HOW TO CHOOSE WHICH TYPE OF GRAPH TO USE?

When to Use . . .

. . . a Line graph.

Line graphs are used to track changes over short and long periods of time. When smaller changes exist, line graphs are better to use than bar graphs. Line graphs can also be used to compare changes over the same period of time for more than one group.

. . . a Pie Chart.

Pie charts are best to use when you are trying to compare parts of a whole. They do not show changes over time.

. . . a Bar Graph.

Bar graphs are used to compare things between different groups or to track changes over time. However, when trying to measure change over time, bar graphs are best when the changes are larger.

. . . an Area Graph.

Area graphs are very similar to line graphs. They can be used to track changes over time for one or more groups. Area graphs are good to use when you are tracking the changes in two or more related groups that make up one whole category (for example public and private groups).

. . . an X-Y Plot.

X-Y plots are used to determine relationships between the two different things. The x-axis is used to measure one event (or variable) and the y-axis is used to measure the other. If both variables increase at the same time, they have a positive relationship. If one variable decreases while the other increases, they have a negative relationship. Sometimes the variables don't follow any pattern and have no relationship.

VII. Analysis Questions

1. Under what circumstance would each of the following types of graphs be best used?

   a) Line Graph:

   b) Bar Graph:

   c) Circle Graphs:

2. How is a graph similar to a data table?

3. Does a steep curve on a line graph indicate a rapid or slow rate of change?

4. You are conducting a photosynthesis experiment to determine how much oxygen is produced over a 24-hour period of time. You are measuring the oxygen production every hour for 24 hours.
   a) What type of graph is best used to represent this data?
   b) When you construct a graph of your data, which variable will be placed along the x-axis?
   c) When you construct a graph of your data, which variable will be placed along the y-axis?

5. What is an advantage of using multiple lines on the same graph?