

SUPPLEMENT



Data Handling

Objective

By the end of this lesson, students will understand data handling concepts, including organizing data, representing data using bar graphs, histograms, pie charts, and line graphs, and interpreting data.

Introduction to Data Handling

What is Data?

Data refers to facts and statistics collected for reference or analysis. Examples: Exam scores, temperatures, survey results, etc.

Types of Data

1. Quantitative Data: Numerical data (e.g., age, height, marks)
2. Qualitative Data: Descriptive data (e.g., colors, names, categories)

Organizing Data

Steps to Organize Data

1. Collection of Data

Gather information related to a specific topic. Example: Number of books read by students in a month.

2. Recording Data

Write down the collected data systematically, often in a table. Example:

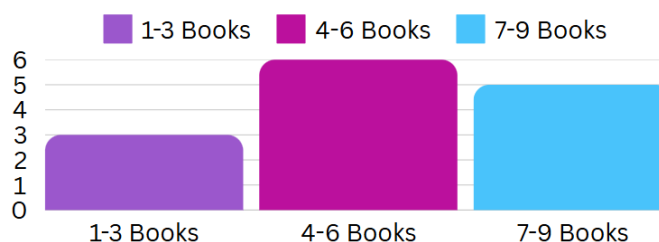
Student Name	Number of Books
Rahul	5
Priya	7
Aryan	4
Ananya	6

Representing Data

Bar Graphs

A bar graph represents data with rectangular bars. Example:

Book Readings	Number of Students
1-3 Books	3
4-6 Books	6
7-9 Books	5

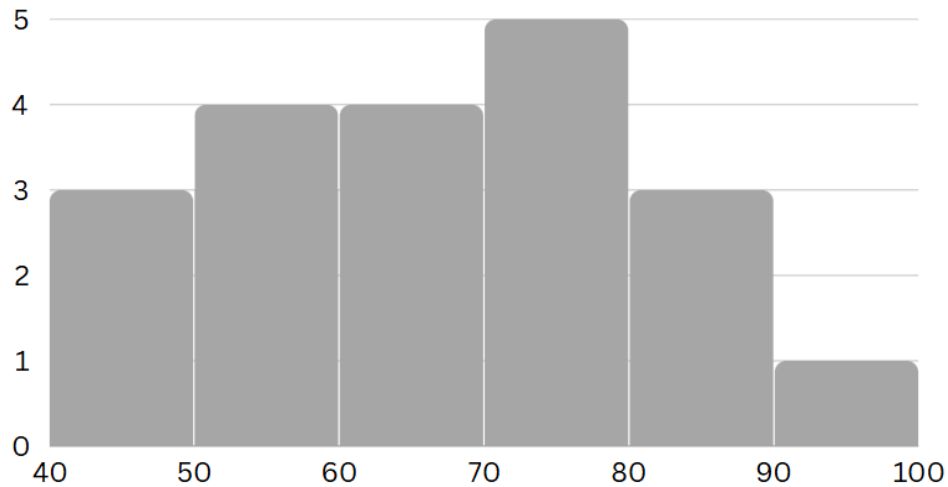


Histograms

A type of bar graph that represents the frequency distribution of continuous data. Example: Marks obtained by students in a test.

Data Collected:

Student	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
Marks	45	72	88	67	55	49	73	81	59	64	91	78	62	85	74	69	56	70	48	53

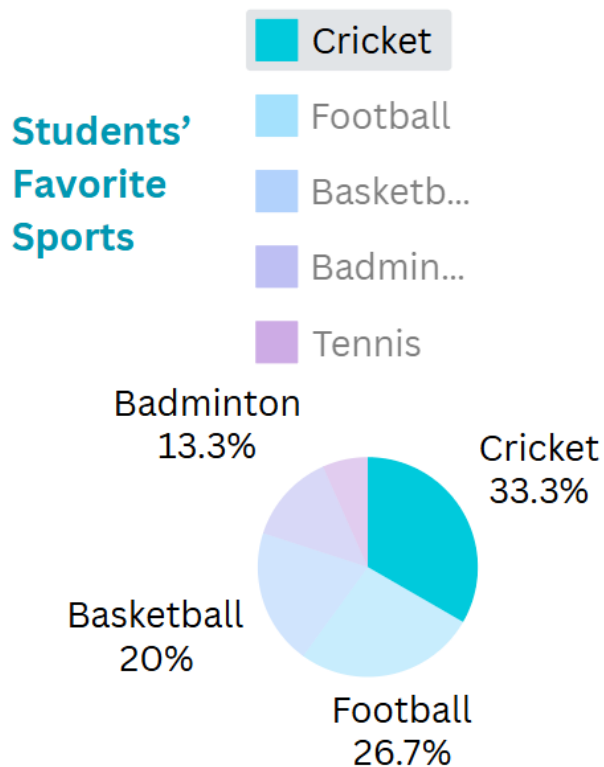


Pie Charts

A circular chart divided into sectors representing proportions. Example: Favorite subjects of students.

Collected Data

Students' Favorite Sports	
Sport	Number of Students
Cricket	10
Football	8
Basketball	6
Badminton	4
Tennis	2



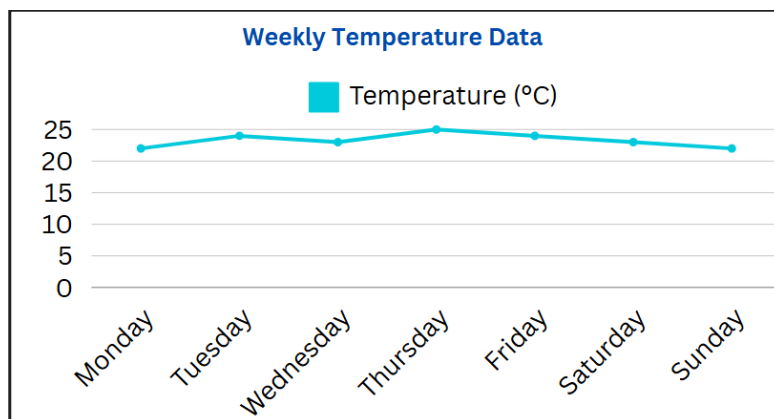
Pie chart represents the favorite sports of students.

Line Graphs

A graph that uses points connected by lines to show changes in data over time. Example: Temperature changes over a week.

Collected Data:

Weekly Temperature Data	
Day	Temperature (°C)
Monday	22
Tuesday	24
Wednesday	23
Thursday	25
Friday	24
Saturday	23
Sunday	22



Plotted temperature data on a line graph shows changes over the week.

Interpreting Data

Analyzing and drawing conclusions from graphs and charts.

Interpreting data from graphs is a critical skill that helps us understand trends, patterns, and insights from the information presented. Let's delve deeper into interpreting data with an example of temperature changes over a week, represented using a line graph.

Analyzing and Drawing Conclusions from the Line Graph:

1. Identify the Variables:
 - The x-axis represents the days of the week.
 - The y-axis represents the temperature in degrees Celsius (°C).
2. Observe the Trend:
 - Look at the overall trend in the graph. Is the temperature increasing, decreasing, or fluctuating?
 - In this example, the temperature increases slightly from Monday to Thursday, then decreases slightly towards the weekend.
3. Identify Peaks and Valleys:
 - Peaks represent the highest points on the graph.
 - Valleys represent the lowest points on the graph.
 - The highest temperature is on Thursday (25°C), and the lowest temperature is on Monday and Sunday (22°C).
4. Analyze Changes:
 - Examine the changes between each day to understand the variations in temperature.
 - The temperature increases from Monday to Tuesday (22°C to 24°C).

- The temperature slightly decreases on Wednesday (23°C) and increases again on Thursday (25°C).
- The temperature remains relatively stable from Thursday to Friday (25°C to 24°C).
- The temperature decreases again on Saturday and Sunday (23°C to 22°C).

5. Draw Conclusions:

- Based on the line graph, we can conclude that the temperature fluctuated slightly over the week, with the highest temperature recorded on Thursday and the lowest temperatures on Monday and Sunday.
- The temperature generally shows a pattern of increasing towards the middle of the week and decreasing towards the weekend.

By interpreting the line graph, we can easily visualize and understand the temperature changes over the week, making it easier to identify trends and draw meaningful conclusions.

For the Teacher

- Recap key points of data handling.
- Emphasize the importance of organizing and representing data for better understanding and analysis.

Activity 1: Favorite Fruits Survey

Objective: Conduct a survey on favorite fruits and represent the data using a pie chart.

Materials Needed: Paper and pencils, Chart paper, Markers or crayons

Steps:

1. Conduct a survey on favorite fruits of students.
2. Record the data in a table.
3. Create a pie chart to represent the data.

Activity 2: Exam Scores Analysis

Objective: Analyze exam scores and represent the data using a histogram.

Materials Needed: Paper and pencils, Chart paper, Markers or crayons

Steps:

1. Collect data on exam scores.
2. Record the data in a table.
3. Create a histogram to represent the frequency distribution of scores.

Activity 3: Weekly Temperature Tracking

Objective: Track weekly temperatures and represent the data using a line graph.

Materials Needed: Paper and pencils, Chart paper, Markers or crayons

Steps:

1. Collect daily temperature data for a week.
2. Record the data in a table.
3. Create a line graph to represent the temperature changes over the week.



Exercise 1: Organizing Data

1. Collect data on the number of pets owned by students in your class. Record the data in the table below:

Student Name	Number of Pets

2. Create a table to show the favorite sports of students in your class. Collect data and fill in the table:

Sport	Number of Students
Cricket	
Football	
Basketball	
Badminton	

Exercise 2: Drawing Graphs

1. Using the data collected in Exercise 1, create a bar graph to show the number of pets owned by students.
2. Using the data collected in Exercise 1, create a pie chart to show the favorite sports of students.

Exercise 3: Interpreting Data

1. The table below shows the number of books read by students in a month. Answer the questions that follow:

Student Name	Number of Books Read
Rahul	5
Priya	7
Aryan	4
Ananya	6
Sneha	8

- a. Who read the most books?
- b. Who read the least books?
- c. How many books were read in total?
- d. What is the average number of books read by the students?

2. The table below shows the favorite fruits of students in a class. Answer the questions that follow:

Fruit	Number of Students
Apple	8
Banana	5
Mango	7
Orange	4

- Which fruit is the most popular?
- How many students chose a fruit in total?
- What is the percentage of students who chose Mango? (Round to the nearest whole number)

Exercise 4: Creating Your Own Data

1. Think of a topic you are interested in (e.g., favorite movies, types of vehicles, hobbies). Collect data from your classmates and record it in a table.

Category	Number of Students

2. Create a bar graph, pie chart, or line graph to represent the data you collected. Be sure to label the axes and choose suitable symbols.