Data Handling

Data:

- Data refers to any information collected in the form of numerical figures
- Data handling deals with collecting data, analysing, presenting it and drawing inferences from it
- Data is represented through graphs for better visibility and presentation
- Raw data : data available in an unorganized form
- Data can be represented graphically by : pictograph, bar graph, double bar graph, Histogram and pie chart
- Bar graph: display of information using bars of uniform width, their heights being proportional to the respective values
  double Bar graph : a bar graph to show and compare two sets of data simultaneously

Organizing data

- Raw data can be grouped and presented in a systematic manner through grouped frequency distribution
- Frequency refers to the number of times a particular observation occurs in the given data
- When data is very large it can be arranged in groups ; each group is called as class interval or class

Subject	Tally Marks	Number of Students
Art	𝍸 ||	7
Mathematics	𝍸	5
Science	𝍸 |	6
English	||||	4

- The number of tallies before each subject gives the number of students who like that particular subject.
- This is known as the frequency of that subject.

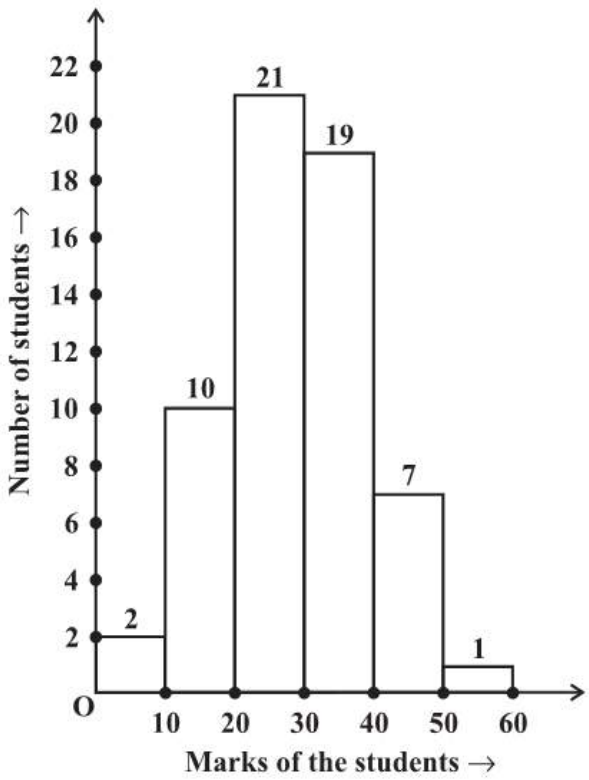
Frequency distribution

- table showing frequencies of various observations or class intervals
- Upper value of a class interval is called as upper class limit
- Lower value is called lower class limit
- Width or Size of class interval = Upper class limit – lower class limit
- Difference between lowest and highest observation in the data : range
- class mark: mid value of a class interval= $\frac{upper\ class\ limit + lower\ class\ limit}{2}$
- Continuous class intervals : upper limit of class interval coincides with lower limit of next class
- Discontinuous class interval : upper limit of class interval does not coincide with lower limit of next class

Histogram

- Grouped data for continuous class intervals can be represented with histogram : a type of bar diagram where class intervals are represented on horizontal axis And heights of the bars(rectangles) show frequency of the class interval
- since data is continuous is nature, there are no gaps between bars

Class Interval	Frequency
0-10	2
10-20	10
20-30	21
30-40	19
40-50	7
50-60	1
Total	**60**



pie chart: or circle graph :

- shows the relationship between a whole and its parts
- Here, the whole circle is divided into sectors
- The size of each sector is proportional to the activity or information it represents.

The time spent by a child during a day

Probability

- experiment: an operation that can produce some well-defined outcomes
- trial :performance of an experiment
- random experiment: an experiment in which all possible outcomes are known but the exact outcome cannot be predicted in advance
- equally likely outcomes: certain experiments whose outcomes have equal chance of occurring
- event: an outcome or collection of outcomes of an experiment
- Probability of an event = $\frac{number\ of\ outcomes\ that\ make\ up\ the\ event}{total\ number\ of\ outcomes}$, when the outcomes are equally likely.
- Tossing a coin : Head (H), Tail (T) are two equally likely outcomes
- Rolling a die : 6 equally likely outcomes : 1, 2, 3, 4, 5 , 6
- Probability of an event measures the chance of occurrence or non-occurrence of that event