BLIZZARD BAG #2

Please complete the activity below. You will need to print out this activity sheet ***(pages 2-5 only)*** *OR Write out the answers on a separate piece of paper and graph on a piece of graphing paper. You will have 2 weeks to complete this assignment from the date it was assigned.*

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.

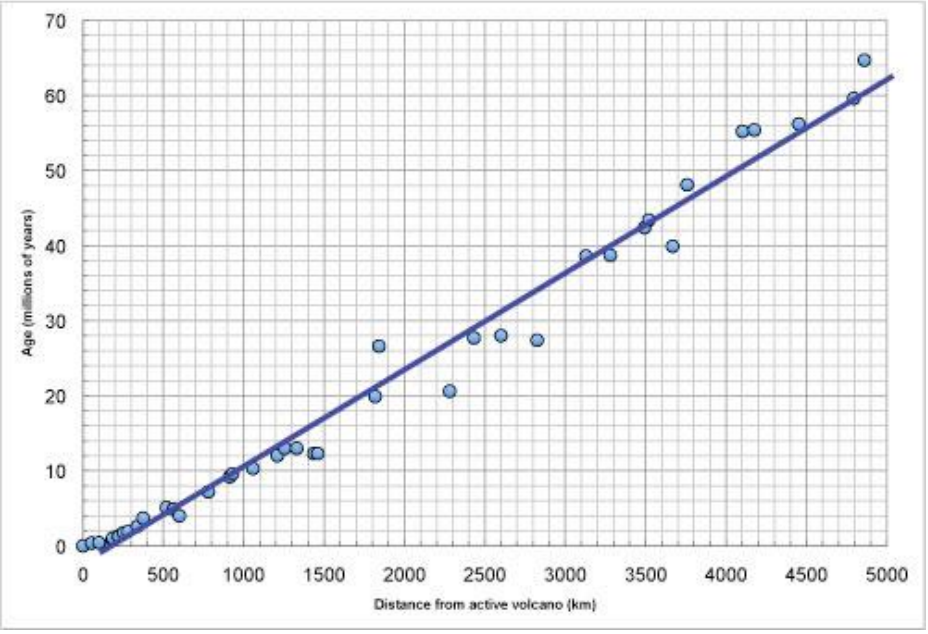
1.) **The Independent Variable:** this is the variable (part of the experiment that changes) that can be controlled or manipulated by the experimenter. This variable should be placed on the horizontal or x-axis.

2.) **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 y or vertical axis.

3.) **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, and will be dictated by the data points.

4.) **Plotting points:** Your points must be plotted in a thick dark mark ●.

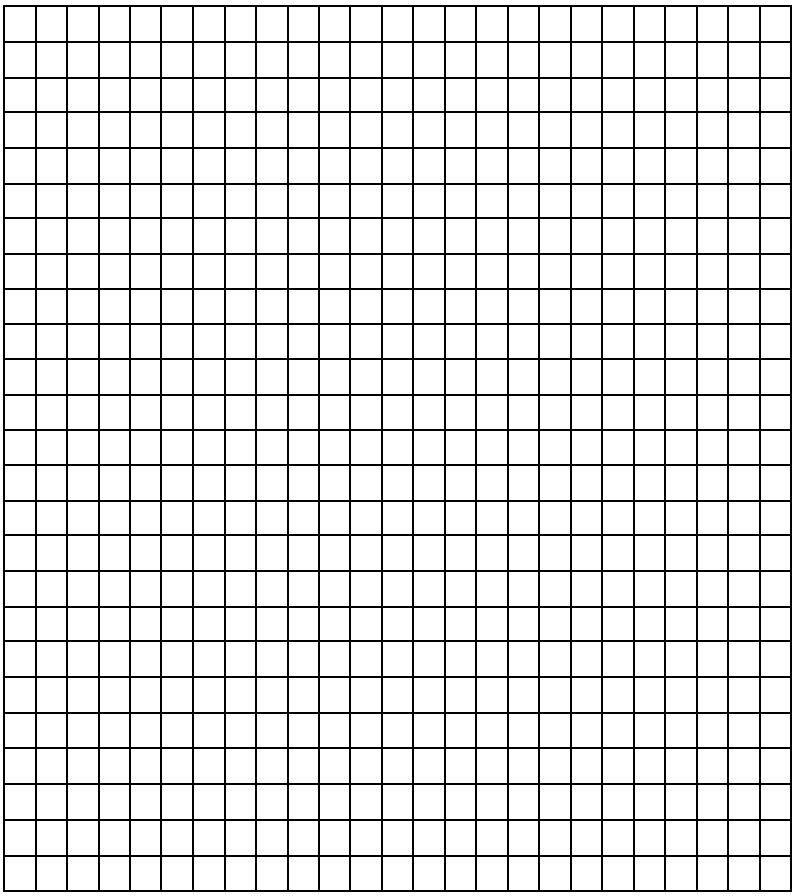
5.) **Drawing your line:** Draw a line of "best fit" unless it tells you to connect the points. A line of best fit may not go through all of the points on your graph but will come close to the points while going through some. See the example below for a line of best fit.



Graphing Set # 1 Name: _____ Blizzard Bag 2

Using the data table, construct a line graph on the grid provided. Remember to label the axes properly when setting up your scale, make a key, and plot your points in a thick dark point.

Depth in meters	Number of bubbles/min Plant A	Number of Bubbles/min Plant B
2	29	21
5	36	27
10	45	40
16	32	50
25	20	34
30	10	20



1. What is the independent variable? _____

2. Why is this the independent variable? _____

_____

3. What is the dependent variable? _____

4. Why is this the dependent variable? _____

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

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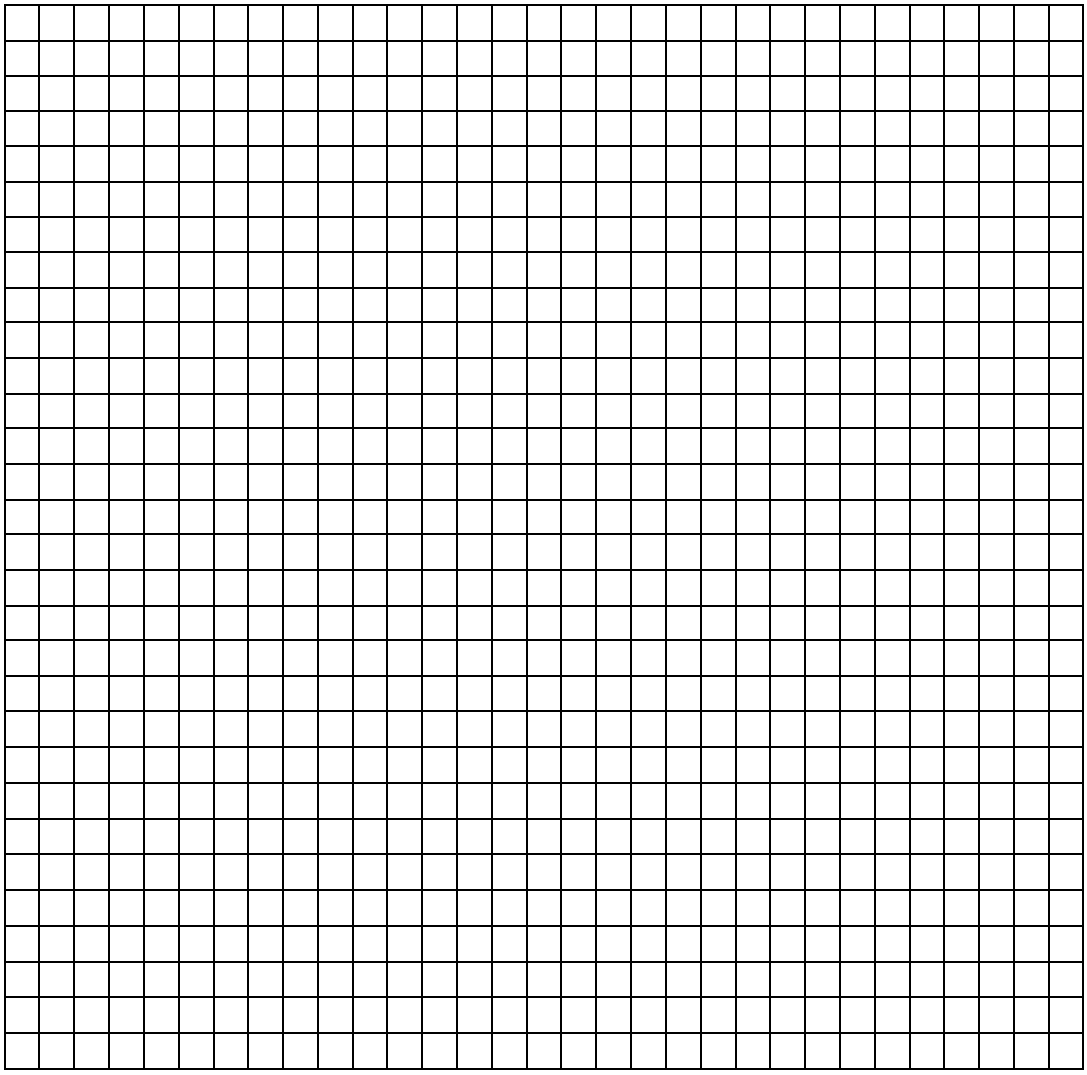
Graphing Set # 2

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.

Using the data table, construct a line graph on the grid provided.

Time After Eating (hrs.)	Glucose Level in ml/liter of blood in person A	Glucose Level in ml/liter of blood in person B
0.5	170	180
1	155	195
1.5	140	230
2	135	245
2.5	140	235
3	135	225
4	130	200



6. What is the independent variable? _____

7. Why is this the independent variable? _____

_____

8. What is the dependent variable? _____

9. Why is this the dependent variable? _____

_____

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

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

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

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

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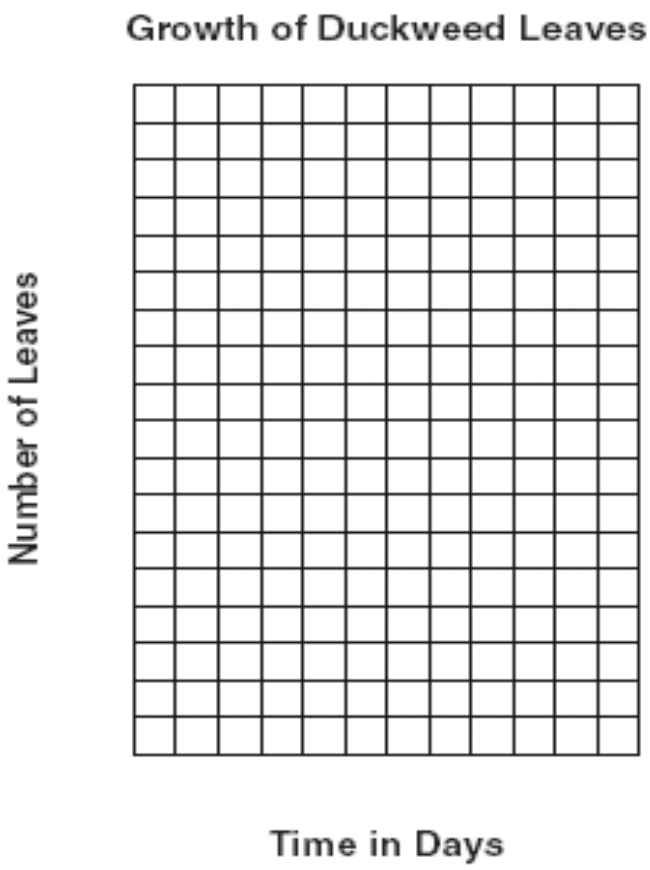
One more to go….

Graphing Set # 3

A student counted the total number of leaves in a group of duckweed plants over a 5-day period and recorded it in the table below. Using the data table, construct a line graph on the grid provided.

Growth of Duckweed Leaves

Time in Days	Number of Leaves
0	15
1	20
2	25
3	40
4	60
5	80



14. The time it takes for the number of leaves to increase from 15 to 30 is approximately (Circle your choice)

2.0 days 2.3 days 2.9 days 3.2 days

15. Using a complete sentence, state what would most likely happen to the production of oxygen by duckweed plants if the intensity and duration of exposure to light were increased.

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