Vision Empower & XRCVC Teacher Instruction KIT Data Handling

Syllabus: Karnataka State Board Subject: Mathematics Grade: 4 Textbook Name: Mathematics Text cum Workbook Chapter Number & Name: 15, Data Handling

1. OVERVIEW

1.1 OBJECTIVE & PREREQUISITES

Objective

Students will be able to

- Collect information and write in the form of a table.
- Represent data in a bar graph and explain the information given in the bar graph.

Prerequisite Concept

Concept of data handling

TIK_MATH_G3_CH11_Data Handling

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Kindly Note: Activities marked with * are mandatory

OVERVIEW

OBJECTIVE & PREREQUISITES

LEARN

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Activity 1: Collect information and write in the form of a table

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Activity 1: Bar graph

LET'S DISCUSS: RELATE TO DAILY LIFE*

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2. LEARN

2.1 KEY POINTS

- Pictorial graph: Representation of numerical data through pictures and graphs is called pictorial representation.
- Bar graph: A bar graph is a simple way of presenting data. We use this graph to show the relationship between the large quantities. This can be done by making one unit of the graph to stand for a certain quantity.

2.2 LEARN MORE

3. ENGAGE

3.1 INTEREST GENERATION ACTIVITY

Activity 1: Collecting, Recording and Presenting Information

Materials Required: None Prerequisites: None

Activity Flow

- Tell the students that they are going to collect, record and present information in a way that is helpful to others.
- Divide the students into a group of 4 or 5.
- Assign each group to collect and record the following information.
 - For 1st group ask them to go around the class to collect the favourite colour of their classmates.
 - For the 2nd group ask them to go around the class to collect the favourite animal of their classmates.
 - For the 3rd group ask them to go around the class to collect the favourite fruit of their classmates.
- Now ask the following questions to group 1.
 - For how many students yellow is the favourite colour?
 - Which is the most favourite colour among the students?
 - Which is the least favourite colour among the students?
- Ask similar kinds of questions for group 2 and group 3.
- Discuss the following questions with the students?

- *How was the activity?*
- What did you learn from this activity?
- What is the use of collecting and recording information?
- *How did you collect the information?*
- *How did you record the information?*
- How did you answer each of the questions?
- *How did you present the day?*

Note: These are open-ended questions to reflect what they have done in the class. Collect the response from each group.

- Explain, data is a collection of facts.
- Data handling is the process of gathering, recording and presenting information in a way that is helpful to others.

3.2 CONCEPT INTRODUCTION ACTIVITIES

DATA COLLECTION

Activity 1: Collect information and write in the form of a table

Materials Required: 4 different types of seeds. Prerequisites: Activity 1

Activity Flow

- As a revision exercise, do the following activity.
- Create the following worksheet for the students and give them the four varieties of pulses.
- Let them count the number of seeds in each of the pulses and fill the worksheet.

Serial number	Name of the pulse	Number of seeds
1	Peas	?
2	Channa	?
3	Groundnuts	?
4	Toor dal	?

- Later, ask them to answer the following questions.
 - Which pulse is more in number?
 - Which pulse is less in number?

- Which pulses are of the same number?
- What is the total number of pulses?
- To answer these questions we have to observe the table and have to count again and again their number. Also, have to be careful in counting and have to make sure that no seeds are going to fall.
- Ask the students are there any other easy or better than this method to get the required details?
- Inform there is another easy method which we can construct and follow.

GRAPH

Activity 1: Bar graph

Materials Required: Raised line graph sheets, 4 types of "Bindi" and Taylor frame. *Prerequisites:* None

Activity Flow

- *Represent data in a bar graph and explain the information given in the bar graph.*
- Give graph sheets and 4 types of bindis to all.
- Each square in a graph sheet represents 1 unit and all 4 types of bindis represent 4 types of pulses.
- Now, start from the bottom first row and column of the graph sheet. So, depending on the number of seeds of peas they have to paste those many bindis in the first column. Eg. If there are 5 seeds then they will paste 5 bindis such that each square will have a single bindi.
- Similarly, the next pulses would be channa, groundnuts and toor dal.
- Now, ask them to answer the questions by looking at the bar graph. Then ask them which method is better to observe and to collect data?

OR

- Ask the students to create a bar graph on the Taylor frame using types.
- Here the types represent the seeds or in general 1 unit. Then suppose peas have 4 seeds then they have put 4 similar types one above the other in a vertical column. Then go for the next pulse which could be ground nuts. It has 5 seeds then ask them to put 5 similar types in a vertical column next to the first line of peas.
- Similarly, ask them to do it for the remaining two pulses.
- Hence this will represent the bar graph.
- And give a few other examples to create bar graphs on the Taylor frame.
- Also, give them the questions related to the particular examples so that they will interpret the graph and answer the questions.

• Then discuss the uses of bar graphs and help them to solve the questions in the book.

3.3 LET'S DISCUSS: RELATE TO DAILY LIFE*

There are many examples of data handling which you will encounter, both in the classroom and in real life.

Some school-related examples could be:

- 1. Taking stock of remaining eggs and groceries after preparing a mid-day meal.
- 2. Creating a table to represent the toppers marks in each year.
- 3. Recording your marks and analyzing the average of the class.
- 4. In the school library, maintaining a record:
 - a. to know the number of books in each domain,
 - b. to know the number of books taken by the students.
 - c. to know, how many times each book was taken by the students.
- 5. Data of a large number of children, with respect to their personal information and academic records.

Some real-life examples

- 1. National Census Collecting and recording the information of each family. How many elders are there, how many children are there, their annual income.
- 2. Wildlife tracking data For example, the number of tigers in each state.

4. EXERCISES & REINFORCEMENT

4.1 PRACTICE AND EXERCISES

Activity 1: Practice Problems

Materials Required: Raised line graph sheet. *Prerequisites: Refer to activity 3.*

Activity Flow

- Divide the students into a group of 2.
- Ask the first group to collect information regarding their favourite food items.
- Ask them to represent that information in a given graph sheet.
- Ask the second group to collect the information regarding how many students like the subject English, Maths and Science. Tell them to represent that information in a given graph sheet.
- Now ask the students to exchange their bar graph and ask them to tell the information that they have interpreted from the graph sheet.

4.1 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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