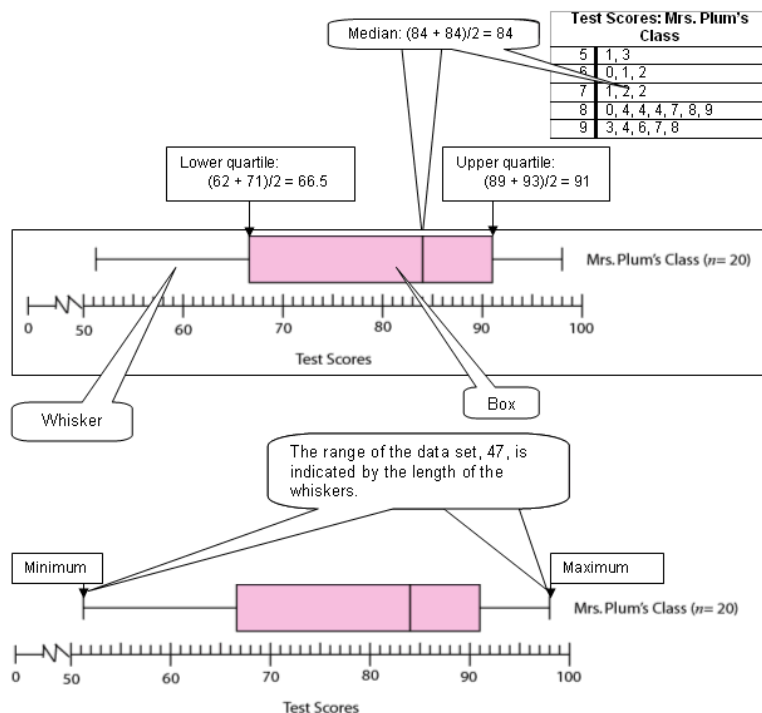
6) What does the range tell us about April's quiz scores? _____

Box-Plots

Why might a box plot be used over a histogram or line plot?

Describe how the scores from Mrs. Plum's class were used to create the box plot.

What is the inter-quartile range (IQR)?



Comparing Distributions

Using the line plot comparing test results of boys and girls on a weekly test, complete a 5-number summary and box plot for each gender.

Boys: 5-Number Summary

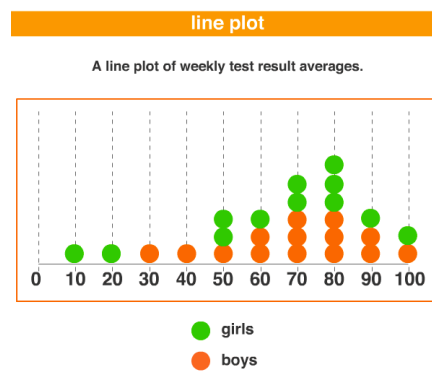
Minimum	Q1	Median	Q2	Maximum

Boys Box Plot

Girls: 5-Number Summary

Minimum	Q1	Median	Q2	Maximum

Girls Box Plot



1) Comparing the box plots, would you say the boys, or girls performed better on the test? How do you know?

2) Why was it not as easy to see the difference in the line plot?

3) Do boys or girls have a bigger range of scores? Explain.

4) Describe the skew of each box plot. What does the skew mean?

Boys:

Girls:

5) Which set of data do you think has the greater MAD? Why?



Sampling

Give an example of *convenience sampling*: _____

Give an example of *random sampling*: _____

For a sample to be considered valid, it should _____

Other Notes/Vocabulary

