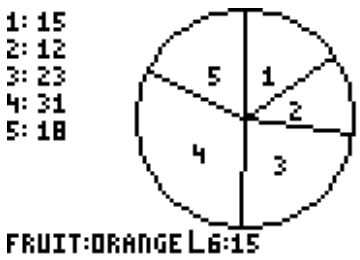
Circle Graph



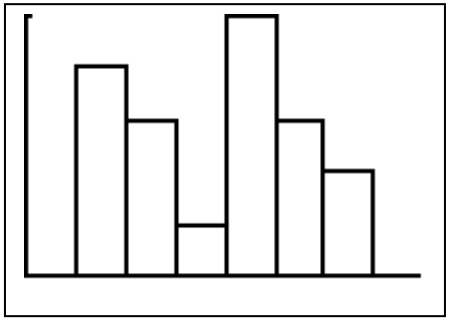
Advantages:

- Useful for comparing large data sets or for comparing two or more data sets
- Shows he distribution of the data clearly
- Minimum, maximum, quartiles, outliers and me are easily identified
- No clutter. Doesn't becor more complicated with
- more data values

Disadvantages:

- Can be difficult to construct
- Reveals little about mean, median or mode
- Must show 100% of the data
- Cannot be used with a large number of categories

Histogram

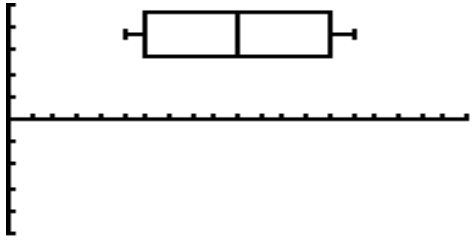


Advantages:

- The mode is easily seen
- Can be easily converted to a pictograph
- Categories or numbers can be compared at a glance
- Order doesn't matter
- Relatively easy to construct
- Easy to estimate values

Disadvantages:

- Does not display mean, median or mode
- Does not provide exact values
- Does not identify outliers
- Can be easily manipulated to give false impressions
- Takes more time to construct than some other graphs
- Order matters



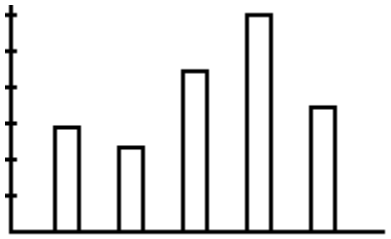
Box and Whisker Plot

Advantages:

- Clarifies patterns and trends over time better than most displays
- Is easily understood and recognized due to widespread use
- Requires little additional written or verbal explanation
- Can be used for large data sets

Disadvantages:

- Relatively difficult to construct
- Data elements are not displayed individually
- Impossible to determine gaps or clusters of values
- Cannot tell the frequency of individual values or compare the frequencies of several values
- Unfamiliar to many people



Bar Graph

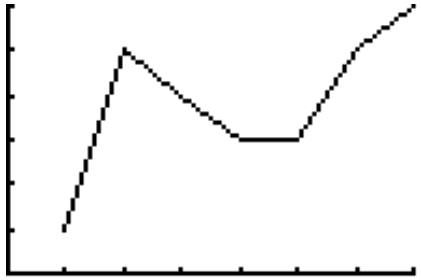
Advantages:

- Shows distribution of data
- Easy to construct and interpret
- Provides frequencies
- Easy to find minimum and maximum values, range and outliers
- Clusters or gaps in data easily identified
- Mode easy to identify
- Easy to see intervals

Disadvantages:

- Often requires additional written or verbal work
- Can be easily manipulated to create a false impression
- Cannot be used to show how something changes over time
- Is not well suited for making predictions

Line Graph



Advantages:

- Useful for determining if two sets of data are related
- Shows a trend or a change over time
- Shows each data point
- Clusters, gaps, or outliers are easy to see
- Useful for seeing if the data approximates a function

Disadvantages:

- Can be easily manipulate to create false impressions
- Reveals little about mean, median or mode
- Is not useful for comparing categorical data
- Not useful for discrete data points

Stem and Leaf

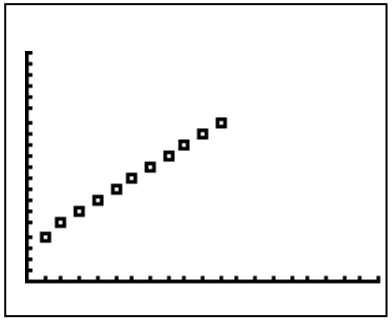
1	0, 3, 6
2	4, 5
3	3, 3, 8
4	0
5	1, 7, 9,
6	2, 3, 4

Advantages:

- Can be quickly constructed
- Shows every piece of data
- Provides a clear picture of a data set
- Easy to find the minimum and maximum values, and the mode
- Easy to find clusters or gaps in the data
- Can be adapted to a box and whisker plot

Disadvantages:

- Choice of bin (interval) "width" is limited
- Difficult to construct with too many digits
- Unfamiliar to many people
- No useful for comparing more than one population
- Using back to back plots is difficult if the two groups are not roughly the same size



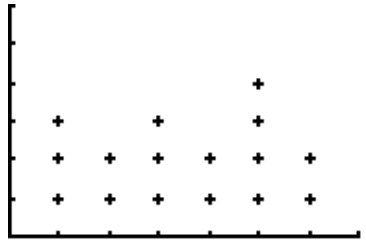
Scatter Plot

Advantages:

- Categories are relatively easy to compare
- Shows areas proportional to the number of data points
- Each category can be compared to the whole
- Used for large data sets
- Frequency can be represented in fraction or percent form

Disadvantages:

- Reveals little about mean, median or mode
- Can be easily manipulated to create false impressions
- Is not useful for comparing data



Line Plot

Advantages:

- Displays overall shape of the data
- Uses continuous intervals for large data sets
- Relatively easy to read and interpret
- Useful for seeing the existence of outliers
- Used to summarize a large data set
- Choice of interval size is not restricted

Disadvantages:

- Not appropriate for large sets of data
- Can appear jumbled if
- one value is repeated or when many values are clumped
- Must show 100% of the data
- Can't be used with a large number of categories or when range is too great