Section 1.4 Presenting Scientific Data

Unit: Introduction

Learning Objectives:

> a. Organize and analyze data using tables and graphs
> b. Identify the relationship between a manipulated variable and responding variable.
> c. Explain the importance of communicating data
> d. Discuss the process of peer review.

Skills:

- Be able to create a data table and graph

Language Objectives:

- Understand the difference between inverse and direct relationship.

- Accurately describe and apply the concepts described in this section, using appropriate academic language.

Notes:

Organizing Data

Average Annual Precipitation for Selected U.S. Cities	
City	**Average Annual Precipitation (cm)**
Buffalo, N.Y.	98.0
Chicago, Ill.	91.0
Colorado Springs, Colo.	41.2
Houston, Tex.	117.0
San Diego, Calif.	25.1
Tallahassee, Fla.	166.9
Tucson, Ariz.	30.5

this table has relates two variables—

(location) and a

-                 (average annual precipitation).

Independent variable is also known as…

Dependent variable is also known as…

Use this space for summary and/or additional notes.

Line Graphs
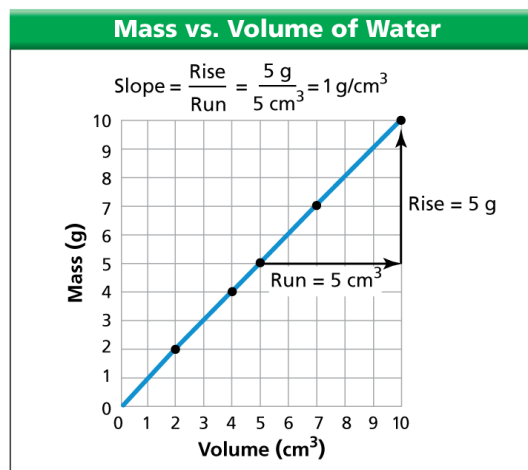
A line graph is useful for showing changes that occur in related variables.

- In a line graph, the _____ is generally plotted on the horizontal axis, or *x*-axis.

- The _____ is plotted on the vertical axis, or *y*-axis, of the graph

Sometimes the data points in a graph yield a straight line.

The steepness, or slope, of this line is the ratio of a vertical change to the corresponding horizontal change.
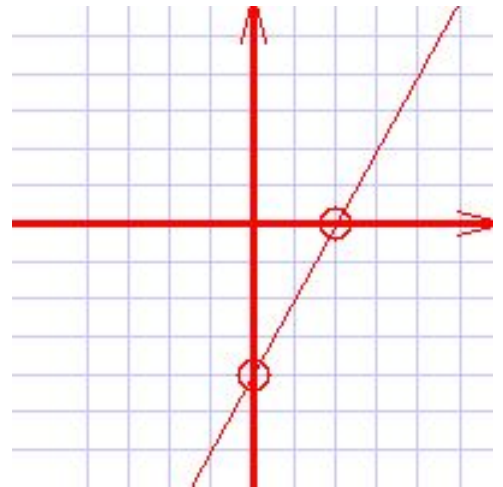
The formula for the slope of the line is

Mass vs. Volume of Water

$$\text{Slope} = \frac{\text{Rise}}{\text{Run}} = \frac{5 \text{ g}}{5 \text{ cm}^3} = 1 \text{ g/cm}^3$$

Rise = 5 g

Run = 5 cm^3

Mass (g)

Volume (cm^3)

Use this space for summary and/or additional notes.
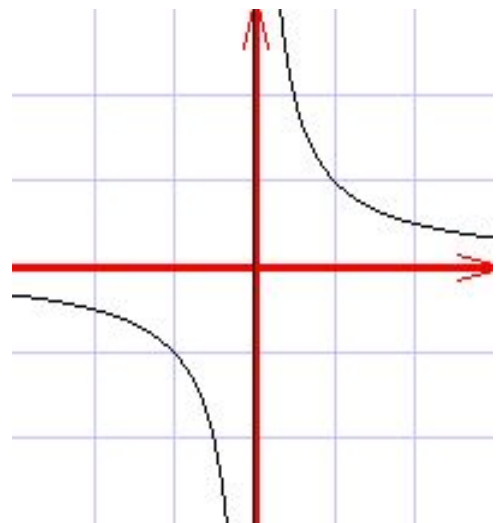
Direct Proportions

- The_____ of two variables is a constant

- As the value of one variable _____, the other must also _____

- As the value of one variable_____, the other must also _____

- The graph of a direct proportion is a

Inverse Proportions

- The _____of two variables is a constant

- As the value of one variable - _____, the other must _____

- As the value of one variable_____, the other must _____

- The graph of an inverse proportion is a _____

Use this space for summary and/or additional notes.