

Chemistry Bell Work, January 22–26, 2018

Inquiry, Graphs, IV & DV, cause &
effect, hypothesis

1. Something occurring in nature experienced through our senses to obtain information is

- a. asking questions
- b. inductive reasoning
- c. defining a problem
- d. a natural phenomenon

2. An observation is

This is a process of watching an experiment and noting what occurs.

3. The process of making a prediction or forming an explanation based on previous knowledge or observations is

- a. a problem
- b. an inference
- c. a reasonable guess
- d. Inductive reasoning

4. What is data?

Factual information, usually measurements or observations.

5. Contrast qualitative and quantitative data.

Quantitative data is numerical information.

Example: the cup weighs 10.65 grams

Qualitative data is non-numerical information or descriptive information. Example: the paper towel is wet.

Chemistry, Bell Work, Tuesday, 1/23/18

1. What are variables?

Things that change (vary); the independent variable (IV) and the dependent variable (DV).

2. Which variable is the “I change / I control” variable?

- a. The independent variable (IV)
- b. The dependent variable (DV)

3. Which variable is the “depends on what I change or control” variable?

- a. The independent variable (IV)
- b. The dependent variable (DV)

4. What are constants or experimental controls?

Things that do not change. In a controlled experiment only the IV & DV change. Everything else is constant.

5. A hypothesis is

An explanation or prediction (educated guess) of how the independent variable affects the dependent variable.

6. What is the purpose of a data table

The purpose of data tables is to present information in a grid (grid = column and rows) that communicate the meaning of the data; the effect of the independent variable on the dependent variable.

7. Write a hypothesis for time and absorption experiment.

If the **submersion time** is Increased/ decreased
(independent variable) (explain how the independent is changed)

then the **absorption** will Increase/ decrease
(dependent variable) (explain how the dependent will change)

Chem, Bell Work, Wednesday, 1/24/18

1. The experimental group is

The experimental group is the part of an experiment that is deliberately changed. It includes the independent and dependent variable.

2. The Control group is

- a. the part of an experiment that includes the dependent variable.
- b. the part of an experiment that has an independent variable.
- c. the part of an experiment that is not changed.
- d. all the above.



3. Describe the experimental control (the control).

The experimental control is the part of an experiment that has no independent variable (IV) or no IV applied.

4. A judgment based on data gathered in an experiment is

- | | |
|------------------|--------------------|
| a. a skill | c. a hypothesis. |
| b. a conclusion. | d. an observation. |

Chemistry, Bell Work, Thursday, 1/25/18

1. All experiments have a cause and effect.

Which variable is the “cause” of the effect?

- | | |
|-----------------------------|----------------------|
| a. The independent variable | c. All of the above |
| b. The dependent variable | d. None of the above |

2. Which variable is the “effect”?

- | | |
|-----------------------------|----------------------|
| a. The independent variable | c. All of the above |
| b. The dependent variable | d. None of the above |

3. Identify the IV (circle it) and the DV (rectangle it) in the following: The Effect of Submersion Time on Absorption

4. Write a title for an experiment that relates the IV to the DV

The effect of _____ on _____
(the independent variable) (the dependent variable)

Chemistry, Bell Work, Thursday, 1/25/18

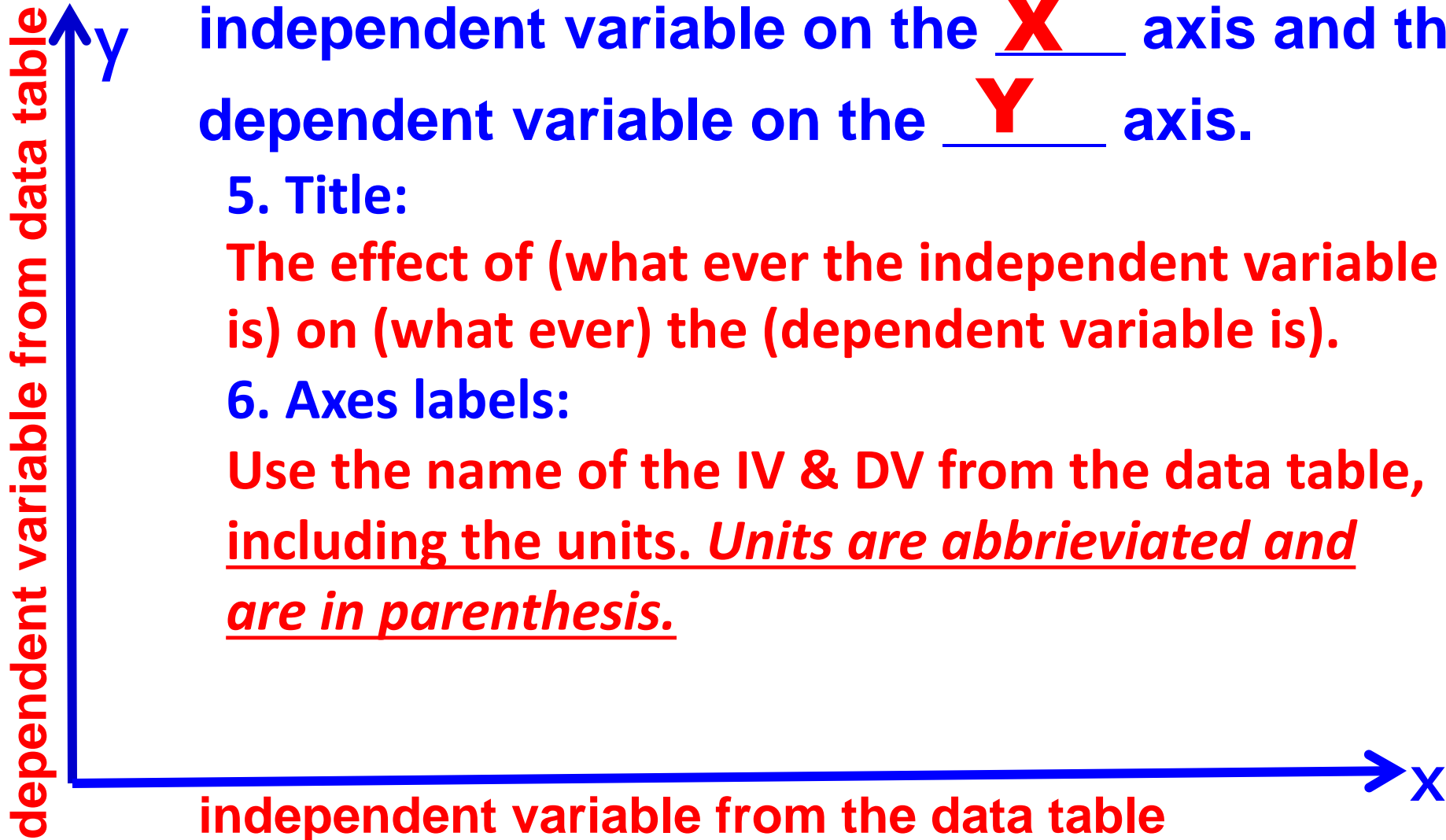
4. When constructing a graph, you should place the independent variable on the **X** axis and the dependent variable on the **Y** axis.

5. Title:

The effect of (what ever the independent variable is) on (what ever) the (dependent variable is).

6. Axes labels:

Use the name of the IV & DV from the data table, including the units. *Units are abbreviated and are in parenthesis.*





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