

EXCEL Chemistry
Graphing Activity 4
Due September 21, 2020

Introduction

Graphing is used by scientists to display the data that is collected during a controlled experiment. A line graph must be constructed to accurately depict the data collected. An incorrect graph often leads to the acceptance of an incorrect hypothesis or detract from the acceptance of a correct hypothesis.

The graph should contain 5 major parts: the title, the independent variable, the dependent variable, the scales for each variable, and a legend (not always necessary on excel).

1. The Title: this shows what the graph is about; reading the title should give the reader an idea about the graph. It should be a concise statement placed above the graph.
2. The Independent Variable: this is the variable that can be controlled or manipulated by the experimenter; this variable should be placed on the horizontal or x-axis.
3. The Dependent Variable: this is the variable directly affected by the independent variable; it is the result of what happens because of the independent variable; this variable is placed on the vertical or y-axis.
4. The Scales for each Variable: in constructing a graph, one needs to know where to plot the points representing the data; in order to do this a scale must be employed that will include all the data points; each block should have a consistent amount or increment on a particular axis; while the scale should allow as much of the graph to be taken up as possible, it is not a good idea to set up a scale that is hard to manage; for example, multiples of 5, 10, etc. are good, while multiples such as 1.22 are not; your scale must be plotted on the amount of graph space available.
5. The Legend: this is a short descriptive narrative concerning the graph's data; it should be short and to the point.

Graphing Activity 1

Use the data in the table below to complete the graph provided. Remember to title your graph and label the axes properly when setting up your scale.

Depth in Meters	Number of Bubbles/minute Plant A	Number of Bubbles/minute Plant B
5	29	21
10	36	27
15	45	40
20	32	50
25	20	34
30	10	20

Answer the following questions based on the graph above you just completed.

1. What is the independent variable? _____

2. Explain why this is the independent variable. _____

3. What is the dependent variable? _____

4. Explain why this is the dependent variable? _____

5. Use one or more complete sentences to state a conclusion about the data in graph 1. _____

Graphing Activity 2

Diabetes is a disease affecting the insulin producing glands of the pancreas. If there is not enough insulin being produced by the cells, the amount of glucose in the blood will remain high. A blood glucose level above 140 for an extended period of time is not considered normal. This disease, if not brought under control, will lead to severe complications and even death.

1. Use the data in the table below to complete the graph. Remember to title your graph and label the axes properly when setting up.

Time After Eating (hrs)	Glucose Level in mL/L of Blood in Person A	Glucose Level in mL/L of Blood in Person B
0.5	170	180
1.0	155	195
1.5	140	230
2	135	245
2.5	140	235
3	135	225
3.5	130	200

Answer the following questions based on the graph you just completed.

1. What is the independent variable? _____

2. Why is it the independent variable? _____

3. What is the dependent variable? _____

4. Why is it the dependent variable? _____

5. Which, if any of the above individuals has diabetes? Be sure to justify your answer. _____

6. If the time period were extended to 6 hours, what would be the expected blood sugar level for Person B? _____

7. What would be a probably blood sugar level for person B at 3.5 hours? _____

8. Use one or more complete sentences to state a conclusion about the data in graph 2. _____

Graphing Activity 3

The data table shows water temperatures at various depths in an ocean.

Water Depth (meters)	Temperature (°C)
50	21
75	18
100	15
125	12
150	5
175	4
200	3

Using a complete sentence, state the general relationship between water depth and temperature. _____

