

# DATA TABLES

Data tables organize information into rows and columns. Tables allow the reader to find information quickly and make comparisons between similar sets of facts. Tables are also used to record data as it is being collected.

## HOW TO MAKE A DATA TABLE:

1. Use a ruler and a pencil.
2. Give your table a title that identifies the **variables** involved (be brief but descriptive).
3. Give your data table as many columns (**vertical**) and rows (**horizontal**) as needed to display your data.
4. Each column needs a heading that explains the type of data displayed.
5. List the actual information collected under your column headings.
6. Include unit of measurement if applicable (meters, %, degrees, etc.).

The effect of different activities on heart rate				
Type of Activity	Heart Rate (beats/min)			Average
	Trial 1	Trial 2	Trial 3	
Resting	84	85	83	84
Rollerblading	156	150	162	156
Weight lifting	120	105	114	113
Watching the World Series	96	90	90	92

**EXAMPLE:** In a study of how different amounts of sunlight cause plants to grow, how much the plant grows is the dependent variable and the amount of sunlight provided in the experiment is the independent variable.

## **TERMS**

**Variables**-information being collected; properties or characteristics that can take on different values or amounts.

**Vertical**-“Top to Bottom”

**Horizontal**-“Side to Side”

**Independent Variable**-factor controlled by the experiment; the “I decide” variable on the X axis.

**Dependent Variable**-factor being measured in the experiment; variable on the Y axis; “Depends” on what’s measured.

# GRAPHS

There are four types of graphs most commonly used in science. They are:

1. **Bar graphs**- a simple way to compare information, especially volumes and quantities.
2. **Line graphs**- used to show how two variables change together.
3. **Circle graphs (Pie charts)**- are used to show the amount or size of parts in relation to single whole.
4. **Histogram**- a special type of bar graph that uses data shown as numbers in order.

## HOW TO MAKE A GRAPH:

1. Use a pencil and a ruler.
2. Draw the X axis (horizontal) and the Y axis (vertical).
3. Give your graph a title that describes the variables being measured.
4. Label the axes with the names of your variables (X=**independent variable** and Y=**dependent variable**).
5. Create your scale and be sure it includes only the range of values of the variables (ex: 0-50).
6. To ensure that your data will fit on your graph, it may be necessary to build a scale by 2’s or 5’s or 10’s etc.
7. Be consistent with your scale! If you skip lines between values, continue to do so all along that axis. If you are recording data by 2’s, make sure you continue to do so all along that axis.

