CHAPTER

9

VI-MATHEMATICS-NCERT (2024-25)

9. DATA HANDLING (Notes)

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- 1. **Data**: A data is a collection of numbers gathered to give some information.
- 2. To get a particular information from the given data quickly, the data can be arranged in a tabular form using tally marks

Example 2: Ekta is asked to collect data for size of shoes of students in her Class VI. Her finding are recorded in the manner shown below

| 5 | 4 | 7 | 5 | 6 | 7 | 6 | 5 | 6 | 6 | 5 |
|---|---|---|---|---|---|---|---|---|---|--------|
| 4 | 5 | 6 | 8 | 7 | 4 | 6 | 5 | 6 | 4 | 6 |
| 5 | 7 | 6 | 7 | 5 | 7 | 6 | 4 | 8 | 7 | 5 6 |

Sol:

| Shoe size | Tally marks | Number of students |
|-----------|-------------|--------------------|
| 4 | M1 | 5 |
| 5 | III IM | 8 |
| 6 | M M | 10 |
| 7 | III IM | 7 |
| 8 | П | 2 |

Pictograph

A pictograph represents data through pictures of objects.

Example 3: The following pictograph shows the number of absentees in a class of 30 students during the previous week:

| Days | Number of absentees | - 1 Absentee |
|-----------|---|--------------|
| Monday | \$\frac{1}{2} \frac{1}{2} \frac | |
| Tuesday | EN EN EN | |
| Wednesday | End End | |
| Thursday | | |
| Friday | Entry | |
| Saturday | 888888 | Er. |

- (a) On which day was the maximum number of students absent?
- Sol: Saturday.
- (b) Which day had full attendance?
- Sol: Thursday
- (c) What was the total number of absentees in that week?
- Sol: Total number of absentees=5+4+2+0+1+8=20

Example 4: The colours of fridges preferred by people living in a locality are shown by the following pictograph.

| Colours | Number of people | ♀ - 10 People |
|---------|------------------|---------------|
| Blue | * * * * * | |
| Green | * * * | |
| Red | 22225 | |
| White | 8 8 | |

- (a) Find the number of people preferring blue colour.
- Sol: Blue colour is preferred by $5 \times 10 = 50$ people
- (b) How many people liked red colour?
- Sol: Number of people preferring red colour= $5 \times 10 + 5 = 50 + 5 = 55$

Example 5: A survey was carried out on 30 students of class VI in a school. Data about the different modes of transport used by them to travel to school was displayed as pictograph. What can you conclude from the pictograph?

| Modes of travelling | Number of students | 😊 - 1 Student |
|---------------------|---------------------------------|---------------|
| Private car | © © © © | |
| Public bus | \odot \odot \odot \odot | |
| School bus | 000000 | 9 9 9 9 9 |
| Cycle | © © © | |
| Walking | 000000 | 9 0 |

- Sol: From the pictograph we find that
 - (a) The number of students coming by private car is 4.
 - (b) Maximum number of students use the school bus. This is the most popular way.
 - (c) Cycle is used by only three students.
 - (d) The number of students using the other modes can be similarly found.

Example 6: Following is the pictograph of the number of wrist watches manufactured by a factory in a particular week.

| Days | Number of wrist watches manufactured | 2 -100 Wrist watches |
|-----------|--------------------------------------|----------------------|
| Monday | Ø Ø Ø Ø Ø | (600) |
| Tuesday | 00000000(| (750) |
| Wednesday | 0000000 | (650) |
| Thursday | 0 0 0 0 0 0 0 0 | (800) |
| Friday | 0 0 0 0 0 0 | (600) |
| Saturday | 00000(| (550) |

- (a) On which day were the least number of wrist watches manufactured?
- Sol: Saturday

- (b) On which day was the maximum number of wrist watches manufactured?
- Sol: Thursday
- (c) Find out the approximate number of wrist watches manufactured in the particular week?
- Sol: The approximate number of wrist watches manufactured in the particular week =600+750+650+800+600+550=3950

EXERCISE 9.1

1. In a Mathematics test, the following marks were obtained by 40 students. Arrange these marks in a table using tally marks.

| 8 | 1 | 3 | 7 | 6 | 5 | 5 | 4 | 4 | 2 |
|---|---|---|---|---|---|---|---|---|---|
| 4 | 9 | 5 | 3 | 7 | 1 | 6 | 5 | 2 | 7 |
| 7 | 3 | 8 | 4 | 2 | 8 | 9 | 5 | 8 | 6 |
| 7 | 4 | 5 | 6 | 9 | 6 | 4 | 4 | 6 | 6 |

Sol:

| Marks | Tally marks | Number of students |
|-------|-------------|--------------------|
| 1 | П | 2 |
| 2 | Ш | 3 |
| 3 | 111 | 3 |
| 4 | WH | 7 |
| 5 | 7 | 6 |
| 6 | HH | 7 |
| 7 | 74 | 5 |
| 8 | 1111 | 4 |
| 9 | Ш | 3 |
| | Total | 40 |

- (a) Find how many students obtained marks equal to or more than 7.
- Sol: 5+4+3=12
- (b) How many students obtained marks below 4?
- Sol: 2+3+3=8
- 2. 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, Jalebi, Ladoo, Rasgulla, Jalebi, Ladoo.

(a) Arrange the names of sweets in a table using tally marks.

Sol:

| Sweet | Tally marks | Number of students |
|----------|-------------|--------------------|
| Ladoo | JM MI | 11 |
| Barfi | Ш | 3 |
| Jalebi | M(11 | 7 |
| Rasgulla | M III | 9 |
| | Total | 30 |

- (b) Which sweet is preferred by most of the students?
- Sol: Ladoo.
- 3. Catherine threw a dice 40 times and noted the number appearing each time as shown below:

| 1 | 3 | 5 | 6 | 6 | 3 | 5 | 4 | 1 | 6 |
|---|--------|---|---|---|---|---|---|---|---|
| 2 | 5 2 | 3 | 4 | 6 | 1 | 5 | 5 | 6 | 1 |
| 1 | 2 | 2 | 3 | 5 | 2 | 4 | 5 | 5 | 6 |
| | 1 | | | | | | | | |

Make a table and enter the data using tally marks. Find the number that appeared.

Sol:

| Number on dice | Tally marks | Number of times |
|----------------|-------------|-----------------|
| 1 | HH II | 7 |
| 2 | 144 | 6 |
| 3 | PP | 5 |
| 4 | Ш | 4 |
| 5 | WH HT1 | 11 |
| 6 | HU | 7 |
| | Total | 40 |

(a) The minimum number of times

Sol: 4

(b) The maximum number of times

Sol: 5

(c) Find those numbers that appear an equal number of times.

Sol:1 and 6

4. Following pictograph shows the number of tractors in five villages.

| Viilages | Number of tractors 6 - 1 Tractor |
|-----------|---------------------------------------|
| Village A | 0 0 0 0 0 0 0 0 0 |
| Village B | 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 |
| Village C | 00 00 00 00 00 00 00 00 |
| Village D | 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 |
| Village E | 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 |

Observe the pictograph and answer the following questions.

(i) Which village has the minimum number of tractors?

Sol: Village D

(ii) Which village has the maximum number of tractors?

Sol: Village C

(iii) How many more tractors village C has as compared to village B.

Sol: 8-5=3

(iv) What is the total number of tractors in all the five villages?

Sol: 6+5+8+3+6=28

5. The number of girl students in each class of a co-educational middle school is depicted by the pictograph:

| Classes | Number of girl students | √ - 4 Girls |
|---------|-------------------------|--------------------|
| I | | (24) |
| II | ON ON ON ON K | (18) |
| Ш | apppp | (20) |
| IV | Or Or Or Or Or | (14) |
| V | KOT KOT K | (10) |
| VI | para para | (16) |
| VII | O O O | (12) |
| VIII | KOT K | (6) |

Observe this pictograph and answer the following questions:

(a) Which class has the minimum number of girl students?

Sol: VIII class.

(b) Is the number of girls in Class VI less than the number of girls in Class V?

Sol: No.

(c) How many girls are there in Class VII?

Sol: 12

6. The sale of electric bulbs on different days of a week is shown below:

| Days | Number of electric bulbs | - 2 Bulbs |
|-----------|--------------------------|-------------|
| Monday | | (12) |
| Tuesday | | (16) |
| Wednesday | | (8) |
| Thursday | | (10) |
| Friday | | (14) |
| Saturday | | (8) |
| Sunday | | (18) |

Observe the pictograph and answer the following questions :

- (a) How many bulbs were sold on Friday?
- **Sol**: 14
- (b) On which day were the maximum number of bulbs sold?
- Sol: Sunday.
- (c) On which of the days same number of bulbs were sold?
- Sol: Wednesday and Saturday (8 bulbs)
- (d) On which of the days minimum number of bulbs were sold?
- Sol: Wednesday and Saturday (8 bulbs)
- (e) If one big carton can hold 9 bulbs. How many cartons were needed in the given week?
- Sol: Total number of bulbs sold in the given week=12+16+8+10+14+8+18=86 If one big carton can hold 9 bulbs

$$\frac{86}{9} = 9\frac{5}{9}$$

Required number of cartons=10

7. In a village six fruit merchants sold the following number of fruit baskets in a particular season:

| Name of fruit merchants | Number of fruit baskets | - 100 Fruit baskets |
|-------------------------|-------------------------|--|
| Rahim | 888 | (400) |
| Lakhanpal | 9999 | (550) |
| Anwar | | (700) |
| Martin | 9999 | 950 |
| Ranjit Singh | 6666 | a a a a a b a a b a b a b a b a b b b b b b b b b c b b c b c b c b c b c b c c b c c d |
| Joseph | | (450) |

Observe this pictograph and answer the following questions :

- (a) Which merchant sold the maximum number of baskets?
- Sol: Martin
- (b) How many fruit baskets were sold by Anwar?
- **Sol:** 700
- (c) The merchants who have sold 600 or more number of baskets are planning to buy a godown for the next season. Can you name them?
- Sol: Anwar, Martin and Ranjit Singh.

