

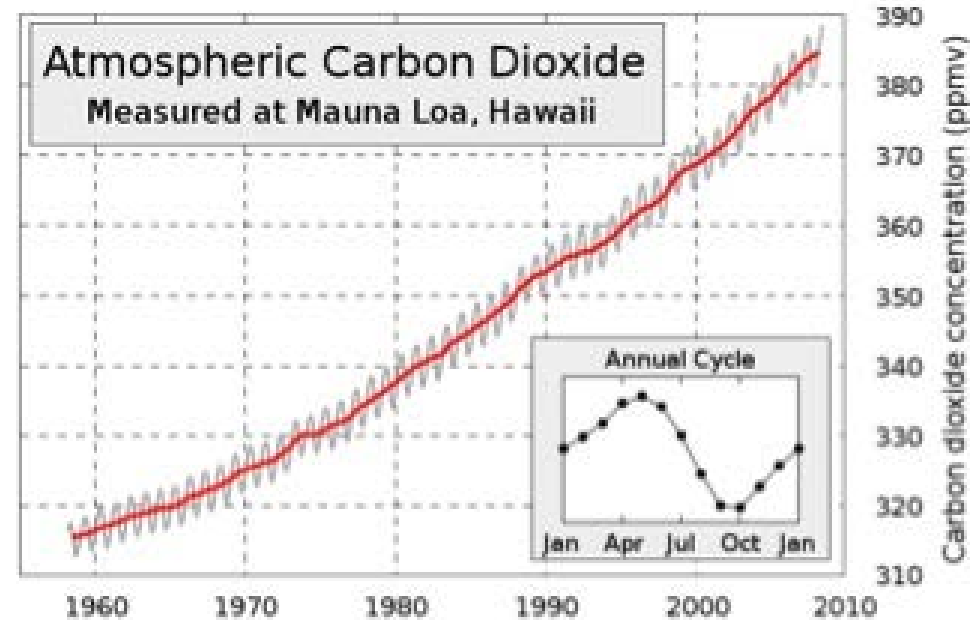
TYPES OF GRAPHS

And their importance in Science

Why do we use graphs?

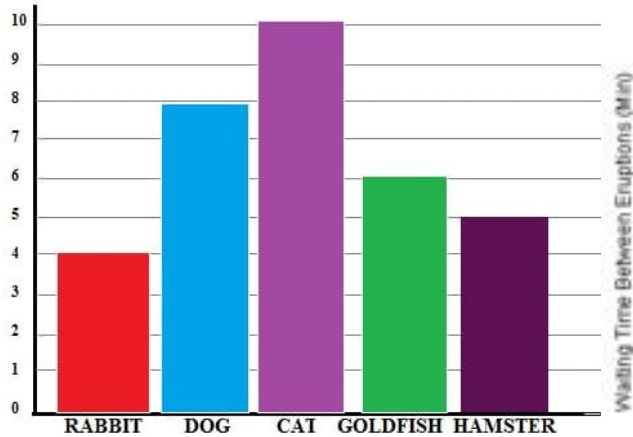
- They help us visualize data
- They help us see patterns

	Jan	Feb	Mar	Apr	May	Jun
1958	-99.99	-99.99	315.7	317.45	317.5	317.26
1959	315.62	316.38	316.71	317.72	318.29	318.16
1960	316.43	316.97	317.58	319.02	320.03	319.59
1961	316.93	317.7	318.54	319.48	320.58	319.77
1962	317.94	318.56	319.68	320.63	321.01	320.55
1963	318.74	319.08	319.86	321.39	322.24	321.47
1964	319.57	-99.99	-99.99	-99.99	322.24	321.89
1965	319.44	320.44	320.89	322.13	322.16	321.87
1966	320.62	321.59	322.39	323.87	324.01	323.75
1967	322.06	322.5	323.04	324.42	325	324.09
1968	322.57	323.15	323.89	325.02	325.57	325.36
1969	324	324.42	325.64	326.66	327.34	326.76
1970	325.03	325.99	326.87	328.14	328.07	327.66
1971	326.17	326.68	327.18	327.78	328.92	328.57
1972	326.77	327.63	327.75	329.72	330.07	329.09
1973	328.55	329.56	330.3	331.5	332.48	332.07
1974	329.35	330.71	331.48	332.65	333.09	332.25
1975	330.4	331.41	332.04	333.31	333.96	333.6
1976	331.75	332.56	333.5	334.58	334.87	334.34
1977	332.93	333.42	334.7	336.07	336.74	336.27
1978	334.97	335.39	336.64	337.76	338.01	337.89
1979	336.23	336.76	337.96	338.89	339.47	339.29
1980	338.01	338.36	340.08	340.77	341.46	341.17
1981	339.23	340.47	341.38	342.51	342.91	342.25
1982	340.75	341.61	342.7	343.57	344.13	343.35
1983	341.37	342.52	343.1	344.94	345.75	345.32
1984	343.7	344.5	345.28	347.08	347.43	346.79
1985	344.97	346	347.43	348.35	348.93	348.25
1986	346.3	346.96	347.86	349.55	350.21	349.54
1987	348.02	348.47	349.42	350.99	351.84	351.25
1988	350.43	351.73	352.22	353.59	354.22	353.79

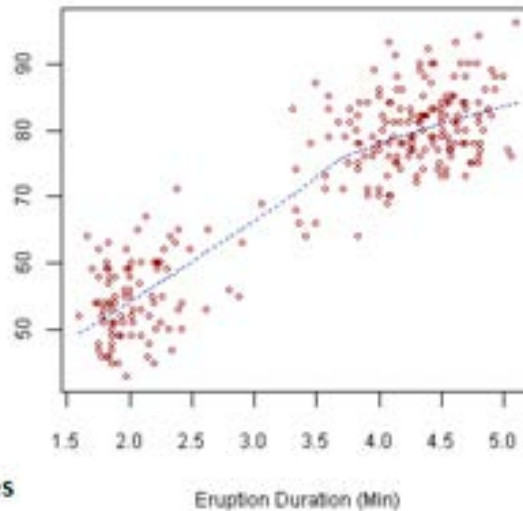


What are the different types of graphs?

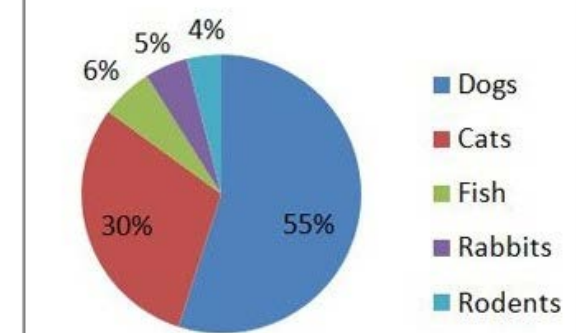
WHAT KIND OF PET DO YOU OWN



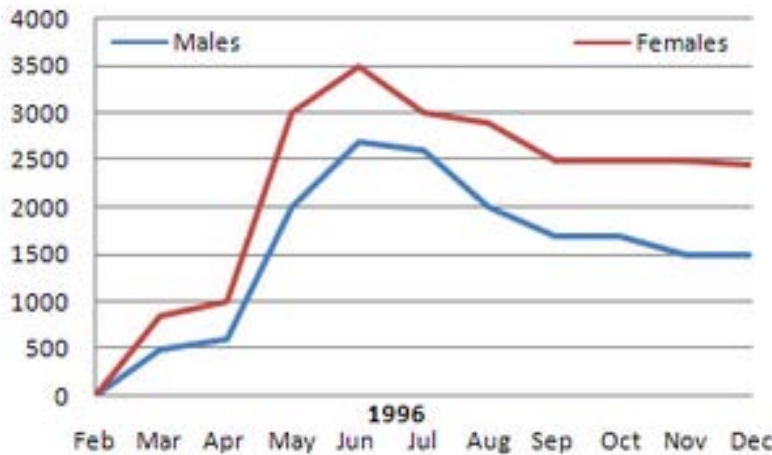
Old Faithful Eruptions



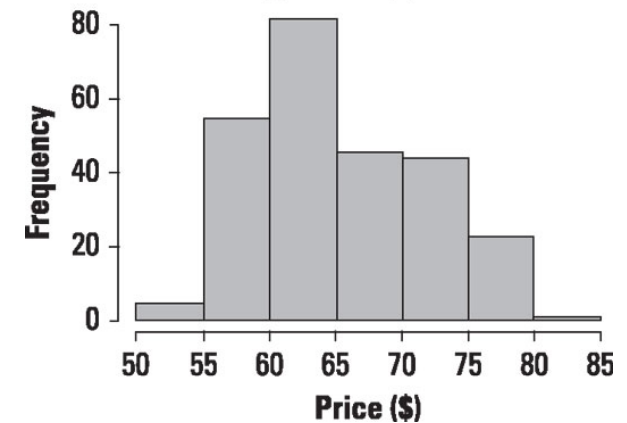
Pet Ownership



Flu Rates for Males and Females



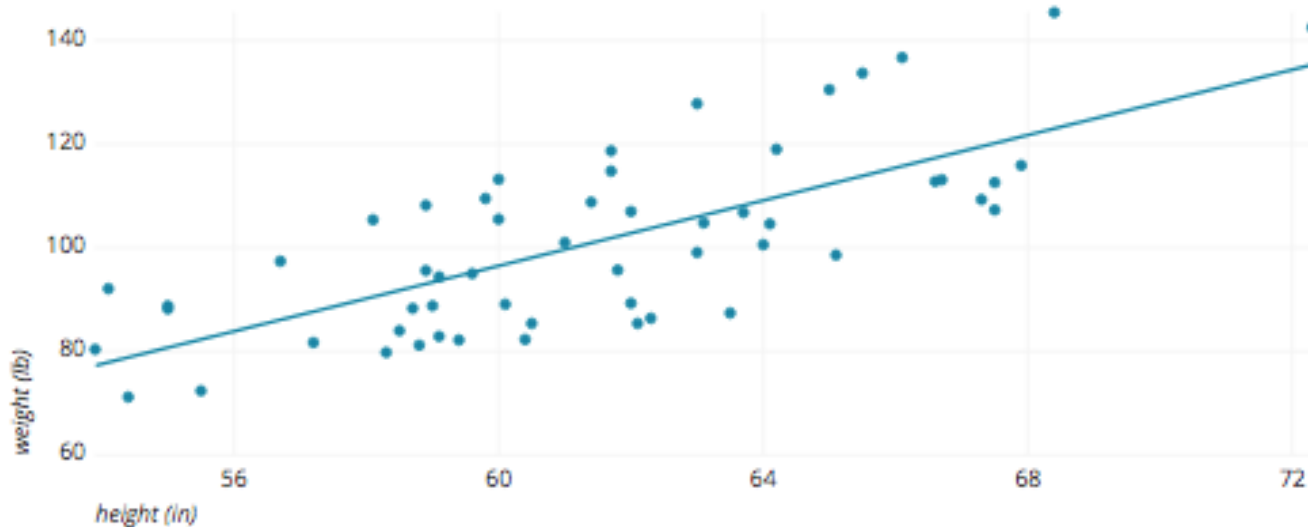
Histogram of Apple Prices



Scatterplot

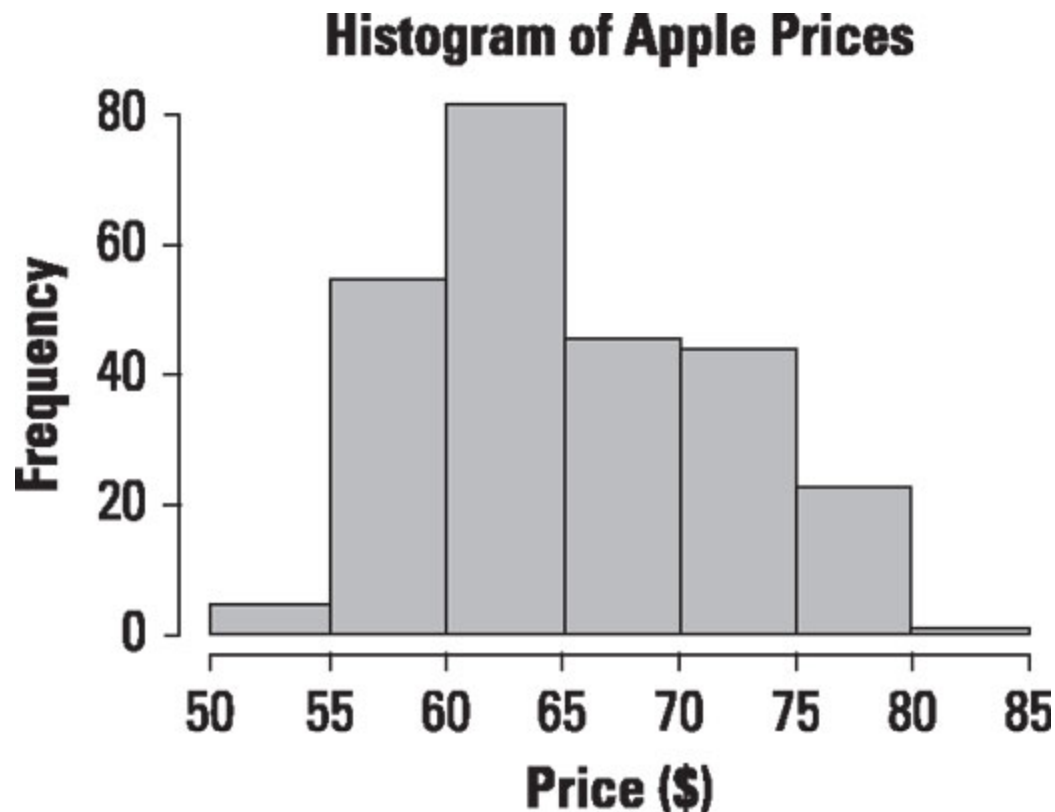
- Used when correlating two sets of data
- Example: Height and weight of children
- Shows you the relationship between two variables
- Line is drawn through the average

Weight and Height of Children



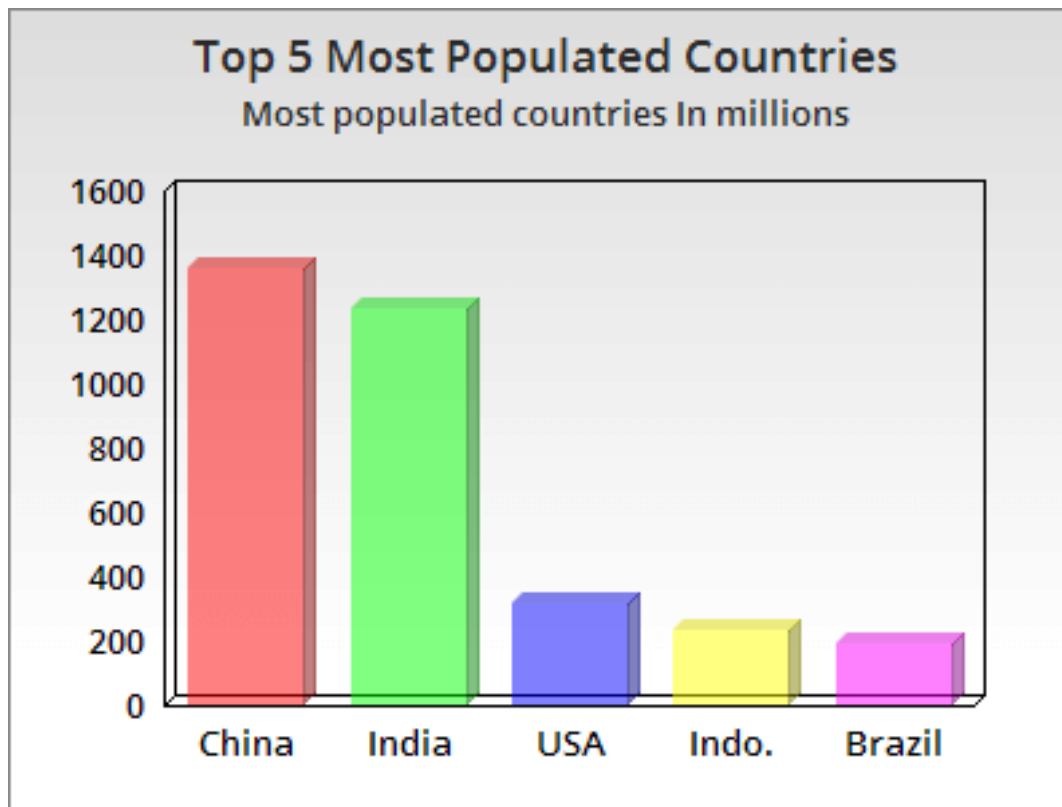
Histogram

- Shows you the distribution of data
- Groups numbers into ranges



Bar Graph

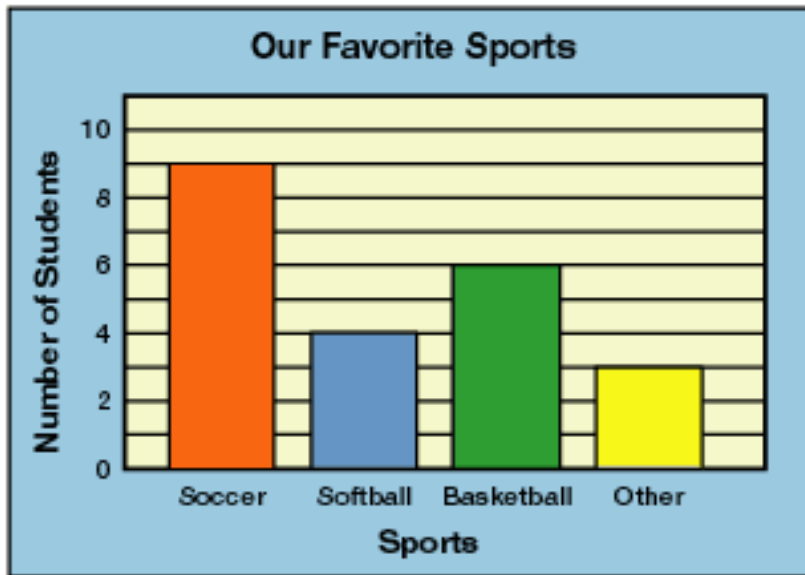
- Comparing categories or groups



Bar graph vs histogram

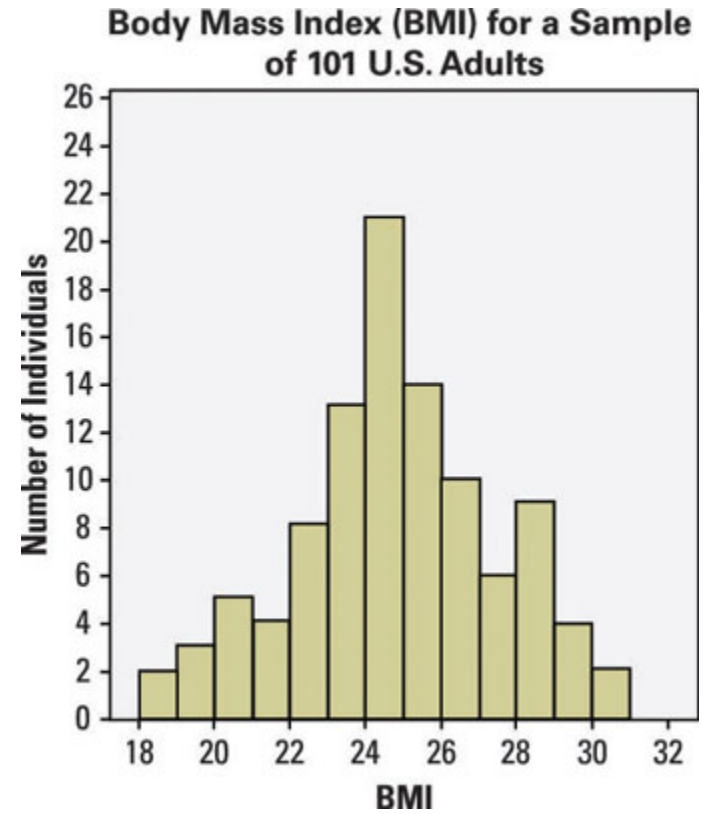
Bar graph

- Gaps
- Categories



Histogram

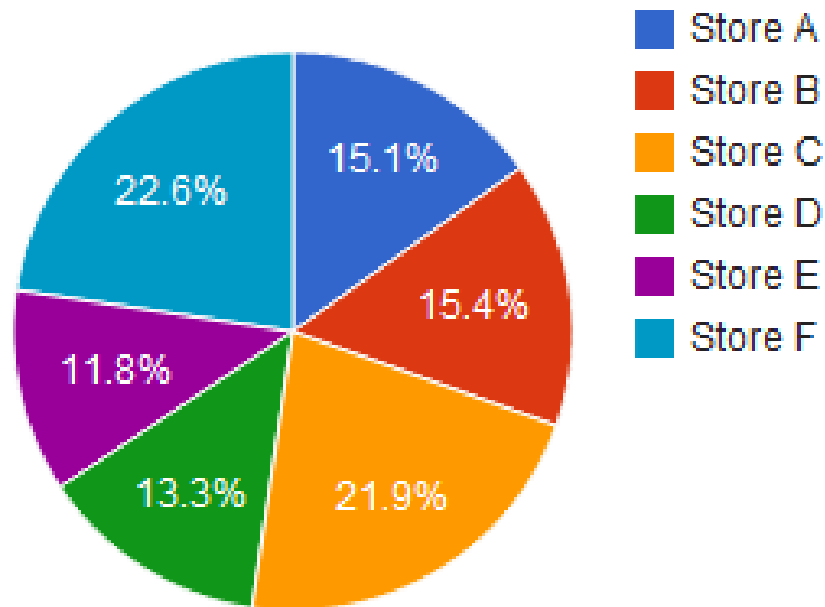
- No gaps
- Numbers



Pie chart

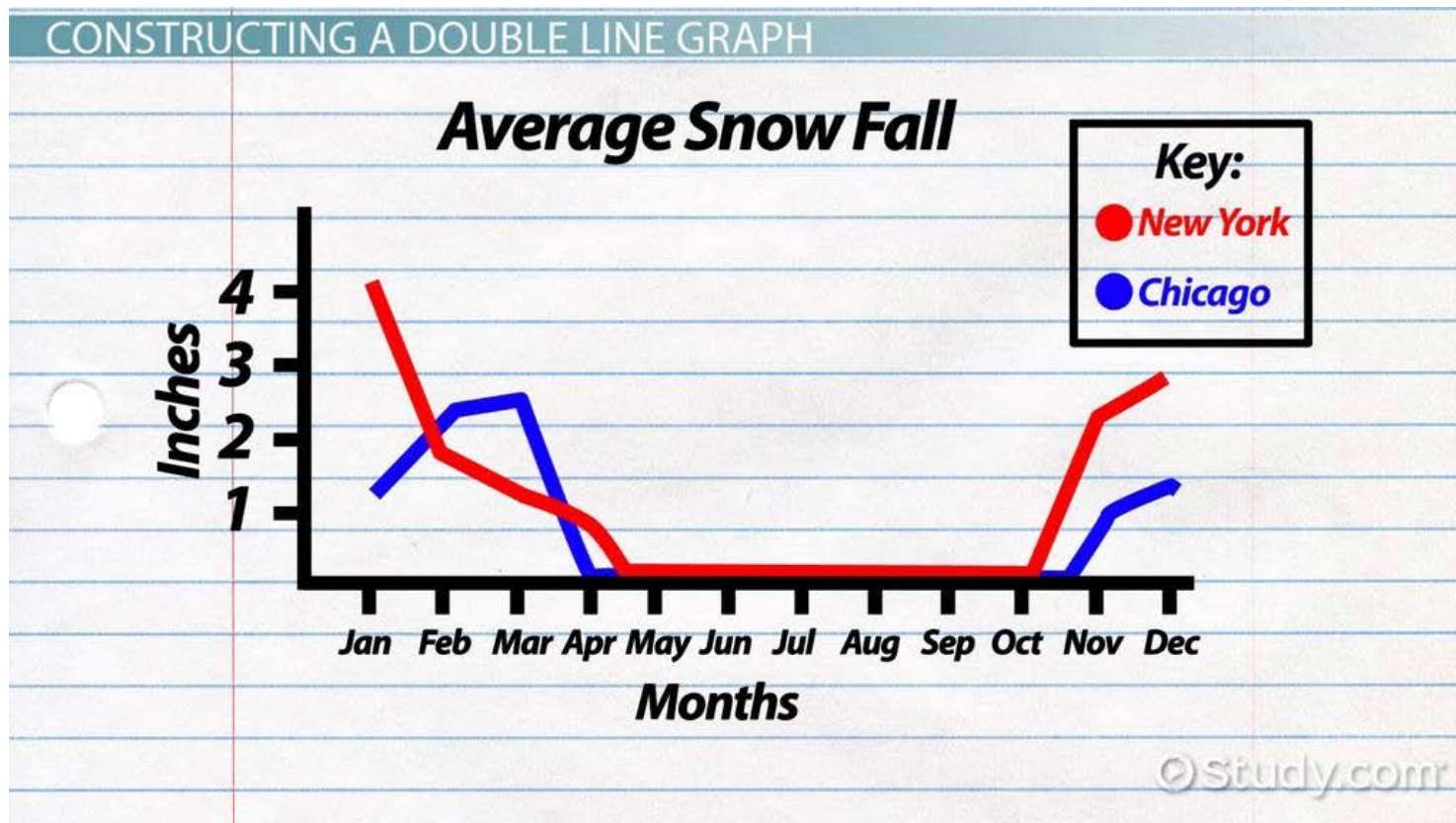
- When showing parts of the whole
- Percentages

Sales by store



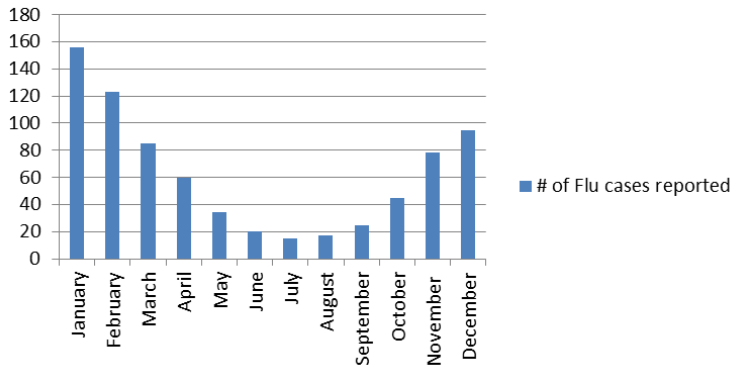
Line graph

- Shows change or growth over time



What kind of graph would you use for each situation?

of Flu cases reported



Month	Average High Temp	# of Flu cases reported
January	55	156
February	60	123
March	67	85
April	73	60
May	82	34
June	92	20
July	95	15
August	99	17
September	85	25
October	72	45
November	64	78
December	56	95

1. Average high temperature throughout the year

Line Graph

2. How the average high temperature and flu rate are related

Scatter plot

3. What percent of the population had the flu each month

Pie chart

4. How many people had the flu each month

Bar graph

How to draw a graph

- Independent (manipulated) variable on the x-axis (horizontal)
- Dependent (responding or measured) variable on the y-axis (vertical)
- Label each axis and be sure to include units of measurement
- The title should describe what the graph is about
- All numbers should be spaced evenly

How can you improve this graph?