<u>NOTES</u>

Government Demo School

Class Name : 8th

Subject: Maths

Introduction to Data Handling

Data handling means to collect and present the data so that it could be used in further studies and to find some results.

Data

Any information collected in the form of numbers, words, measurements, symbols, or in any other form is called data.

Graphical Representation of Data

The grouped data can be represented graphically for its clear picture and it is the easiest way to understand the data.

Types of Graph

Pictograph

When we represent the data through pictures or symbols then it is called Pictograph.

One 🌳 represents 10 Trees	
Name	**Number of Trees**
Apple	🌳 🌳 🌳
Peach	🌳 🌳 🌳 🌳
Guava	🌳 🌳 🌳 🌳 🌳
Pear	🌳 🌳

Here one tree represents 10 trees. And we can easily read the pictograph.

The graph shows that there are 30 trees of apple and so on.

Bar Graphs

In the bar graph, the information represented by the bars of the same width with equal gaps but the height of the bars represent the respective values.
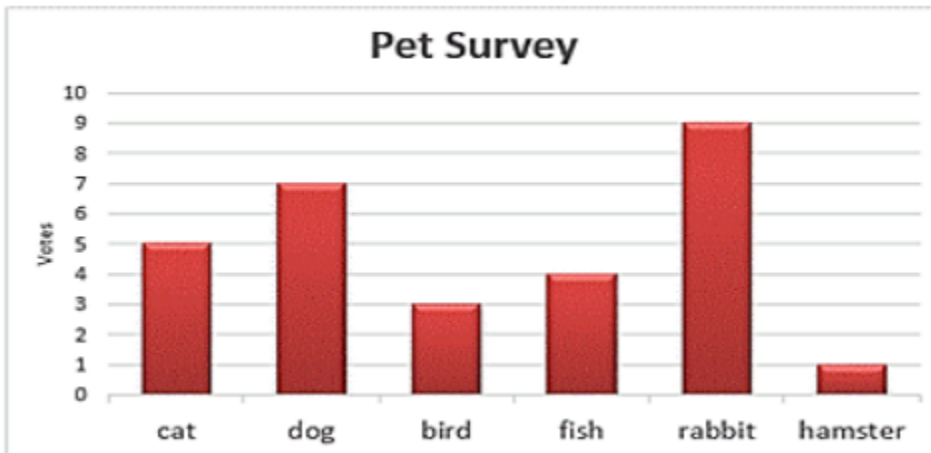
Here, the names of pets are represented on the horizontal line and the values of the respective pets are shown by the height of the bars. There is an equal gap between each bar.

Double Bar Graph

To compare some data we can use the double bar graph as it shows the information of two quantities simultaneously.
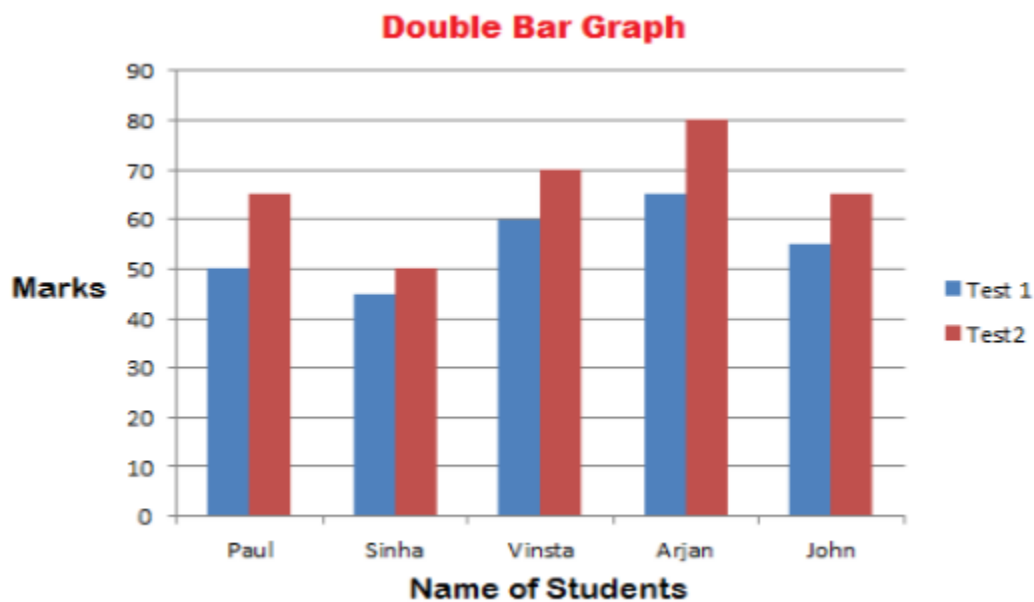
Here, in the above graph, it represents the marks of the students in two different tests altogether. So we can compare the marks easily.

Organizing Data

Any data which is available in the unorganized form is called Raw Data.

This raw data is arranged or grouped in a systematic manner to make it meaningful which is called the Presentation of Data.

Terms Related to Data Organizing

1. Frequency

Frequency tells us the no. of times a particular quantity repeats itself.

2. Frequency Distribution Table

Frequency can be represented by the frequency distribution table.

Frequency of Colors in a Bag of Skittles		
Color Choices	Tally Marks	Frequency
Purple	IIII	4
Yellow	HHT II	7
Red	HHT II	7
Green	HHT I	6
Blue	HHT	5
Orange	IIIII	4

The above table shows the no. of times a particular colour repeat in the bag of skittles.

Frequency can also be shown by the tally marks. A cut over four lines represents the number 5.

1. Grouping Data

If we have a large number of quantities then we need to group the observation and then make the table. Such a table is called a Grouped Frequency Distribution Table.

Some Important terms related to grouped Frequency Distribution Table

Class Interval or Class: When all the observations are classified in several groups according to their size then these groups are called Class Interval

Lower-class Limit: The lowest number in every class interval is known as its Lower-class Limit.

Upper-class Limit: The highest number in every class interval is known as its Upper-class Limit.

Width or Size or Magnitude of the Class Interval: The difference between the upper-class limit and the lower class limit is called the Size of the Class Interval.

Example

There is a list of marks of 40 students in a school. Arrange this in grouped frequency distribution table.

55	63	44	37	50	57	44	57	42	46	33	44
58	40	54	65	39	27	28	56	38	45	70	60
30	35	56	78	55	27	50	28	44	28	60	61
39	37	65	43								

Solution

As we can see that the lowest number in the above data is 27 and the highest number is 78, so we can make intervals if 20 - 30, 30 - 40 so on.

Class (Rs.)	Tally Marks	Frequency Students
20 – 30	卌	5
30 – 40	卌 |||	8
40 – 50	卌 ||||	9
50 – 60	卌 卌	10
60 – 70	卌		6
70 – 80	||	2
Total		40

Remark: As number 30 comes in two class interval but we cannot count it in both the intervals. So it is to remember that the common observation will always be counted in the higher class. Hence 30 will come in 30-40, not in 20-30.

Histogram

Basically, the bar graph of the grouped frequency distribution or continuous class interval is called Histogram.

The class intervals are shown on the horizontal line and the frequency of the class interval is shown as the height of the bars.

There is no gap between each bar.

Example

Draw a histogram for the wages of 30 workers in a company. The wages are as follows: 830, 840, 868, 890, 806, 840, 835, 890,840, 885, 835, 835, 836, 878, 810, 835, 836, 869, 845, 855, 845, 804, 808, 860, 832, 833, 812, 898, 890, 820.