

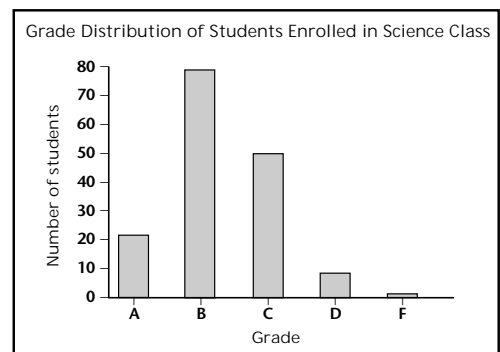
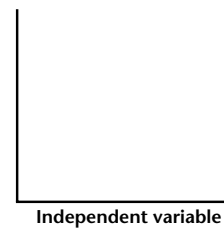
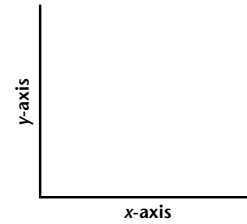
COMMUNICATING SKILLS

Grasping Graphing

When you bake cookies, you must use the right ingredients to make the cookies turn out right. Graphs are the same way. They require the correct ingredients, or components, to make them readable and understandable.

Bar and Line Graphs

- First, set up your graphs with an *x*-axis and a *y*-axis. The ***x*-axis** is horizontal, and the ***y*-axis** is vertical as shown in the example at right. The axes represent different variables in an experiment.
- The *x*-axis represents the independent variable. The **independent variable** is the variable whose values are chosen by the experimenter. For example, the range of grades is the independent variable.
- The *y*-axis represents the dependent variable. The values for the **dependent variable** are determined by the independent variable. If you are grouping students by grades, the number of students in each group **depends** on the grade they get.
- Next choose a **scale** for each of the axes. Select evenly spaced intervals that include all of your data, as shown on the grade-distribution bar graph. When you label the axes, be sure to write the appropriate units where they apply.
- Next, plot your data on the graph. Make sure you double-check your numbers to ensure accuracy.
- Finally, give your graph a title. A **title** tells the reader what he or she is studying. A good title should explain the relationship between the variables. Now your graph is complete!



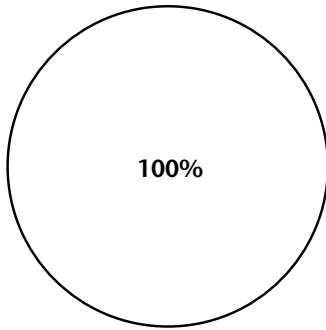
Grasping Graphing, continued

Pie Graphs

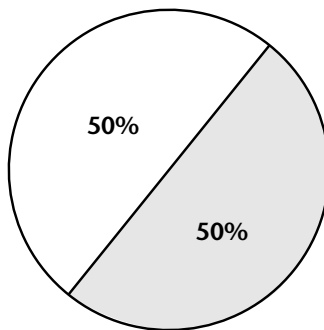
When you convert data to show percentages, you can use a pie graph. Pie graphs are shaped like a circle. The size of each “pie slice” is determined by the percentage it will represent. A full pie is equal to 100 percent, half a pie is equal to 50 percent, and so on.

Like bar and line graphs, pie graphs have independent and dependent variables. The independent variable is whatever the pie or slice of pie represents. The dependent variable is the size of the pie slice, the percentage of the whole it represents.

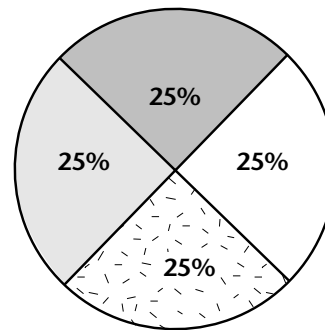
Percentage of Students Picking Various Lunch Entrees



Percentage of Students Picking Various Lunch Entrees



Percentage of Students Picking Various Lunch Entrees



Your Turn

For each table (a) identify the independent and dependent variable, (b) determine the type of graph to use, and (c) provide a title.

1.

Amount of daily sunlight exposure (min)	Average height of plants (cm)
50	14.8
60	14.9
95	15.2
75	15.1
110	16.5
135	17.3
100	16.1
30	11.0

a. _____

b. _____

c. _____

Grasping Graphing, continued

2.

Student	Number of jelly beans consumed
Anthony	15
Keiko	28
Leigh Ann	58
Adam	22
Katie	12
Juan	17

- a. _____
- b. _____
- c. _____

Give It a Try

Graph the data below in your ScienceLog. Don't forget to do the following:

- Select the appropriate graph type.
- Identify the independent and the dependent variable.
- Choose an appropriate scale.
- Label the axes.
- Give your graph a title.

Amount of fertilizer added to soil (g)	Average height of plants (cm)
5	13.2
10	14.1
15	14.9
20	15.4
25	16.5
30	17.3
35	16.1
40	11.0