

## EXAMPLES OF DATA TABLES AND GRAPHS

### DATA TABLES

Experimentation that produced data in the form of numbers (quantitative data) must be placed in data tables. Data tables are needed in reports so that you can display your observations (data) in a clear, organized form. Several data tables may be included on one page, as long as the format is clear and easy to read.

Data tables should be created on computers. Each table's columns need headings above them (titles). Any units needed (centimeters, seconds, grams, etc.) should appear in the labels, not within the table itself. Rows may also need labels to identify a variable.

Titles for data tables should go *at the top* of each table and include a specific description of the kind of data the table contains. In formal reports, each title should also include the date and location where the data was collected. High school reports working with specific animals or plants should include the scientific as well as the common name. Always remember to underline or put into italics all scientific names.

Table 1. Earth's human population since 1 A.D.

YEAR	POPULATION (in billions)
1	0.25
1600	0.45
1700	0.59
1800	0.90
1900	1.55
2000	6.10

Table 2. The number of brine shrimp found in sections of tubing after the shrimp were exposed to differences in light, pH, or temperature, on October 2, 2009 at Poly High.

VARIABLES	SECTION 1	SECTION 2	SECTION 3	SECTION 4
LIGHT	5 (brightest)	15	68	50 (darkest)
pH	13 (pH 5.5)	37 (pH 6.7)	76 (pH 7.8)	65 (pH 8.6)
TEMPERATURE (°C)	68 (coldest)	64	32	44 (warmest)
CONTROL	23	34	21	37

### GRAPHS

Graphs are a perfect way to visually present your data. A data table will show your results in numbers, but is often uninteresting or difficult to interpret. A graph can take the same data, make it eye-catching and easily show large differences in your results. Graphs show comparisons between two or more groups or differences between variables.

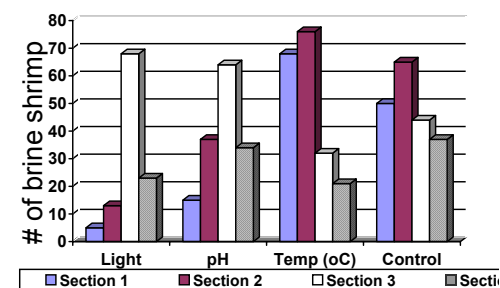
A graph cannot stand alone - it must be preceded by a data table. The data table contains exact details from an experiment that a graph often cannot show. They complement each other: one gives the details, one displays the trends.

Label both the X and Y axes and include any units necessary (grams, centimeters, etc.). Data from **dependent variables** (data that vary as the experiment continues) are placed on the Y axis. Data from **independent variables** (data that do not vary during the experiment, such as the days of the week,

experimental group numbers, and time periods) are placed on the X axis.

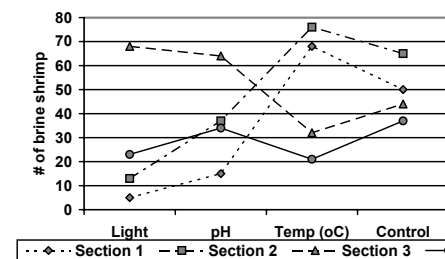
Graphs must be properly titled. The **formal title** for a graph goes *at the bottom* of the graph and like a data table, includes a description of the kind of data the table contains. In formal reports, each title should also include the date and location where the data was collected.

An Example of a BAR GRAPH  
(Three variables and the control are graphed)



The number of brine shrimp preferring various levels of light, pH, and temperature.  
(See Table 1 for details.)

An Example of a LINE GRAPH  
(Three variables and the control are graphed)



The number of brine shrimp preferring various levels of light, pH, and temperature.  
(See Table 1 for details.)

**NOTE:** The preceding examples show three variables graphed. It is suggested that you use only one variable in your experiment unless you have teacher permission. Also, the preceding examples are of a bar and line graph. As you know, there are other types of graphs that you have seen or made in science and other classes. You may select the type of graph(s) you would like to use in your written report.