

SUPPLEMENT



Data Handling

Let's dive into data handling! We'll cover the basics of data handling, including what data is, how to organize it, and how to represent it visually. Let's get started!

Objective

By the end of this lesson, students will understand the concept of data handling, be able to organize data in tabular form, and represent data using bar graphs and pictographs.

Introduction to Data Handling

What is Data?

Data refers to facts and statistics collected together for reference or analysis. Example: The number of students in each class, scores in a test, or temperatures recorded over a week.

Organizing Data

Steps to Organize Data:

1. Collection of Data:

Gather information or numbers related to a specific topic. Example: Ages of students in a class.

2. Recording Data:

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

Student Name	Age
Rahul	11
Priya	12
Aryan	11
Ananya	12

Representing Data

1. Bar Graphs

A bar graph is a chart that represents data with rectangular bars. The length of each bar is proportional to the value it represents.

How to Draw a Bar Graph:

- Draw two perpendicular lines (axes). The horizontal axis (x-axis) represents categories, and the vertical axis (y-axis) represents values.
- Label the axes and choose a suitable scale.
- Draw bars for each category with heights corresponding to their values.

Example:

Age	Number of Students
11	2
12	2

2. Pictographs:

A pictograph uses pictures or symbols to represent data. Each picture or symbol represents a certain number of items.

How to Draw a Pictograph:

1. Choose a symbol to represent a certain number of items.
2. Draw the symbols in rows or columns to represent the data.

Example:

Age	Number of Students
11	 
12	 

Activity**Creating Bar Graphs and Pictographs:**

- a. Divide students into small groups.
- b. Provide each group with a set of data (e.g., number of books read by students in a month).
- c. Ask each group to organize the data in a table and create both a bar graph and a pictograph.

For the Teacher:

- Recap the key points of data handling.
- Emphasize the importance of organizing and representing data to make it easier to understand and analyze.
- Encourage students to observe and collect data in their daily lives and represent it using the methods learned.

Additional Examples**Example 1: Favorite Fruits of Students****Collected Data:**

- Apple: 8 students
- Banana: 5 students
- Mango: 7 students
- Orange: 4 students

Table:

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

Bar Graph:

Fruit	Number of Students
Apple	
Banana	
Mango	
Orange	

Pictograph:

Fruit	Number of Students
Apple	
Banana	
Mango	
Orange	

Example 2: Favorite Sports of Students**Collected Data:**

- Cricket: 10 students
- Football: 6 students
- Basketball: 4 students
- Badminton: 5 students

Table:

Sport	Number of Students
Cricket	10
Football	6
Basketball	4
Badminton	5

Bar Graph:

Sport	Number of Students
Cricket	
Football	
Basketball	
Badminton	

Pictograph:

Sport	Number of Students
Cricket	
Football	
Basketball	
Badminton	

For the Teacher: Activity Ideas

1. **Class Survey:**

Conduct a class survey on a topic of interest (e.g., favorite ice cream flavors). Record the data and create a bar graph and pictograph together.

2. **Data Collection Project:**

Assign a project where students collect data from their family or neighborhood (e.g., types of pets owned). Have them organize the data and create visual representations.

3. **Data Handling Quiz:**

Prepare a quiz with questions on data handling to assess students' understanding.

Activities

Activity 1: Class Survey

Objective: Conduct a class survey on a topic of interest and represent the data using bar graphs and pictographs.

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

Steps:

1. **Choose a Survey Topic:** Decide on a topic such as favorite ice cream flavors, favorite sports, or preferred modes of transportation to school.
2. **Conduct the Survey:** Each student asks their classmates and records the data in a table. Example:

Ice Cream Flavor	Number of Students
Chocolate	8
Vanilla	5
Strawberry	4
Mango	3

3. Create a Bar Graph: Draw the axes, label them, and draw bars to represent the data.
4. Create a Pictograph: Choose a symbol (e.g., 🍦 for ice cream scoops) and draw the pictograph.

Activity 2: Data Collection Project

Objective: Collect data from family members or neighbors and represent it in tabular form, bar graphs, and pictographs.

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

Steps:

1. Choose a Topic: Students select a topic such as types of pets owned, favorite fruits, or hobbies.
2. Collect the Data: Students collect data from family members or neighbors.
Example:

Pet Type	Number of People
Dogs	6
Cats	4
Birds	3
Fish	2

3. Organize the Data: Record the data in a table.
4. Create Visual Representations: Draw bar graphs and pictographs to represent the data.

Activity 3: Data Handling Quiz

Objective: Assess students' understanding of data handling concepts through a quiz.

Materials Needed: Quiz sheets, Pencils

Steps:

1. Prepare Quiz Questions: Create a quiz with questions related to data handling, such as:
 - What is data?
 - How do you organize data in a table?
 - What is a bar graph and how do you draw it?
 - What is a pictograph and how do you draw it?
2. Conduct the Quiz: Distribute quiz sheets and give students time to answer the questions.
3. Review and Discuss: Go over the answers with the class and address any doubts or questions.

Activity 4: Classroom Data Wall

Objective: Create a classroom data wall to display various data collected and represented by students.

Materials Needed: Chart paper, Markers or crayons, Sticky notes

Steps:

1. Set Up the Data Wall: Designate a wall or bulletin board in the classroom for displaying data.
2. Collect Data: Conduct multiple surveys or data collection projects on different topics.
3. Create Visuals: Draw bar graphs, pictographs, and tables to represent the data.
4. Display and Discuss: Display the visuals on the data wall and discuss the findings with the class.

Activity 5: Interactive Graphing Tool

Objective: Use an online graphing tool to create digital bar graphs and pictographs.

Materials Needed: Computers or tablets with internet access

Steps:

1. Choose a Data Set: Provide students with a set of data to work with or let them choose their own.
2. Access the Tool: Visit a website like **Create A Graph** (<https://nces.ed.gov/nceskids/createagraph/>).
3. Create Graphs: Follow the instructions to input the data and create bar graphs and pictographs.
4. Present and Share: Students present their digital graphs to the class.



Exercise 1: Organizing Data

1. Collect data on the number of siblings each student in your class has. Record the data in the table below:

Student Name	Number of Siblings

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

Fruit	Number of Students
Apple	
Banana	
Mango	
Orange	
Other	

Exercise 2: Drawing Bar Graphs

1. Using the data collected in Exercise 1, create a bar graph to show the number of siblings each student has. Remember to label the axes and choose a suitable scale.
2. Using the data collected in Exercise 1, create a bar graph to show the favorite fruits of students in your class.

Exercise 3: Drawing Pictographs

1. Using the data collected in Exercise 1, create a pictograph to show the number of siblings each student has. Choose a suitable symbol to represent the data (e.g., 🧑 for one sibling).
2. Using the data collected in Exercise 1, create a pictograph to show the favorite fruits of students in your class. Choose a suitable symbol to represent the data (e.g., 🍎 for apples).

Exercise 4: 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

- Who read the most books?
 - Who read the least books?
 - How many books were read in total?
 - What is the average number of books read by the students?
2. The table below shows the types of pets owned by students in a class. Answer the questions that follow:

Pet Type	Number of Students
Dog	6
Cat	4
Bird	3
Fish	2

- Which pet is the most popular?
- How many students have pets in total?
- If each student can have only one type of pet, what is the percentage of students who own a dog? (Round to the nearest whole number)

Exercise 5: Creating Your Own Data

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

Category	Number of Students

2. Create a bar graph and a pictograph to represent the data you collected. Be sure to label the axes and choose suitable symbols.