

Graphing Guidelines

- ◆ **Trim your graph** to fit on a single page within your lab report and attach it neatly with glue or clear tape. If appropriate, you may include the graph as a separate piece of paper.
- ◆ **Give your graph a title.** “*y-axis quantity vs. x-axis quantity*” is an appropriate title, but in some cases you will need to be more specific, such as when identical graphs are being created for two different substances (e.g. “*Mass vs. Volume of Metal A*”).
- ◆ **Label each axis.** Indicate the *quantity* and *units* of each variable (e.g. “*Mass (g)*”). The *independent variable* (variable you’re manipulating) is labeled on the x-axis, while the *dependent variable* (variable that changes in response to the independent variable) is labeled on the y-axis.
- ◆ **Choose an appropriate range.** Check the minimum and maximum values of each variable to determine the range of each axis. Unless instructed otherwise, you do not need to start at zero.
- ◆ **Maximize your graph area.** Choose a scale that expands your data to fill as much of the graph as possible, while still using convenient increments. A graph is easier to read when each square represents increments of 1, 2, 5, or a multiple of these numbers (e.g. 0.1, 10, 100). Label each axis at regular intervals such as every square or every 5 squares. You must maintain the same scale for the length of each axis, but the x-axis and y-axis do not need to have the same scales.
- ◆ **Plot points clearly.** An X (X) or a dot with a circle around it (⊙) can be located more easily than a single dot (•) after the graph line is drawn.
- ◆ **Draw a best-fit line or curve.** Since your data points represent experimental measurements rather than absolute numbers, they will not all fall precisely on a line or curve. Therefore, you should draw a straight line or smooth curve that best represents the *general tendency* of the data points. Use a fine-point pen to avoid a thick line.

Sample Graph

Mass vs. Volume of Metal A

