Unit 1, Lesson 3 Vocab and Notes

I. What are types of data?

1. There are two general types of data:
   1. Quantitative Data- data that can be **measured**- uses numbers
      1. Ex: A book is 10 inches x 8 inches and weighs 1 lb.
   2. Qualitative Data- descriptive data that cannot be measured. Ex: colors, textures, smells, and tastes
      1. Ex: A book is hard and is blue and orange.
2. Description and Explanation
   1. Description- summary of observations. Explains what, NOT WHY.
      1. Ex: The butterfly has wings.
   2. Explanation- an interpretation of observations.
      1. Ex: The butterfly can fly because it has wings.
3. Precision and Consistency
   1. Precision- how close repeated measurements are to each other
   2. Consistency- the ability to repeat a task with little variation

II. How do scientists collect data?

1. Scientists use many different tools to collect data.

III. How do scientists communicate data?

1. Scientists use graphs, tables, and statistics to communicate data.
2. Statistics:
   1. Mean- the mean of a set of data is the sum of the numbers in a data set divided by the number of entries in the data set.

It is easy to calculate: **add up** all the numbers, then **divide** by how many numbers there are.

Example: What is the Mean of these numbers? 6, 11, 7

Step #1: Add the numbers: 6 + 11 + 7= 24

Step #2: Divide by how many numbers (there are 3 sets): 24/3=8

Step #3: The Mean is 8

* 1. Median- the middle number in a set of data when they are arranged in numerical order

Example: What is the Median of these numbers? 6, 11, 7

Step #1: Place the numbers in numerical order: 6, 7, 11

Step #2: Find the number in the middle 6, 7, 11

Step #3: The Median is 7.

* 1. Range-the range is the difference between the highest and lowest number

Example: What is the Range of these numbers? 6, 11, 7

Step #1: Place the numbers in the numerical orders: 6, 7, 11

Step #2: Subtract the smallest number from the largest: 11-6=5

Step #3: The Range is 5.

* 1. Mode- the number that appears the most.

Example: What is the Mode of these numbers? 6, 11, 7, 6

The mode is 6 because it is the number that appears the most.

IV. How can we stay safe in the lab?