# Experimental Design

This concept will be integrated throughout the year – refer to these notes when needed

**(**Write just the underlined parts)**

- **HYPOTHESIS**
  - **your prediction before you change a variable**
  - **IF (IV) , THEN (DV) .**
- Ex:
  - If I add food coloring to the applesauce, then my students will choose the colored applesauce over the regular applesauce.

- **Ex (1):**
  - **If a paper clip is added to the nose of the plane, then it will fly farther. (or increasing the weight of the nose.**

- **Control**
  - **an unchanged object used in an experiment to detect and measure the effects of hidden variables.**
- Ex: 
  - regular applesauce
- **Ex (1):**
  - **the original plane you fly without paperclips.**

- **Trial:**
  - **each time you do an experiment; each time you collect data.**
- Ex: 
  - each one of my students, 32 trials.
- **Ex (1):**
  - **each time you throw the plane.**

- **Variable:**
  - **each change in the experiment, the thing you change "manipulate"**
- Ex :  
  - the different colors of the applesauce.
- **Ex (1):**
  - **number of paperclips, or the weight of the plane is a variable.**

**Independent Variable:**

- **a variable is purposely changed in an experiment.**

- Ex :
- the color.

- **Ex (1):**
- **the number of paper clips.**

- **Dependent Variable:**
  - **the thing that changes because of the independent variable.**
- Ex :

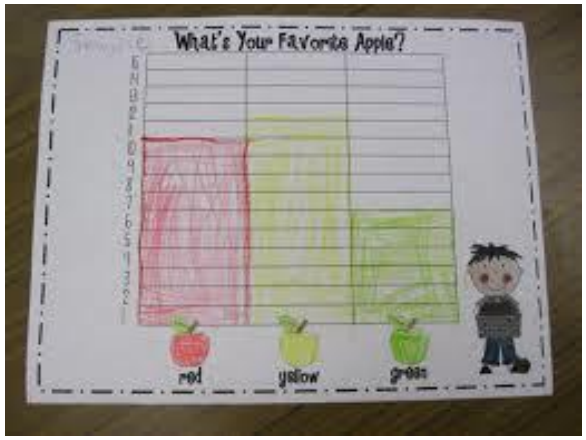
  - the “frequency” of the color that is chosen.
- **Ex (1):**
  - **the distance.**

- **Constant**
- Ex :

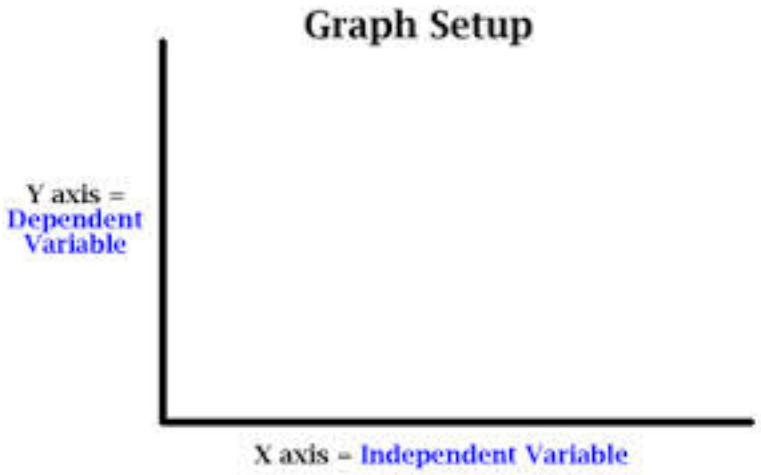

- **Ex (1):**

- **all the factors that remain the same through out the experiment.**
- the type/amount of applesauce, the cup, portion, temperature…
- **the paper, size of paper clip, wind, throw, environmental conditions.**

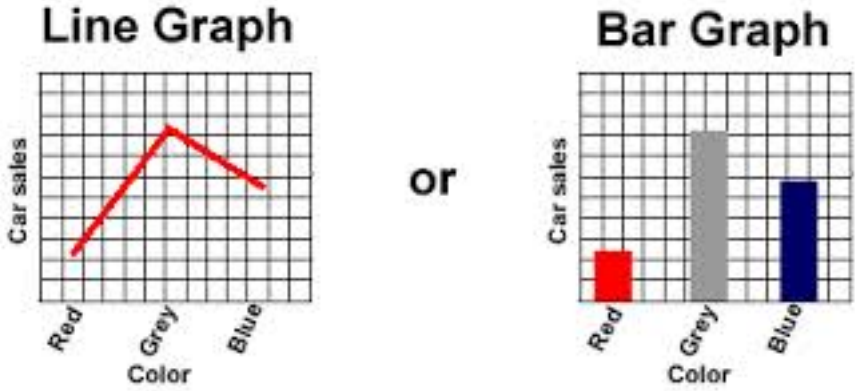
- Data Table




- independent variable on the x-axis,
- dependent variable on the y-axis.



# What type of graph?????




The graph may look something like this-. Line and bar graph. Which one is correct? The bar graph is correct because the IV is non-numerical.