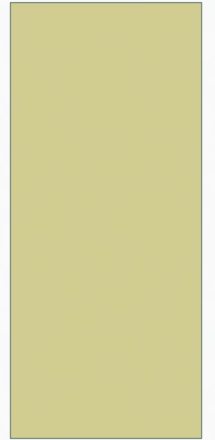# GRAPHING AND WHY IT'S IMPORTANT

GRAPHS

- Graphs are a visual representation of different types of data

- Graphs are used to show trends, relationships, and correlations between variables

- Graphs can show us a lot of information in a small picture

TYPES OF GRAPHS

- **Bar Graph** – shows comparisons between things

- **Pie/Circle Graph** – shows percent of 100. All pieces of the pie must equal to 100%

- **Line Graph-** shows trend over time. If there is time (secs, mins, hours, days, months, years) then it is conveyed in a line graph most of the time
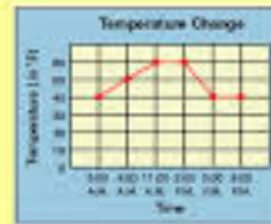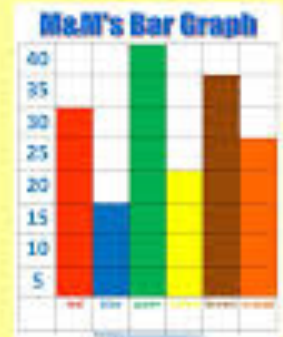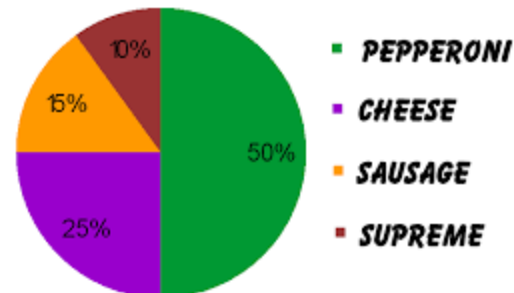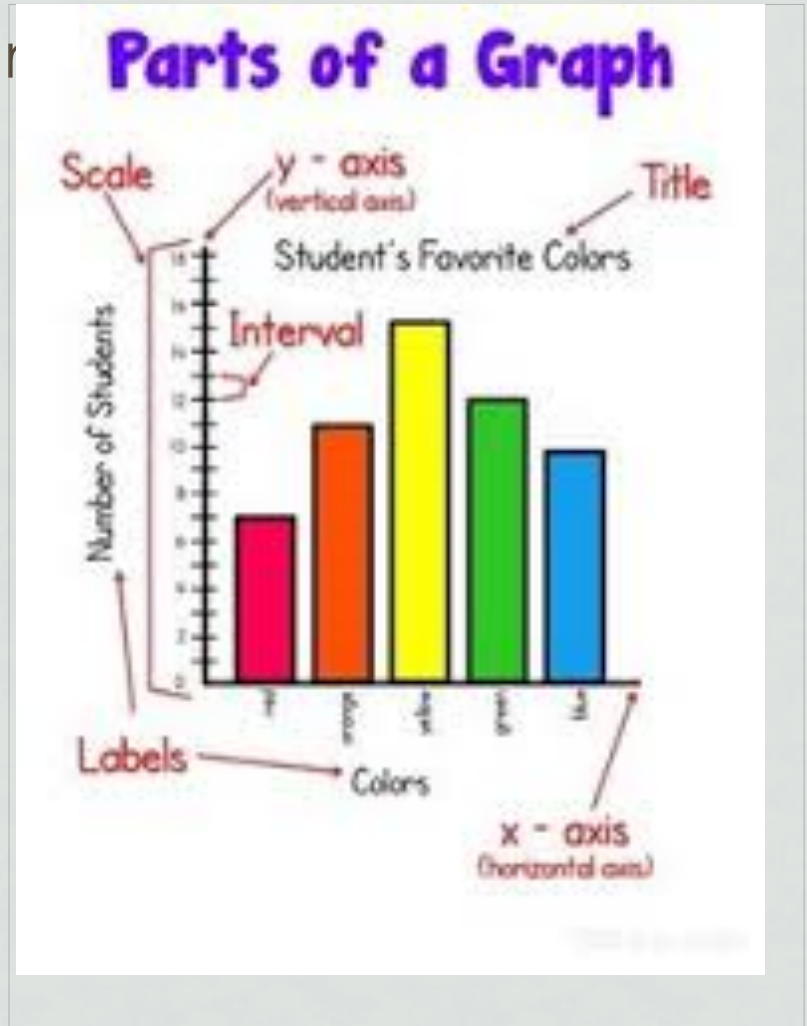
PARTS OF A GRAPH

- All graphs have at least 4 n
1. Title
2. X-axis Label
3. Y-axis Label
4. Scale

- Some graphs also have
5. Key

TITLE

- The title should tell the reader what kind of information they are going to see on the graph

- The title of a graph should contain the two variables that the graph is about

- Titles are **NOT**: Silly, too long, have nothing to do with the information on the graph

- When in doubt follow this form:
- The effect of (Independent Variable) on (dependent variable)
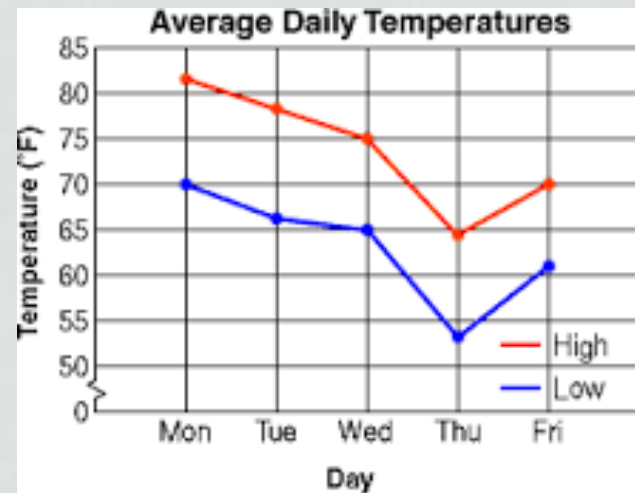- Or: (Independent variable) vs (dependent variable)

Other hints: If there is already a data chart with a title that you are making a graph for, use that title for your graph!

TITLE EXAMPLES
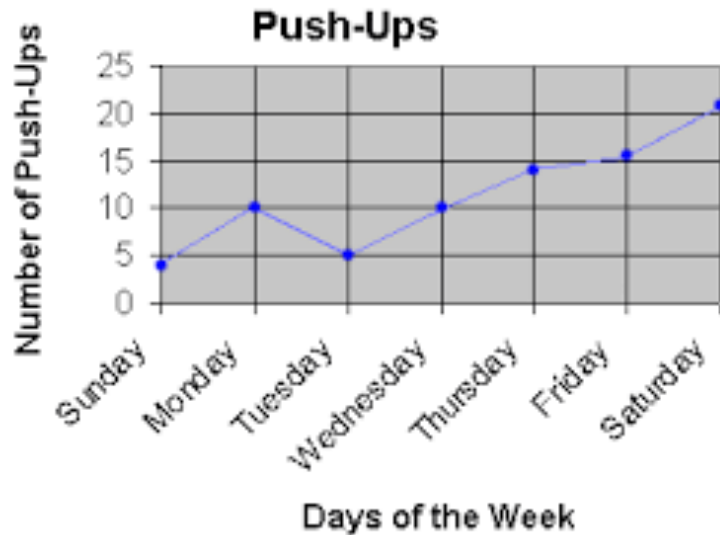
Push-ups vs Day of the Week
Or
Number of push-ups per day

Day vs Temperature
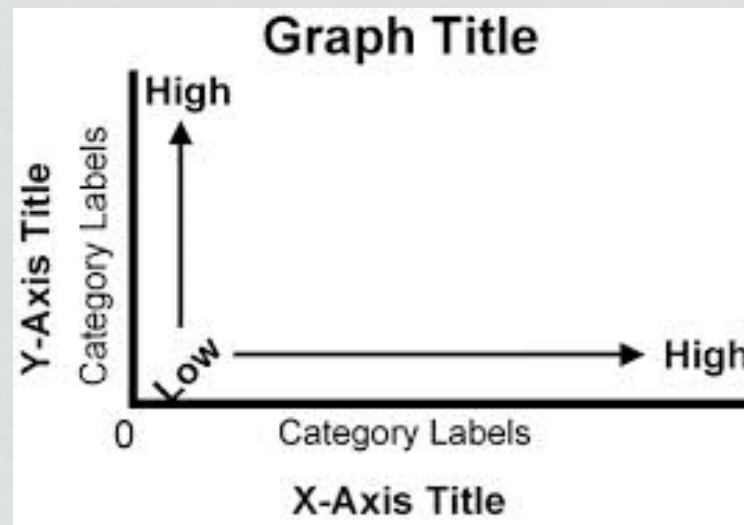Or
How days affect Temperature

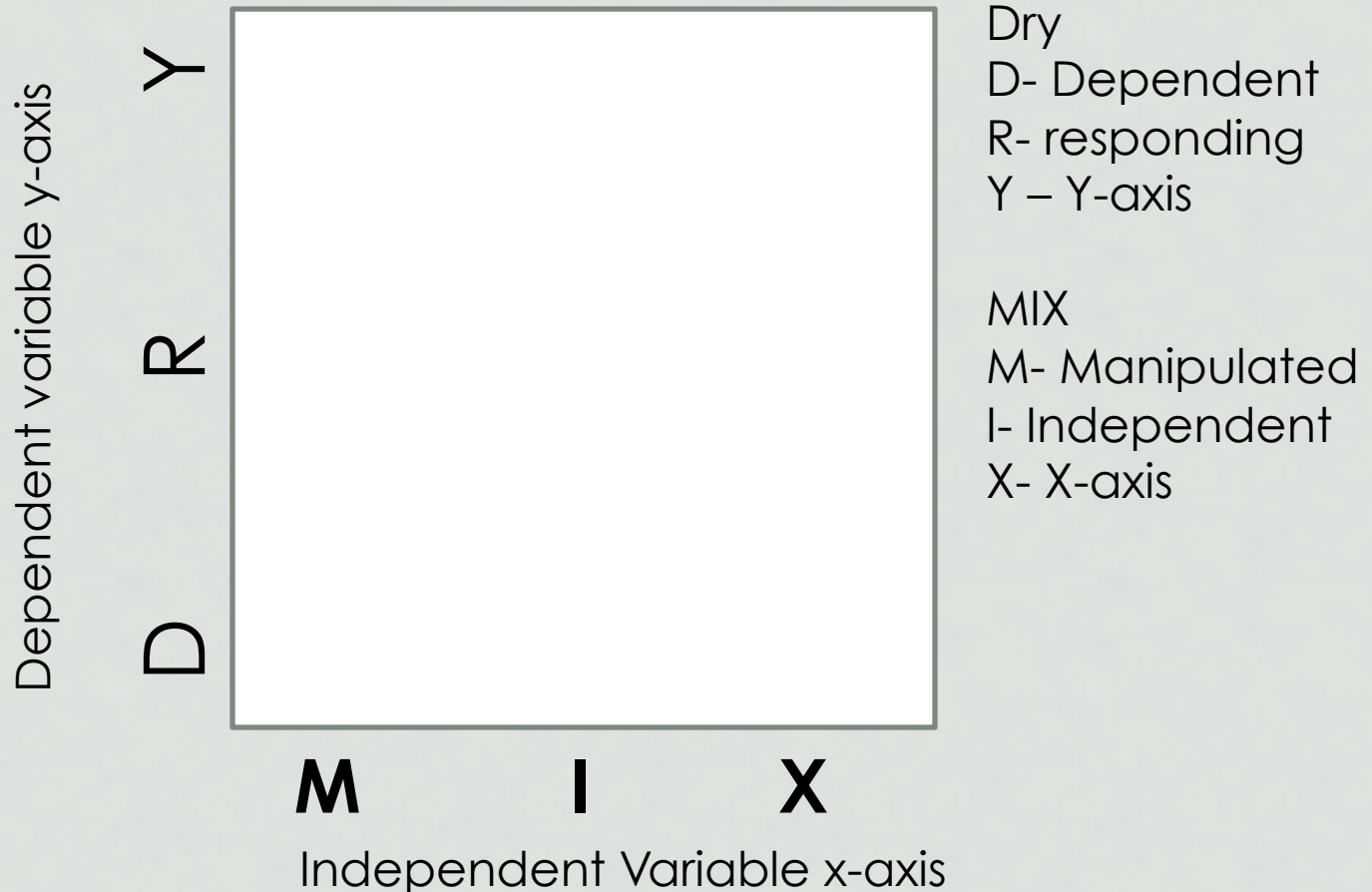# X-AXIS LABEL AND Y-AXIS LABEL

X-axis – Bottom

- The x-axis is always where the independent variable is labeled

Y-axis - Side

- The y-axis is always where the dependent variable is labeled

INDEPENDENT/ DEPENDENT VARIABLE ON A GRAPH

Dry
D- Dependent
R- responding
Y – Y-axis

MIX
M- Manipulated
I- Independent
X- X-axis

Dependent variable y-axis

D R Y
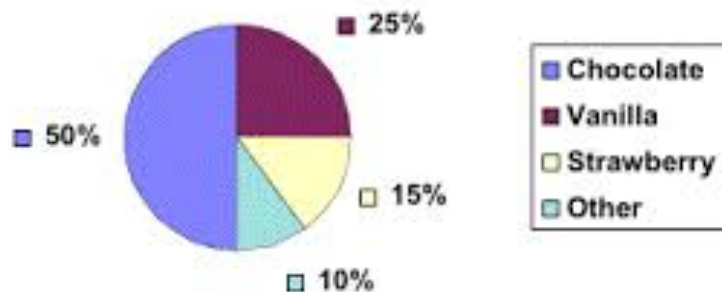
M I X

Independent Variable x-axis

SCALE/ UNIT

- The scale is the numbers we go by to make the graph accurate

- Tips*
- Always pick the smallest number that will fit on the graph
- Your scale should be easy to interpret.
- One square or tic mark could represent 1, 2, 5, 10, …
- A graph unit represents a unit of 1, 10, 20, 100, 0.1.
- The scale should NOT change along an axis.
- Your data should NOT be clumped in one region of your graph; you
- should scale your graph so that your data is distributed across each
   axis.

KEY

- Sometimes a key is used to tell the reader what the colors or symbols represent on a graph
- If you use multiple colors or symbols, a key should be made