

GRAPHS

How to set up successful graphs in
Chemistry!

▣ **What's a variable?**

Something that can change (vary) during an experiment.

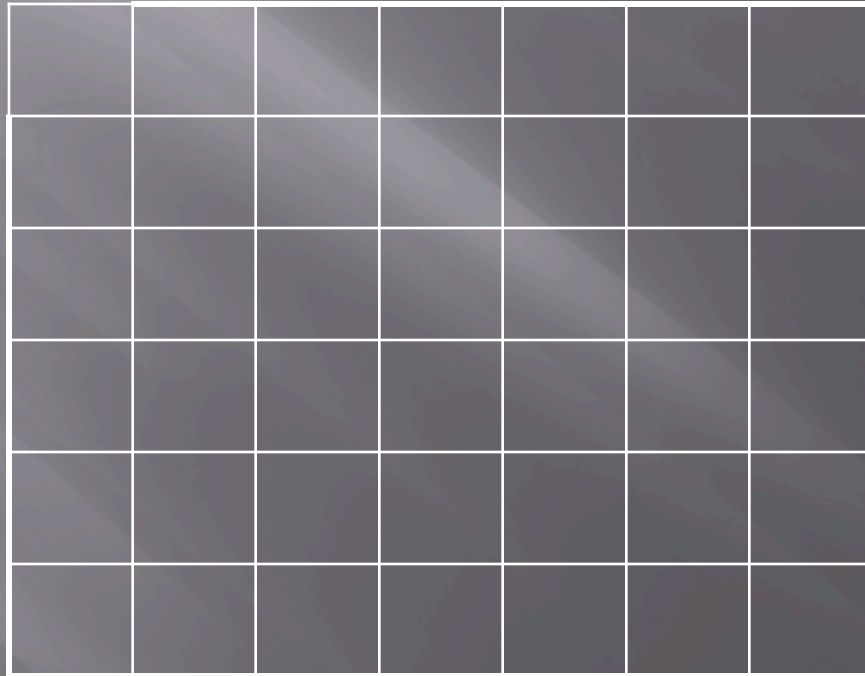
▣ **Independent variable:**

- ▣ It is what the experimenter changes. Example: the time data is measured. It is plotted on the x-axis.

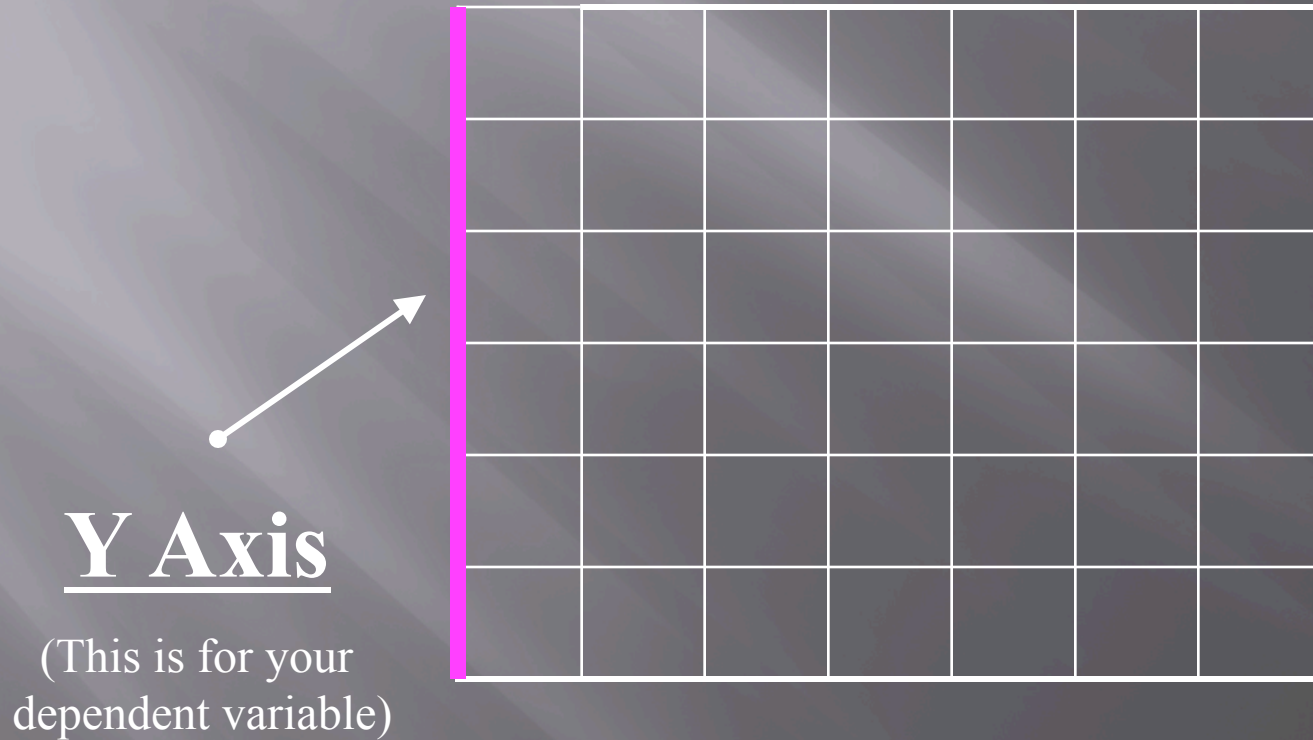
▣ **Dependent variable :**

- ▣ Depends on the independent variable. What the experimenter measures. Example: size of plant at a given time. It is plotted on the y-axis.

How to set up your graph!



How to set up your graph!



How to set up your graph!



X Axis

(This is for your
independent variable)

TAILS

Teachers's Favorite Singer

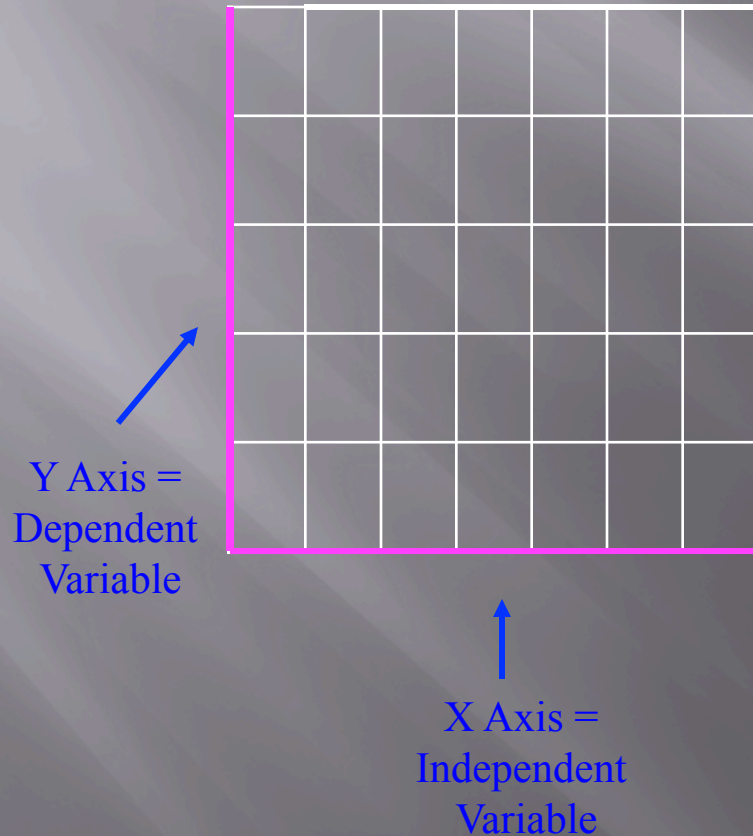
T - Title

TAILS

Teachers's Favorite Singer

T - Title

A - Axis



TAILS

Teachers's Favorite Singer

Decide on an appropriate scale for each axis.

Choose a scale that lets you make the graph as large as possible for your paper and data

T - Title

A – Axis

S – Scale

How to determine scale

Favorite Singer	Number of Teachers
Toby Keith	22
Madonna	15
Elvis	11
Sting	5
Sinatra	2

- ▣ Scale is determined by your highest & lowest number.
- ▣ In this case your scale would be from 2 – 22.

How to determine Intervals

Favorite Singer	Number of Teachers
Toby Keith	22
Madonna	15
Elvis	11
Sting	5
Sinatra	2

- ▣ The interval is decided by your scale.
- ▣ In this case your scale would be from 2 – 22 and you want the scale to fit the graph.
- ▣ The best interval would be to go by 5's.

TAILS

Teachers's Favorite Singer

The amount of space between one number and the next or one type of data and the next on the graph.

The interval is just as important as the scale

Choose an interval that lets you make the graph as large as possible for your paper and data

T – Title

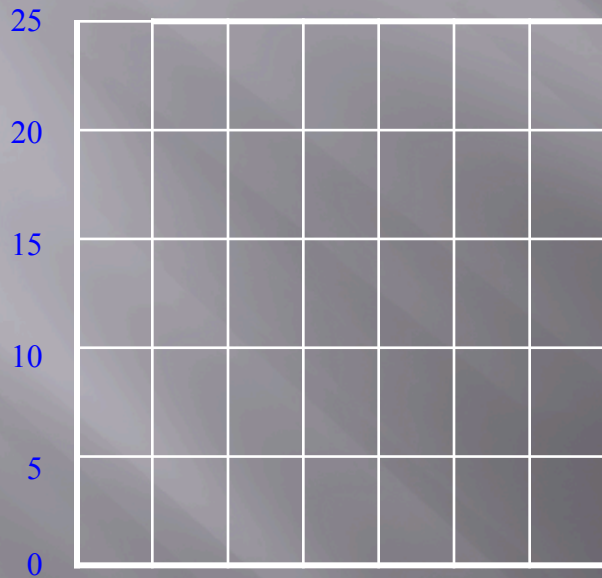
A – Axis

I – Interval

S – Scale

TAILS

Teachers's Favorite Singer



T – Title

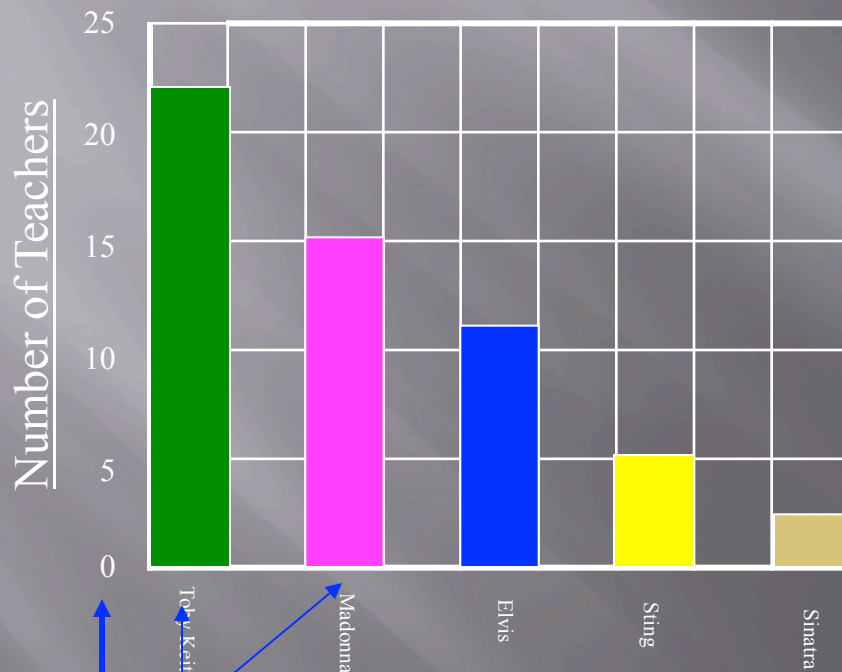
A – Axis

I – Interval

S – Scale

TAILS

Teachers' Favorite Singer



LABEL your bars of Singers

data points

What do these bars represent?
What do these numbers mean?

T – Title

A – Axis

I – Interval

L – Labels

S – Scale

When to use...

▣ Bar graphs

- Used to show data that are not continuous.
- Allows us to compare data like amounts or frequency or categories
- Allow us to make generalizations about the data
- Help us see differences in data

▣ Line Graphs

- For continuous data
- useful for showing trends over time

Scatter Plot

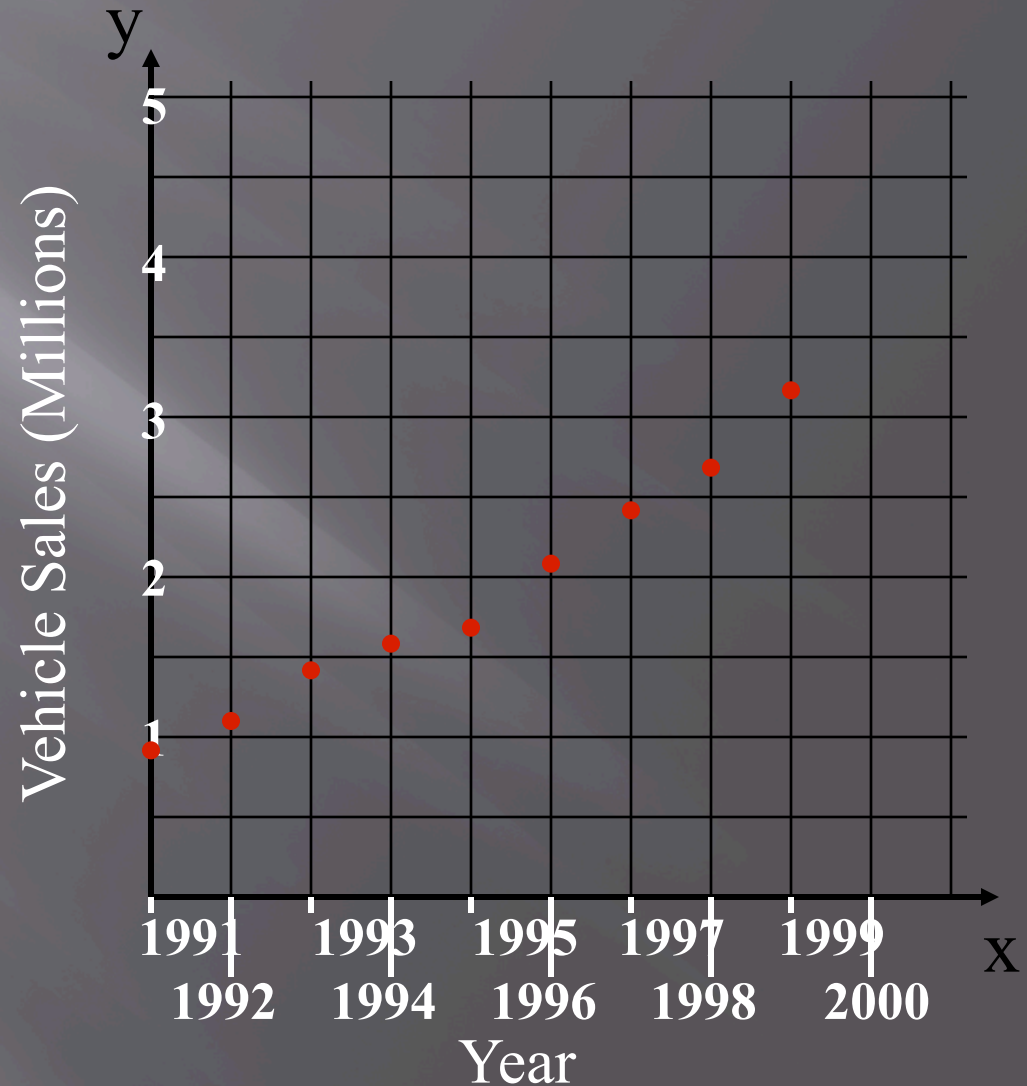
- ▣ A scatter plot is a graph of a collection of ordered pairs (x,y) .
- ▣ The graph looks like a bunch of dots, but some of the graphs are a general shape or move in a general direction.
- ▣ **HINT HINT WINK WINK:** the type of graph you will be using



Sport Utility Vehicles Sales in the U.S.

Sport Utility Vehicles (SUVs) Sales in U.S.

Year	Sales (in Millions)
1991	0.9
1992	1.1
1993	1.4
1994	1.6
1995	1.7
1996	2.1
1997	2.4
1998	2.7
1999	3.2



To extrapolate to data points your graph does not have

- ▣ Make a line of best fit
 - (Use a ruler)
- ▣ $Y = mx + b$
- ▣ $(Y - b) / m = x$ (this will solve for how many rubber bands you may need)

Sport Utility Vehicles Sales in the U.S.

