

**Vocab:** Match each vocabulary term with the appropriate definition

- |                                      |                                                                                                                                                     |
|--------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| ___1 <b>Quantitative Observation</b> | A. The variable that the scientist has control over or chooses to change in the experiment                                                          |
| ___2 <b>Qualitative Observation</b>  | B. A living organism that is made up of only one of cell                                                                                            |
| ___3 <b>Inference</b>                | C. A cell that does not contain a nucleus                                                                                                           |
| ___4 <b>Hypothesis</b>               | D. The smallest, most basic unit of a living organism                                                                                               |
| ___5 <b>Independent Variable</b>     | E. Data/information that you collect using your five senses. Can be counted or measured.                                                            |
| ___6 <b>Dependent Variable</b>       | F. The variable that is being measured in an experiment                                                                                             |
| ___7 <b>Constants</b>                | G. A living organism that is made up of many cells                                                                                                  |
| ___8 <b>Control Group</b>            |                                                                                                                                                     |
| ___9 <b>Homeostasis</b>              | H. Data/information that you collect using your five senses. Cannot be counted or measured.                                                         |
|                                      | I. A living organism’s ability to respond to changes in conditions in order to regulate and maintain certain vitals (heart rate, temperature, etc.) |
| ___10 <b>Cell</b>                    | J. A cell that does have a nucleus                                                                                                                  |
| ___11 <b>Adaptation</b>              | K. A living organism that needs to eat/consume other organisms to get energy                                                                        |
| ___12 <b>Unicellular</b>             | L. Variables that are kept the same in an experiment.                                                                                               |
| ___13 <b>Multicellular</b>           | M. A living organism that can make its own food energy.                                                                                             |
| ___14 <b>Prokaryote</b>              | N. A conclusion that you can make based on your observations and prior knowledge.                                                                   |
| ___15 <b>Eukaryote</b>               | O. The group that you compare your results to; the group that did not get any “special treatment”.                                                  |
| ___16 <b>Autotroph</b>               | P. Living things can adapt a trait that is better suited for their environment through evolution over a long period of time.                        |
| ___17 <b>Heterotroph</b>             | Q. An educated guess about how you think one variable will affect the other in an experiment.                                                       |

**Lab Safety:** Know basic lab safety practices

**Observations vs. Inferences**

- Write observations and inferences for the picture below:



Quantitative Observation:
Qualitative Observation:
Inference:

### **Scientific Method and Experimental Design**

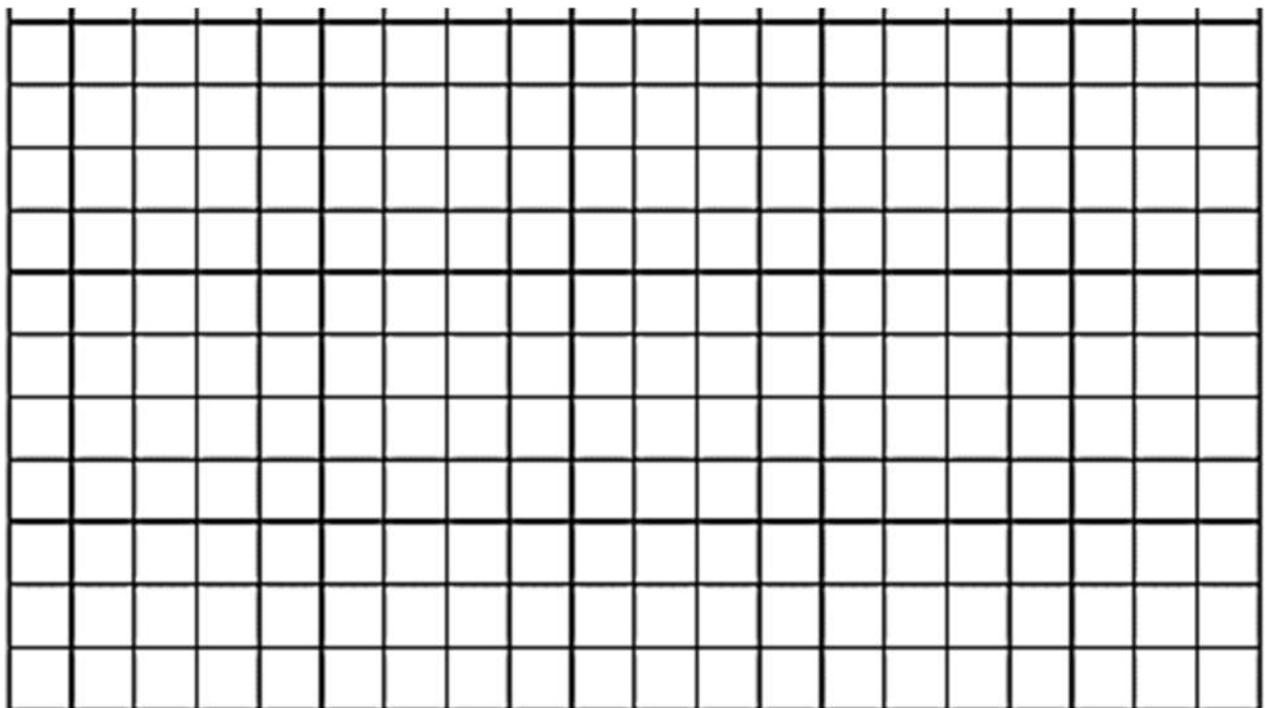
A student studied the effect of gibberellin (a plant hormone) on the growth of corn seedlings of the same height and species. A different concentration of gibberellin hormone in a fixed volume of water was applied to 7 groups of 10 plants. Each group was maintained under the same environmental conditions for the duration of the experiment. At the end of this period, the height of each plant was measured.

1. What is the scientific question being investigated?
2. Come up with a possible hypothesis for this experiment
3. What is the independent variable in this experiment?
4. What is the dependent variable?
5. Which trial serves as the control group? Why?
6. What were some variables that were held constant?

7. Graphing the data:
  - a. Write an appropriate title for this graph
  - b. Mark an appropriate scale on and label each axis appropriately.
  - c. Plot the data on the grid

**Data Table**

<b>Micrograms of Gibberellin in a Water Solution</b>	<b>Average Height (cm)</b>
0.00	20
0.05	40
0.10	60
0.25	70
0.50	75
1.00	80
2.00	80



8. After plotting and analyzing the data, what should the conclusion be?

## Characteristics of Living Things

- What are the 7 characteristics of living things?

## Homeostasis

- Give an example of how homeostasis is maintained in your body

## Classification of Organisms

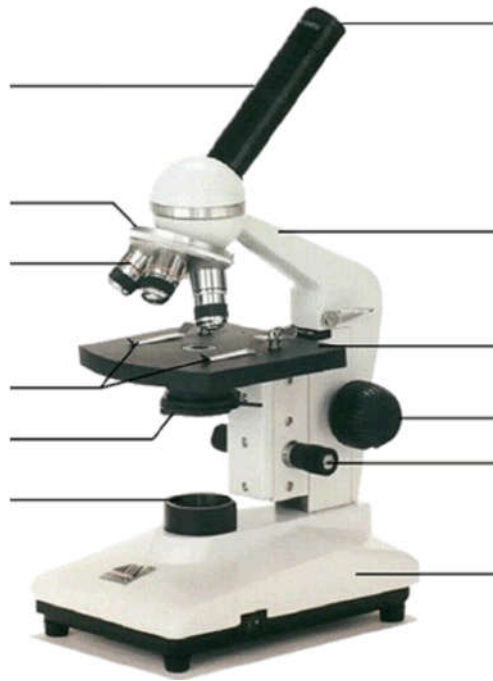
- What are the different taxonomies, from most general to most specific? Hint: kingdom is one of them.
- The scientific name consists of the \_\_\_\_\_ and \_\_\_\_\_
- Complete the following chart

<b>Domain</b>	<b>Kingdom</b>	<b>Cellular Organization</b> (Unicellular or Multicellular)	<b>Type of Cells</b> (Prokaryotic or Eukaryotic)	<b>Energy Source</b> (Autotroph or Heterotroph)	<b>Example</b>
Eukarya	<b>Animalia</b>				
	<b>Plantae</b>				
	<b>Fungi</b>				
	<b>Protista</b>				
Archaea	<b>Archaeobacteria</b>				
Bacteria	<b>Eubacteria</b>				

## Microscope Use

- Assume the ocular lens (eyepiece) is 10x.
  - a. If the magnification of objective lens was 4x what is the total magnification?
  - b. If the magnification of the objective lens was 50x, what is the total magnification?
- Why is it important to start at the lowest power objective lens?
- What is the only adjustment knob that should be used at the highest magnification?
- When should the diaphragm be used?

- Label the parts of the microscope



**Dichotomous Keys**

- Use the following dichotomous key to identify the name of the emojis

- Teeth visible .....go to 2  
 ....Teeth not visible .....go to 4
- Has a wide, toothy smile .....*Smilus toothyus*  
 ....Is not smiling .....go to 3
- Visibly crying .....*Smilus dramaticus*  
 .... Frowning .....*Smilus upsettus*
- Eyes are symmetrical .... go to 5  
 ....Eyes not symmetrical .....go to 8
- Eyes shaped like hearts .....  
 ....Eyes are shaped as ovals .....go to 6
- Smiling, happy face ..... *Smilus traditionalis*  
 ....Not happy, frowning or other .....go to 7
- Mouth curved down, frowning .... *Smilus saddus*  
 .... Mouth is a small circle .....*Smilus suprisus*
- Has a pirate eye patch .....*Smilus piratus*  
 ....Does not have eye patch ..... go to 9
- One eye is much larger than the other eye ..... *Smilus mutatus*  
 One eye is winking .....*Smilus winkus*

