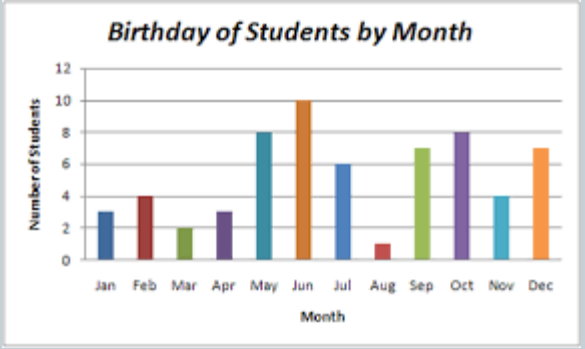
Graphing

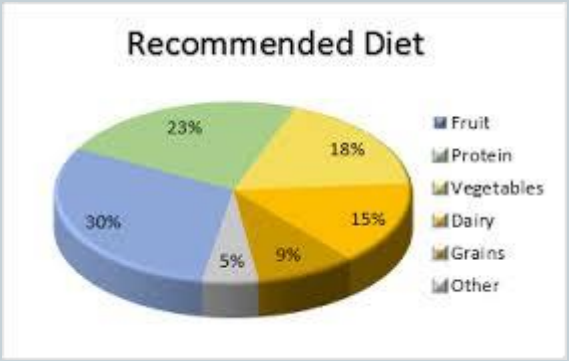
Importance of Graphs ?

- **A graph is a picture of your data**



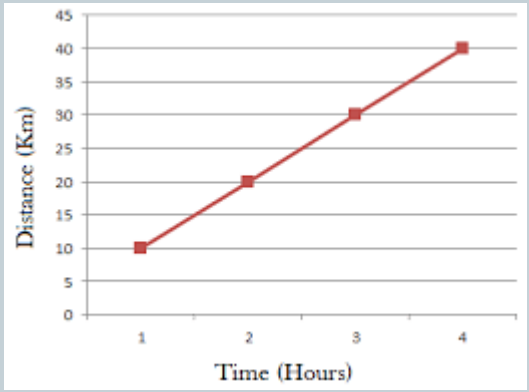
There are three types of graphs:

1. **bar graph**
2. **line graph**
3. **Circle (pie) graph**



Data

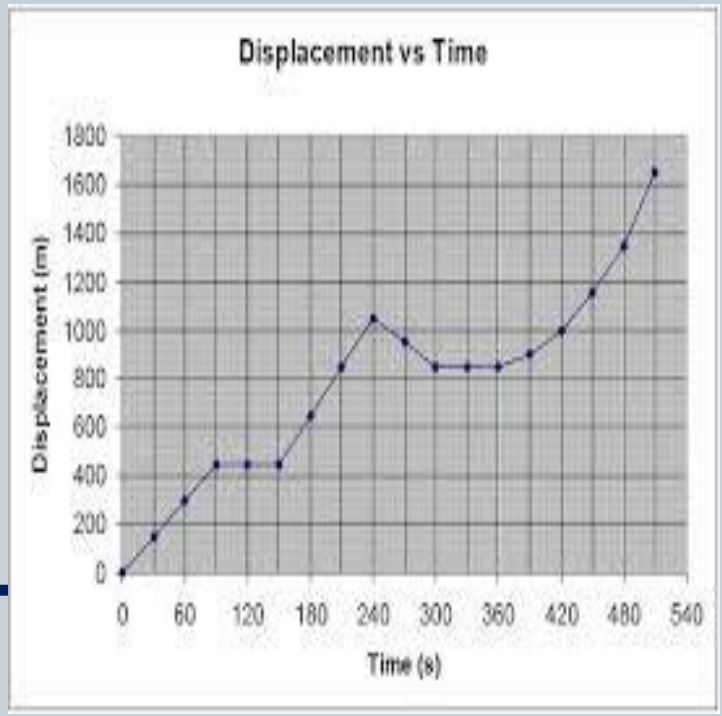
- **Individual facts, statistics, or items of information.**
- **Generated from experiment, observation or research**



Independent vs. Dependent

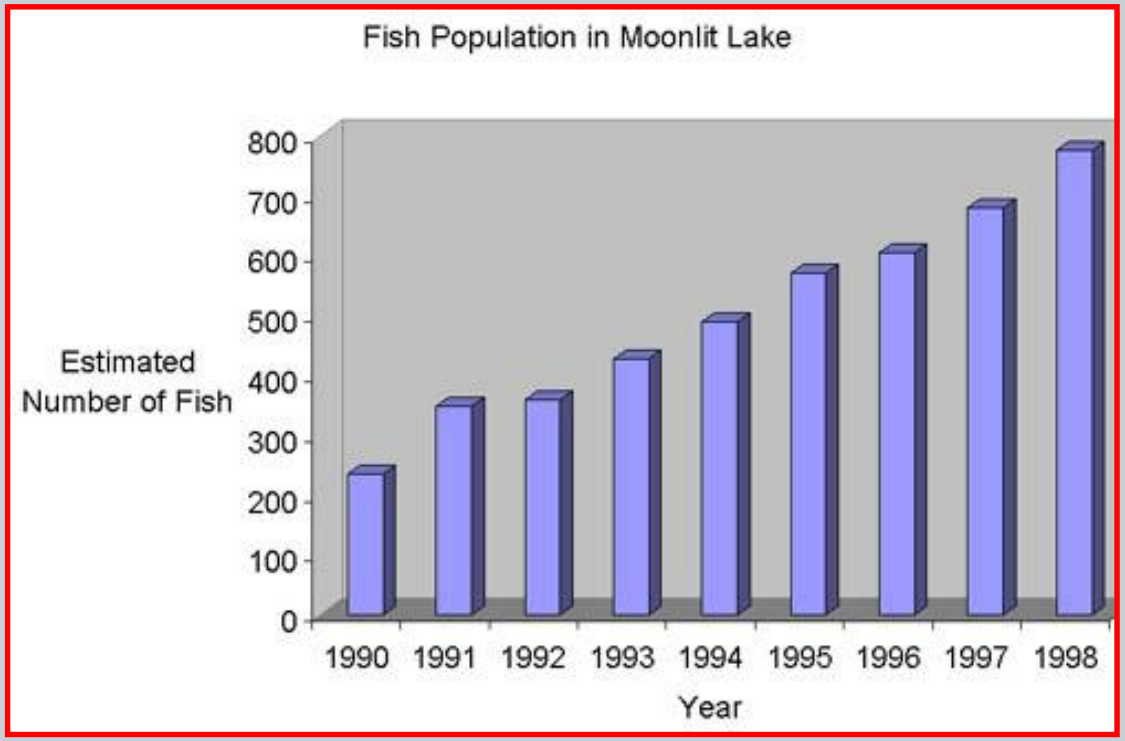
- In an experiment, the variable that YOU change is the **Independent Variable**
- The variable that you measure is the **Dependent variable**
- Example: How far can you run in 10 mins.

Dependent Variable



Independent Variable

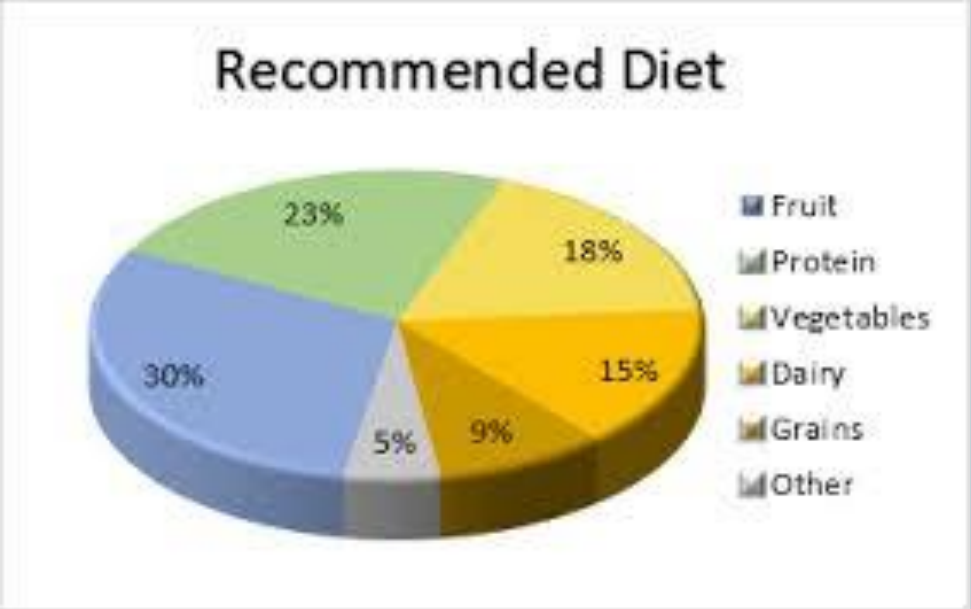
Bar Graph



- Shows information collected by counting.

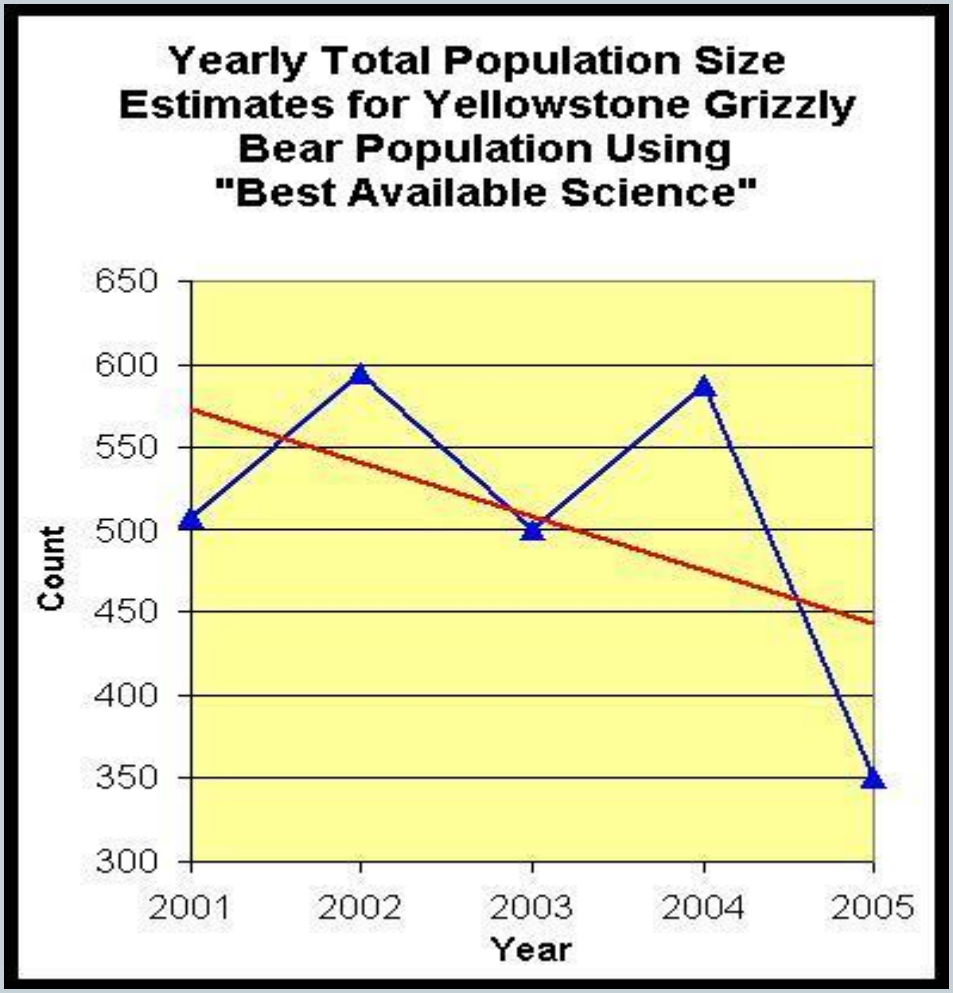
Pie Chart (Circle Graph)

- A circular chart that illustrates relative magnitudes or frequencies (Example Percentages)



Line Graph

- Used to show relationships, such as rates.
- Changes over time or given variable.

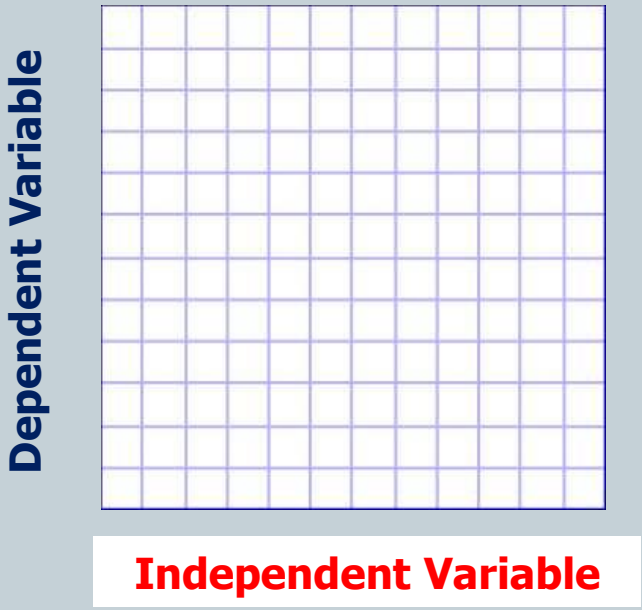


Graphing Procedure

1. Write the title above the graph
   - **Dependent** vs **Independent**

2. Label the axis (sides of the graph)
   - Dependant on y-axis (vertical)
   - Independent on x –axis (horizontal)
   - Include units

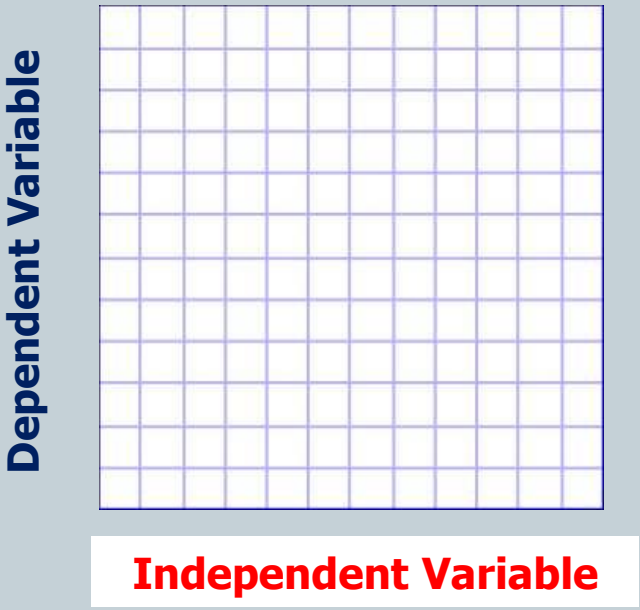
Title: Dependent vs Independent



Graphing Procedure

3. Find the range of each axis
   - Y-axis: using the data for the dependent variable, subtract the smallest number from the larger number
   - X-axis: do the same using the independent data
4. Find the scare of each axis
   - Divide the range by the number of spaces on the that axis
   - Round up to the best number
   - Number the lines on the graph (don't have to do every line)

Title: Dependent vs Independent

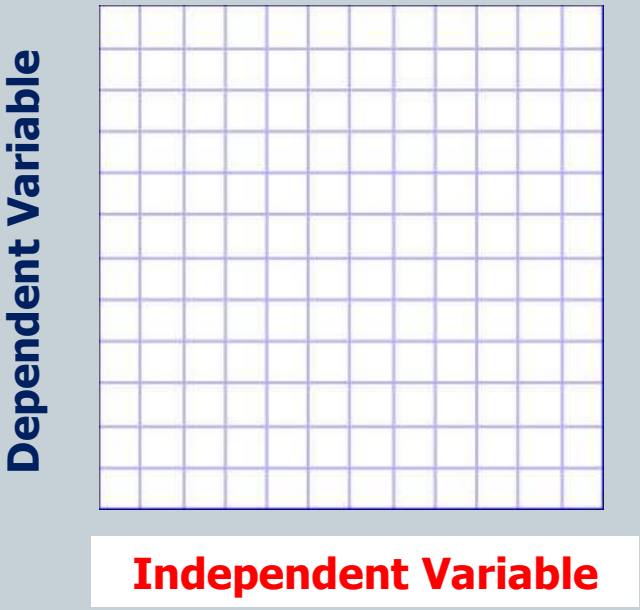


Graphing Procedure

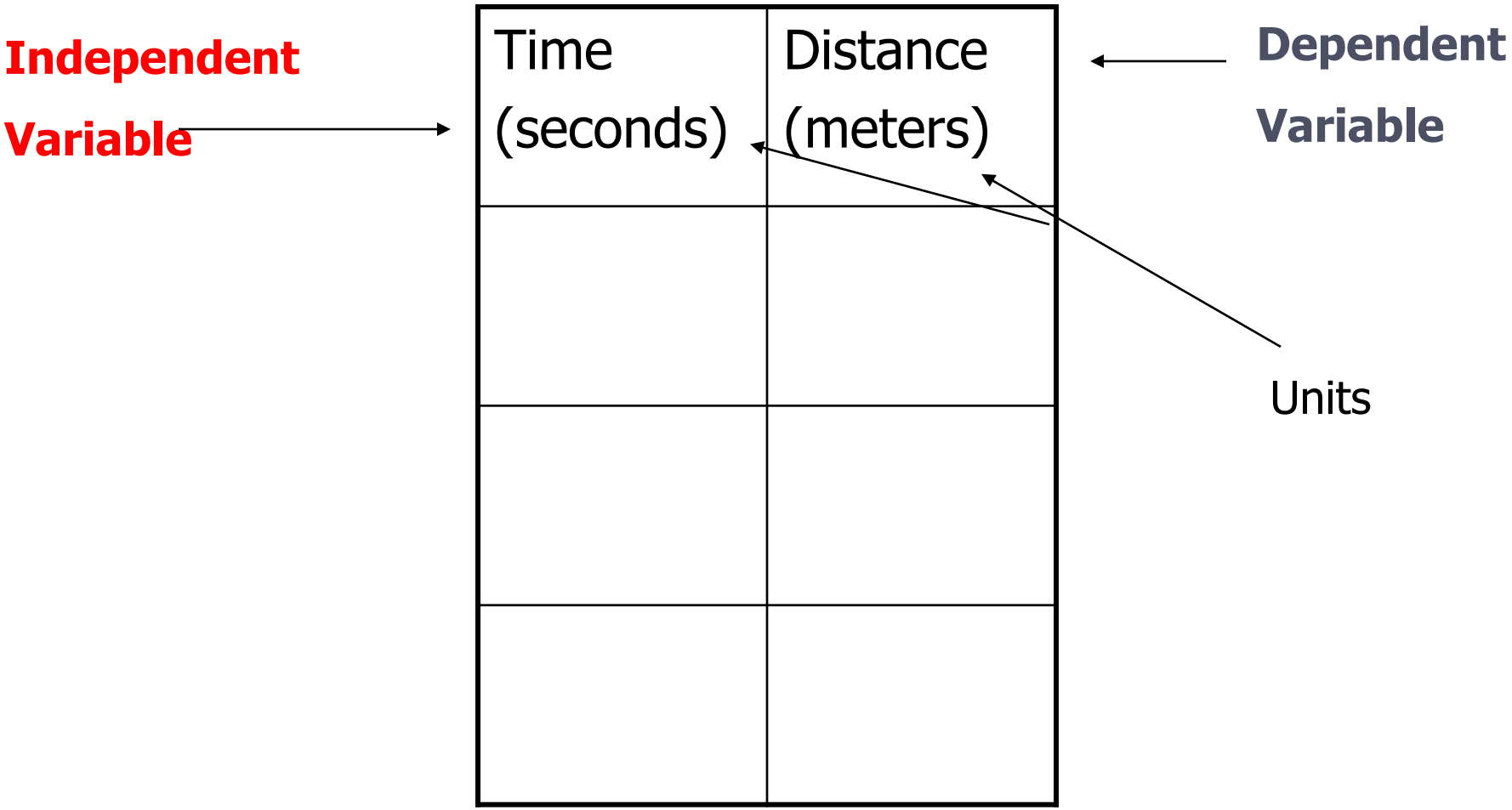
5. Plot points
   - Circle or place an “X” over each point (this allows points to be found after a line has been drawn through them

6. Draw “best fit” line when data appears in a straight line (use a ruler to make sure its straight)
   - Connect all points when data appears in a curved line

Title: Dependent vs Independent



Data Tables


Independent Variable
Time (seconds)
Distance (meters)
Dependent Variable
Units