

Vision Empower & XRCVC
Teacher Instruction KIT
Data Handling

Syllabus: Karnataka State Board
Subject: Mathematics
Grade: 6
Textbook Name: Math Text cum workbook
Chapter Number & Name: 9. Data Handling

1. OVERVIEW

1.1 OBJECTIVE AND PREREQUISITES

Objective

Students will be able to

- draw a pictograph for the given information
- draw a bar graph
- collect, record and interpret data.

Prerequisite Concept

- Collecting data and scaling the data on a graph sheet.
- Interpreting the data from different types of graphs.

TIK_MATH_G6_CH10_Data Handling

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*Kindly Note: Activities marked with * are mandatory*

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2. LEARN

2.1 KEY POINTS

Data handling: Data Handling refers to the process of gathering, recording and presenting information in a way that is helpful to others - for instance, in graphs or charts. Data Handling is also sometimes known as statistics and you will often come across it in the study of both Maths and Science. Analysing data to draw conclusions.

2.2 LEARN MORE

3 ENGAGE

3.1 INTEREST GENERATION ACTIVITY

Activity 1: Data collection

Materials Required: None

Prerequisites: None

Activity Flow

- Ask the following questions to the students?

- *Why is the teacher taking attendance in a separate notebook? What is the use of an attendance book? What details will be there in the attendance book?*
 - *Daily, a teacher takes attendance of students in his/her class. It helps her to keep track of each student's attendance. In attendance, you will also find the average strength of the classroom.*
- *What is the use of a report card? What are the things we can observe in the report card?*
 - *It helps to record the marks and to analyse the performance of the students.*
- *The attendance notebook, report card are the tools to collect the data. It helps to organize and to analyse the data.*

Data is a collection of numbers gathered to give some information.

3.2 CONCEPT INTRODUCTION ACTIVITIES

Data Handling

Activity 2: Introduction to data handling

Materials Required: Stickers (Bindis), Small toothpicks or sticks, tactile graph sheet and tactile ruler.

Prerequisites: None

Activity Flow

Data is a collection of numbers gathered to give some information. To get particular information from the given data quickly, the data has to be recorded and organized.

- *Ask them the following general questions:*
 1. *How many of them like dogs?*
 2. *How many of them do not like to sing?*
 3. *How many of them do not like to have radish?*
- *Then, we will get the answer in terms of the number of students for all the questions.*
- *Then later make it a little more difficult by asking the following questions.*
 - *How many of them would like to do only dance, play harmonium, tabla and singing.*
- *Ask one of the students to get the data of how many would like to go for dance, play harmonium, tabla and singing. Ask him/her how they are going to remember or write down the data.*
- *After they express their way of recording the data then explain them the way to record the data.*

- Write all four categories in a paper one below the other or next to each other. Then go to each student, ask their interest and mark with a sticker (small bindi) on a paper in front of each category horizontally or vertically respectively.
- Finally, we will have data of how many students are interested in each category.
- Similarly, ask them to find out their own way of representing data for the question.
 - Teachers are planning for a one day trip but they have 4 options in their list, out of which only one place can be covered. Now students have to decide which places would most of them wish to go. The four places are Mysore palace and zoo, Wonderla water games, Bannerghatta National Park and safari and Savanadurga temple and hill.
- Also, ask them the questions which are explained at the beginning of the chapter and let them solve in their own way. And ask them which method or way of collecting data would give us a clear idea of the event.
- Then when it comes to organising the data, we can explain the way we arrange it in a tabular form.

Organizing Data:

Instead of using tick mark and Tally mark for the examples discussed under the organisation of data we can paste bindis or toothpicks or small sticks on a sheet of paper in a table and can count the number of bindis or sticks from the table.

Pictograph

Activity 3: To draw a pictograph

Materials Required: Different types of bindi

Prerequisites: Pictograph and its construction. Refer to *TIK_MATH_G6_CH10_Data Handling (Activity 3 and 4)*

Activity Flow

A Pictograph represents the data through pictures of objects. So we can count the number of pictures for each category and know the total number of things for each category.

Drawing a Pictograph:

- Give them the different shapes of stickers or sticks by using which they can create their own pictographs.
- For example: In example 7 under the section of drawing pictographs.
- Ask the students to use the following technique to create their own tactile pictograph.

- *Circular bindi with one small stick attached to it represents one student; bindi with two sticks represents 2 students and so on. Similarly, bindi with 5 sticks attached to it represents 5 students.*
- *Likewise, we can use our own image using whichever material you find it easy and common like cloth, paper, thread, plastic and draw the pictograph for all the examples given in the book.*
- *Similarly, for the following example, they can create a pictograph using different shapes of bindis representing different dishes.*
- *Ask them to solve the examples in the book and then ask them to interpret.*

Example: Soma and Rama went to a hotel to have breakfast. Then they saw the menu card which has the list of breakfast from Monday to Friday, which they are going to prepare on each particular day.

Monday – Chitranna, Masala dosa and Pulav

Tuesday – Puri, Pulav and Puli yogare

Wednesday – Chitranna, Masala dosa and Pulav

Thursday- Puri, Pulav and Puli yogare

Friday- Chitranna, Masala dosa and Pulav

Saturday-Puri, Pulav and Puli yogare

Sunday- Chitranna, Masala dosa and Pulav

So, they too were curious to know the dish liked by a maximum (more) number of people and the dish liked by the minimum (less) number of people. So, they started visiting each day and started marking with stickers representing people in front of each dish whichever dish they take from 8 o'clock to 10 o'clock.

In the end, after interpreting the collected data they found that the maximum number of people liked Masala dosa and minimum like Chitranna. Then they suggested the hotel manager by showing their observation to make masala dosa twice in a week so that it invites more customers.

Bar graph

Activity 4: To draw a bar graph.

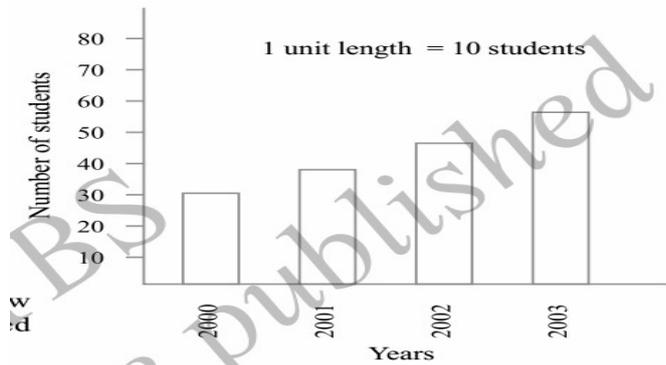
Materials Required: Tactile graph sheet, bindis

Prerequisites: Bar graph and its construction.

Activity Flow

A Bar Graph also called Bar Chart is a graphical display of data using bars of different heights.

- In a bar graph scaling is important. We should mention or tell everyone that 1 unit length is equal to so much. In example 9, there is a graph with the x-axis and y-axis. The X-axis (horizontal row represents years. Each unit in the x-axis represents the following years. 2000, 2001, 2002, 2003. The Y-axis (vertical column) represents the number of students and the scale is 1 unit length is equal to 20 students.



Information about the graph

2000 - 30 students.

2001 - 40 students.

2002 - 50 students.

2003 - 60 students.

- To draw a bar graph, take a tactile graph sheet which has small unit squares. For example:

Consider the above example 9 and the scale would be the height of each square is 10 units then put the stickers in each square according to the heights you see in that particular example in each year in the textbook.

- Also, help the students to interpret the data.
- Similarly, ask the students to work out all the bar graphs using tactile graph sheets and stickers. And they can also use sticks by measuring the required height for the graph with the help of a tactile ruler.

3.3 LET'S DISCUSS: RELATE TO DAILY LIFE*

Data Handling is used to organize your data.

For example,

- In the Library, it helps to keep track of the books. To know, what books are taken by the students, renewal date of the book, which book is preferred by most of the students.
- Report card- The marks for each term are recorded in the report card in the subject wise. Makes it easy to compare your performance with the last term score.

4 EXERCISES & REINFORCEMENT

4.1 PRACTICE EXERCISES

Activity 5: Practise and Recall

Materials Required: None

Prerequisites: Pictograph. Refer to activity 3.

Activity Flow

1. Following is the choice of sweets of 30 students of Class VI.
Ladoo, Barfi, Ladoo, Jalebi, Ladoo, Rasgulla, Jalebi, Ladoo, Barfi, Rasgulla, Ladoo, Jalebi, Jalebi, Rasgulla, Ladoo, Rasgulla, Jalebi, Ladoo, Rasgulla, Ladoo, Ladoo, Barfi, Rasgulla, Rasgulla, Jalebi, Rasgulla, Ladoo, Rasgulla, Jalebi, Ladoo.
(a) Arrange the names of sweets in a table using bindi. (Refer activity 3)
(b) Which sweet is preferred by most of the students?
2. The total number of animals in five villages are as follows :
Village A: 80
Village B: 120
Village C: 90
Village D: 40
Village E: 60
Prepare a pictograph of these animals using one symbol (one sticker) to represent 10 animals and answer the following questions :
(a) How many symbols represent animals of village E?
(b) Which village has the maximum number of animals?
(c) Which village has more animals: village A or village C?
3. Total number of students of a school in different years is shown in the following table

1996 - 400 students
1998 - 535 students
2000 - 472 students
2002 - 600 students
2004 - 623 students
A. Prepare a pictograph of students using one symbol (bindi)to represent 100 students and answer the following questions:

- (a) How many symbols represent the total number of students in the year 2002?
(b) How many symbols represent the total number of students for the year 1998?

4.2 IMPORTANT GUIDELINES*

Exercise Reading

It is very important that the children practice their learnings as well as their Reading. Hence have the children read out the newly learned concepts from their textbooks or other available resources.

Perform Textbook Activity

It is good practice to have the children perform the textbook activities. Your textbook activities might not be accessible hence go through this resource to learn how to make textbook content accessible

Provide Homework

To evaluate their understanding and to help the student revise and implement the new learnt concept ensure to provide them with homework. Students should perform one or two of the questions mentioned above or from the textbook exercises with the teacher in Class and the remaining may be given for homework. Also, ensure that the student knows their special skills linked to independently using their accessible books as it will be critical to doing homework independently

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