23   Data Interpretation

By studying this lesson, you will be able to,

- interpret the data represented in picture graphs and tables.

23.1   Interpreting data represented in tables

We learnt how data is represented in picture graphs and tables in the lesson on Data Collection and Representation.

Drawing various information from the data represented in picture graphs and tables is known as data interpretation.

Let us consider the data represented in tables.

The following table provides data on the sales of 175 ml bottles of fruit juice marketed by a company during the first five months of the year 2014.

Month	Number of Bottles
January	30 000
February	32 100
March	31 500
April	34 800
May	33 000

To draw various conclusions regarding these sales, let us answer the following questions according to the above table.

(i) How many more bottles were sold in February than in January?

Number of bottles sold in February = 32 100
Number of bottles sold in January = 30 000
Therefore the number of extra bottles sold in February $\Big\}$ = 32 100 − 30 000

= 2 100

(ii) Considering the months of March and April, what was the total sales during these two months?

$$\text{Number of bottles sold in March} = 31\ 500$$
$$\text{Number of bottles sold in April} = 34\ 800$$
$$\text{Total number of bottles} = 31\ 500 + 34\ 800$$
$$= 66\ 300$$

(iii) Considering these five months, during which month were sales highest and during which month were sales lowest? What was the quantity of sales during these two months?

Sales were highest in April. The number of bottles sold during this month was 34 800.

Sales were lowest in January. The number of bottles sold during this month was 30 000.

(iv) Write down the ratio of the number of bottles sold in January to the number sold in May in its simplest form.

$$\text{Number of bottles sold in January} = 30\ 000$$
$$\text{Number of bottles sold in May} = 33\ 000$$
$$\left.\begin{array}{l}\text{Ratio of the number of bottles sold}\\ \text{in January to the number sold in May}\end{array}\right\} = 30\ 000 : 33\ 000$$
$$= 30\ 000 \div 1000 : 33\ 000 \div 1000$$
$$= 30 : 33$$
$$= 30 \div 3 : 33 \div 3$$
$$= 10 : 11$$

Exercise 23.1

(1) The following table provides the number of trishaws that were registered in a certain province during the last 5 years.

Year	Number of Trishaws
2009	930
2010	1215
2011	1630
2012	1982
2013	2240

Answer the following questions based on the table.

(i) In which year was the least number of trishaws registered?

(ii) In which year was the most number of trishaws registered?

(iii) How many more trishaws were registered in 2013 than in 2009?

(iv) Write down any special fact that can be stated according to the given data, regarding the registration of trishaws in this province.

(2) The number of kilogrammes of Bombay onions sold during the first six months of the year by a certain wholesale dealer is given in the following table.

Month	Amount (kg)
January	21 700
February	22 450
March	21 850
April	27 200
May	25 950
June	23 000

Answer the following questions based on the data in the table.

(i) In which month was the greatest quantity of Bombay onions sold? How much was sold during this month?

(ii) The wholesale dealer claims that the quantity of Bombay onions sold each month at his shopping centre is more than 22 000 kg. Write down your views regarding this statement.

(iii) How many more kilogrammes of Bombay onions were sold in April than in March?

(iv) An employee of this shopping centre states that the quantity of Bombay onions sold during the months of April and May exceeds 53 000 kg. Show that this statement is true.

(v) Write down a probable reason why the sales during the months of April and May exceed the sales during the other months.

(3) A certain news item that appeared in a well known newspaper in year 2014 is given in the following box.

> The quantity of fresh milk that is produced in several Sri Lankan districts has gradually increased during the past several years.

(i) Based on the data in the following table, determine whether the above news item is true.

(ii) What is the total production of fresh milk in litres during the given four years?

(iii) Is the milk production of year 2013 more than twice the milk production of year 2010?

Year	Milk production in litres
2010	163 100
2011	190 600
2012	201 400
2013	290 700

23.2 Interpretation of data represented in picture graphs

The data on the vehicles that joined a highway during a certain hour through a certain entry point is represented in the following picture graph.

Cars	
Buses	
Vans	
Jeeps	
Lorries	

10 vehicles are represented by the symbol.

We can present several interpretations based on this picture graph.

♦ The type of vehicle that joined the highway at this entry point most during this hour is cars.

♦ The type of vehicle that joined the highway at this entry point least during this hour is jeeps.

♦ The number of lorries that joined the highway at this entry point during this hour is 20.

♦ The total number of vehicles that joined the highway at this entry point during this hour is 105.

♦ The number of vehicles other than lorries that joined the highway at this entry point during this hour is 85.

♦ The number of vans that joined the highway at this entry point during this hour is five times the number of jeeps.

Exercise 23.2

(1) The number of child entry tickets that were issued by the Zoo on the four Sundays of the month of January is represented in the following picture graph.

First Sunday of the month	🧍 🧍 🧍 🧍 🧍 🧍 🧍
Second Sunday of the month	🧍 🧍 🧍 🧍 🧍 𝄇
Third Sunday of the month	🧍 🧍 🧍 🧍 🧍
Fourth Sunday of the month	🧍 🧍 🧍 🧍 🧍 🧍 𝄇

100 child entry tickets are represented by the symbol 🧍.

(i) On which Sunday of the month has the most number of child entry tickets been issued ?

(ii) On which Sunday of the month has the least number of child entry tickets been issued ?

(iii) How many child entry tickets were issued on the third Sunday of the month ?

(iv) How many child entry tickets were issued in total during the four Sundays in the month of January ?

(2) The time of arrival on a certain day, of the grade 6 students of a certain class is represented in the following picture graph.

From 7.05 a.m. to 7.10 a.m.	◯ ◿
From 7.10 a.m. to 7.15 a.m.	◯ ◖
From 7.15 a.m. to 7.20 a.m.	◯ ◯ ◯ ◖
From 7.20 a.m. to 7.25 a.m.	◯ ◯
From 7.25 a.m. to 7.30 a.m.	◯ ◿

Four students are represented by the symbol ◯ .

(i) How many students arrived during the period from 7.05 a.m. to 7.10 a.m.?

(ii) How many students arrived during the period from 7.15 a.m. to 7.30 a.m.?

(iii) On that day, no student arrived before 7.05 a.m. and by 7.30 a.m. all the students were present in the class. How many students are there in total in the class?

(3) When a grade 6 student is present in class on all 5 days of a week, he is awarded one star. The following picture graph represents the number of stars that four friends received for their attendance during the 14 weeks of the first term. (A star is not received when the attendance during a week is less than 5 days)

Sulalitha	✡ ✡ ✡ ✡ ✡ ✡ ✡ ✡ ✡ ✡ ✡ ✡ ✡
Dilitha	✡ ✡ ✡ ✡ ✡ ✡ ✡ ✡ ✡ ✡
Kumuditha	✡ ✡ ✡ ✡ ✡ ✡ ✡ ✡ ✡ ✡ ✡ ✡ ✡ ✡
Malitha	✡ ✡ ✡ ✡ ✡ ✡ ✡ ✡ ✡ ✡ ✡ ✡

5 days are represented by the symbol ✡ .

(i) Of these four friends, who received stars for attending school on all five days of each of the fourteen weeks?

(ii) During how many weeks did Malitha attend school on all 5 days?

(iii) If a student attended school on 69 days, how many stars should be drawn to represent his attendance?

(4) The number of registered letters received by a certain post office to be posted during the 5 days of a certain week is represented in the following picture graph.

Monday	✉ ✉ ✉ ✉ ✉ ◣
Tuesday	✉ ✉ ✉ ✉
Wednesday	✉ ✉ ✉ ✉ ✉ ✉ ◣
Thursday	✉ ✉ ✉
Friday	✉ ✉ ✉ ✉ ✉ ◣

6 letters are represented by the symbol ✉ .

(i) If the cost of registering a letter is Rs 30, what is the income received by the post office on Monday as registration fees?

(ii) Name the day on which the income from registering letters was highest, and find the relevant income.

(iii) How much did the post office earn during the five days by registering letters?

(5) The number of glasses of fruit drink sold at a certain stall on a certain day, is represented in the following picture graph.

Mango	
Water melon	
Orange	
Wood apple	
Avocado	

4 glasses of fruit drink are represented by the symbol

(i) Which type of drink has been sold the most?

(ii) If the price of a glass of wood apple drink is Rs. 12.00 and a glass of avocado drink is also Rs. 12.00, how much more was earned from wood apple drinks than from avocado drinks?

(iii) If 40 glasses of each type of drink had been prepared that day, find the number of glasses of drink of each type that remained unsold at the end of the day. Represent this information in a table.

Summary

- When data are given numerically in a table, data interpretation can be done in terms of these numbers.
- When the data are represented by picture graphs, data interpretation corresponding to the comparison of data can be done more conveniently.