Chapter – 3
Data Handling
Exercise 3.3

1. Use the bar graph to answer the following question.

Pets owned by students of class seven
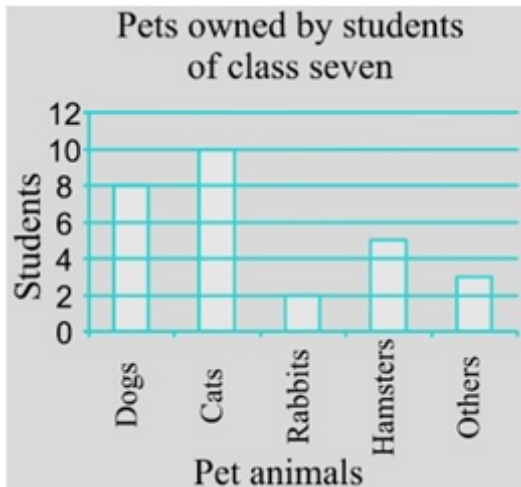
(a) Which is the most popular pet?

(b) How many students have dog as a pet?

Answer:

(a) Here,

According to the question,

We have to find the most popular pet among them.

Now,

Here,

The bar graph represents the pets owned by the students of class seven.

And,

We can see that,

The bar of the cat is the tallest

Hence,

Cat is the most popular pet.

(b) Here,

According to the question,

We have to find the number of students who have dog as a pet.

Now,

Here,

We know that,

The bar graph represents the pets owned by the students of class seven.
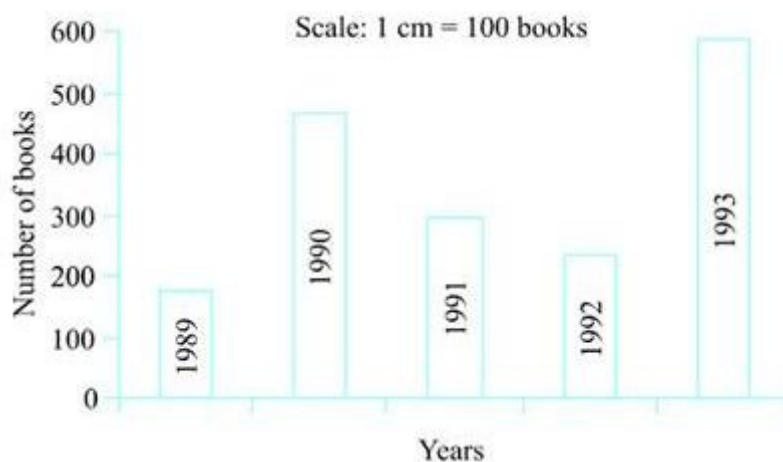
And,

We can see that,

The bar of the dog is till 8

Hence,

8 students have dog as their pet.

2. Read the bar graph which shows the number of books sold by a bookstore during five consecutive years and answer the following questions:

(i) About how many books were sold in 1989? 1990? 1992?
(ii) In which year were about 475 books sold? About 225 books sold?

(iii) In which years were fewer than 250 books sold?

(iv) Can you explain how you would estimate the number of books sold in 1989?

Answer:

(i) Here

We can say that,

While observing the graph,

The total books sold in the year 1989, 1990 and 1992 are as follows:

Number of books sold in 1989 = 180

And,

Number of books sold in 1992 = 220

And,

Number of books sold in 1990 = 480

(ii) Here,

We have to find,

The year in which the following number of books were sold:

475

And,

225

Hence,

While observing the graph,

We can say that,

475 books were sold in the year 1990

And,

225 books were sold in the year 1992

(iii) Here,

We have to find,

The years in which the books sold were less than 250 books

Hence,

While observing the graph,

We can conclude that,

The years in which the total number of books sold was less than 250 are as follows:

The year 1989 and the year 1992.

(iv) Now,

According to the question,

From the graph,

We can conclude that,

The number of books sold in the year 1989 is about 1 and th part of 1 cm.

Now,

We know that,

The scale here is:

1cm = 100 books

Hence,

$$100 + \frac{3}{4}^{th} \times 100$$

$$= 100 + 75$$

$$= 75$$

Thus,

About 175 books were sold in the year 1989.

We estimated this number by drawing a horizontal line from the top of 1989 bar to y-axis where the line touches y-axis in the number of books.

3. Number of children in six different classes are given below. Represent the data on a bar graph.

Class	Number of Children
Fifth	135
Sixth	120
Seventh	95
Eighth	100
Ninth	90
Tenth	80

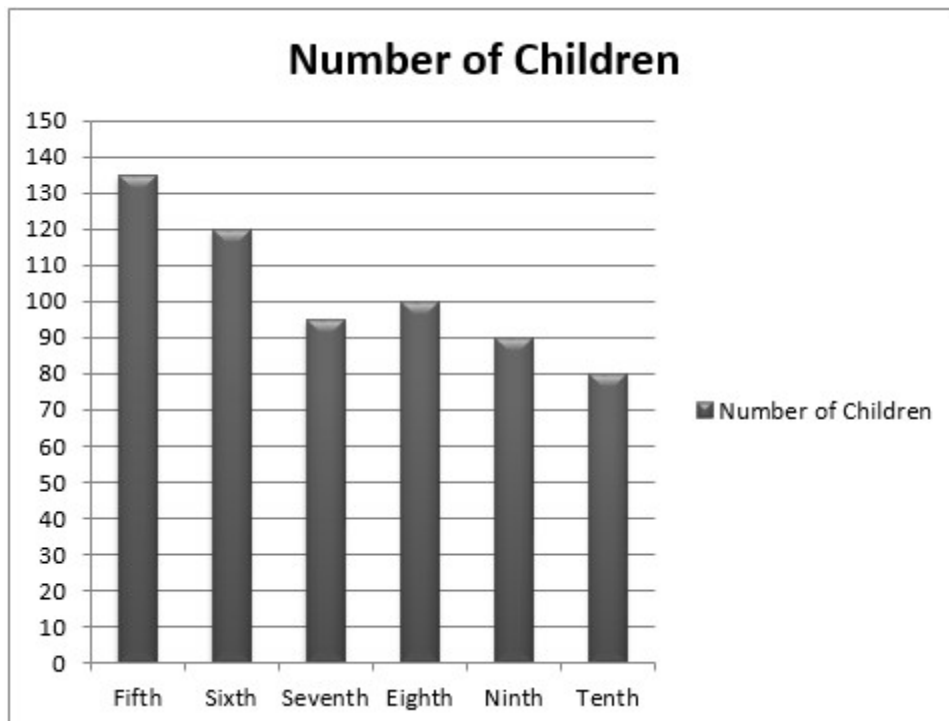(a) How would you choose a scale?
(b) Answer the following questions:
(i) Which class has the maximum number of children? And the minimum?
(ii) Find the ratio of students of class sixth to the students of class eighth.

Answer:

The bar graph of the given data is represented below:

Number of Children

(a) Here,

We will choose a scale as follows:

1 unit = 10 children

We will take this scale because with this scale we can represent a better and clear difference among the number of students of class 7th and class 9th.

(b) .

(i) We can see that,

The tallest bar is of class fifth

Hence,

We can say that,

The maximum number of students are in class fifth.

Similarly,

We can observe that,

The smallest bar is of class tenth

Hence,

We can say that,

There are least number of students in class tenth.

(ii) Now,

Here,

We can clearly see that,

There are 120 students in class sixth

And,

There are 100 students in class eighth

Hence,

The ratio between the number of students of class sixth and the number of students of class eighth can be calculated as follows:

$$= \frac{120}{100}$$

$$= \frac{6}{5}$$

$$= 6 : 5$$

4. The performance of a student in 1st Term and 2nd Term is given. Draw a double bar graph choosing appropriate scale and answer the following:

Subject	1st term (M.M. 100)	2nd Term (M.M. 100)
English	67	70
Hindi	72	65
Maths	88	95
Science	81	85

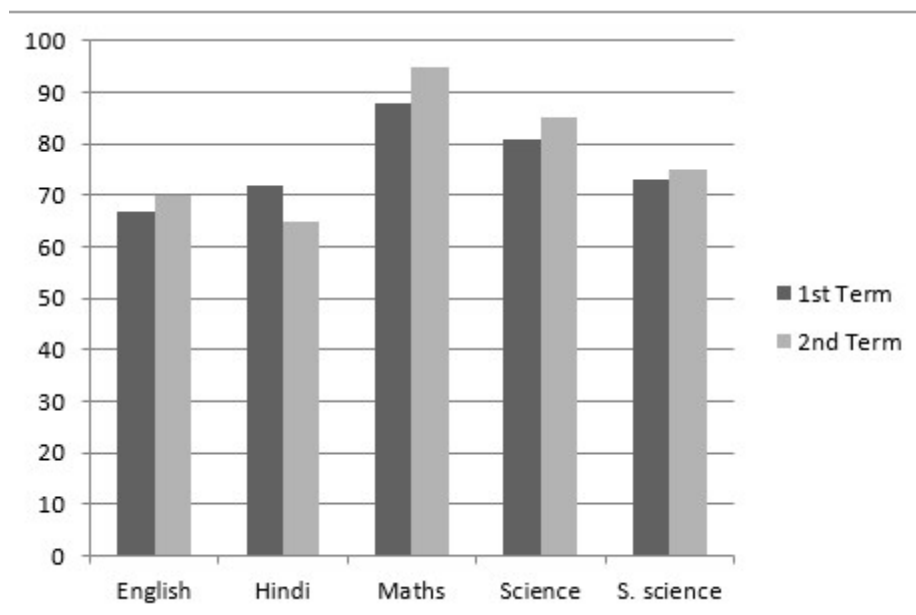|		
S. Science	73	75

(i) In which subject, has the child improved his performance the most?

(ii) In which subject is the improvement the least?

(iii) Has the performance gone down in any subject?

Answer:

As per the question:

The double bar graph of the given data is made below:

(i) Here,

We can see that,

Math had a maximum increase in marks.

Hence,

It can be concluded that,

The child had improved his performance the most in Maths.

(ii) Here,

We can see that,

S. science had the least increase in marks.

Hence,

It can be concluded that,

The child had improved his performance the least in S. science.

(iii) Here,

We can observe that,

From the given graph,

Hindi has a decrement in marks in the second term

Hence,

It can be concluded that,

The child's performance has gone down in Hindi.

5. Consider this data collected from a survey of a colony.

Favourite Sport	Cricket	Basket Ball	Swimming	Hockey	Atheletics
Watching	1240	470	510	430	250
Participating	620	320	320	250	105

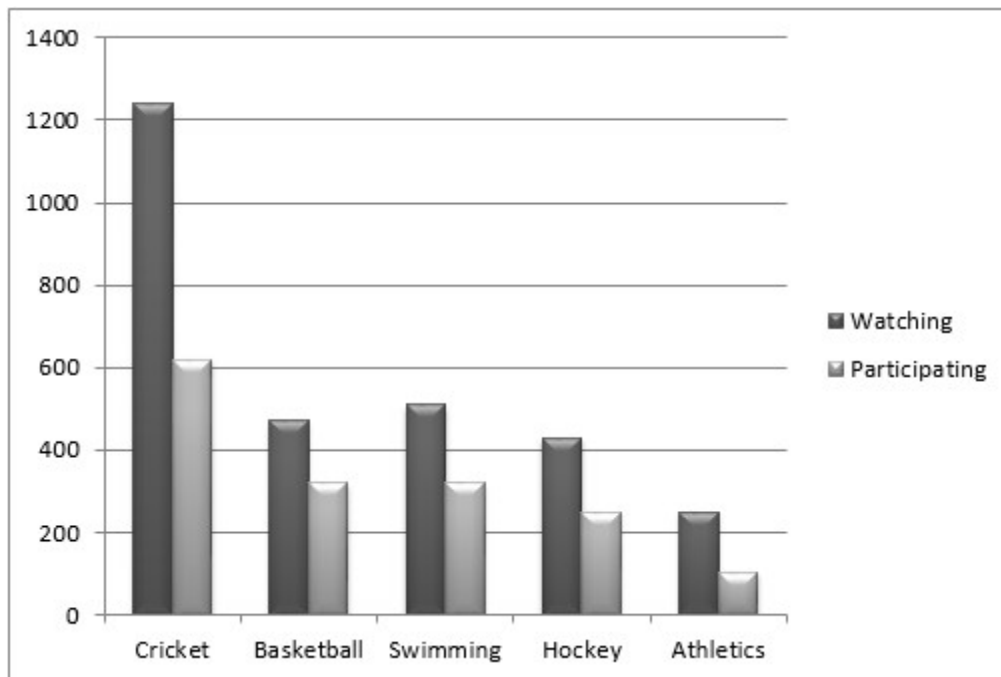(i) Draw a double bar graph choosing an appropriate scale.
What do you infer from the bar graph?
(ii) Which sport is most popular?
(iii) Which is more preferred, watching or participating in sports?

Answer:

(i) We can draw the double graph of the given data as follows:

Now,

As per the question,

The double bar graph represents the number of people who like watching and participating in various sports.

Now,

We can observe that,

The maximum number of people are fond of either watching or participating in cricket.

And,

The least number of people are fond of either watching or participating in athletics.

(ii) Here,

From the drawn bar graph,

We can observe that,

The tallest bar representing the people who like either watching or participating any sport is of cricket.

Hence,

It can be concluded that,

Cricket is the most popular game whom people either like to watch or participate.

(iii) Here,

From the drawn bar graph,

We can observe that,

The bars representing watching sports are longer than the bars representing participating in sports.

Hence,

We can conclude that,

Watching sports is preferred over participating in sports.

6. Take the data giving the minimum and the maximum temperature of various cities given in the beginning of this Chapter. Plot a double bar graph using the data and answer the following:
(i) Which city has the largest difference in the minimum and maximum temperature on the given date?
(ii) Which is the hottest city and which is the coldest city?
(iii) Name two cities where maximum temperature of one was less than the minimum temperature of the other.
(iv) Name the city which has the least difference between its minimum and the maximum temperature.

Answer:

Here,

The bar graph of the given data can be creates as follows:
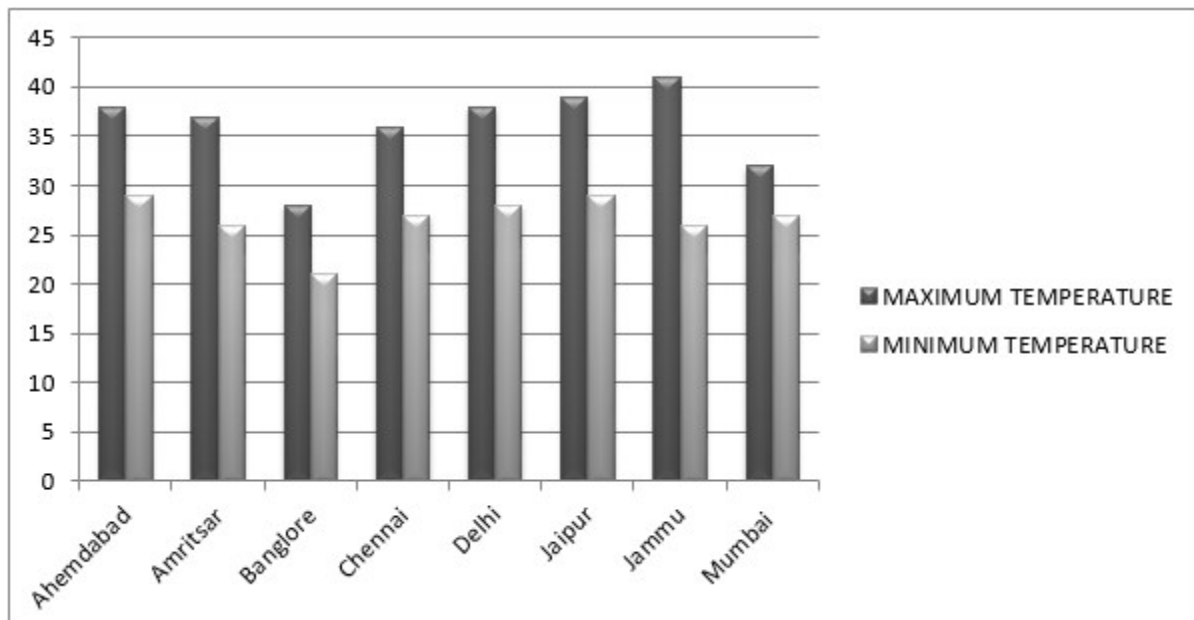
(i) Here,

According to the question,

We have to find the city with the largest difference in its maximum and minimum temperature.

Therefore,

We can observe that,

From the graph,

The largest difference between the maximum and minimum bars is of Jammu.

Hence,

It can be concluded that,

Jammu is city with the largest difference in its maximum temperature and minimum temperatures on 20.06.2006

(ii) Here,

According to the question,

We have to find the hottest and coolest city from the given cities while looking into the graph.

And,

We know that,

Hottest city would have the maximum temperature

And,

Coolest city would have the least temperature.

Therefore,

We can observe that,

From the graph,

The highest bar of maximum temperature is of Jammu.

Hence,

Jammu is the hottest city.

And,

The lowest bar of minimum temperature is of Bangalore,

Hence,

Bangalore is the coolest city among the given cities.

(iii) Here,

According to the question,

We have to find the two cities where maximum temperature of one was less than the minimum temperature of the other.

Therefore,

We can observe that,

From the graph,

Bangalore has its maximum temperature as 28°C

Whereas,

The minimum temperature of the following two cities is 29°C

Jaipur

And,

Ahmedabad

Hence,

It can be concluded that the required pair of two cities are,

Bangalore and Jaipur

And,

Bangalore and Ahmedabad

(iv) Here,

According to the question,

We have to find the city with the least difference in its maximum and minimum temperature.

Therefore,

We can observe that,

From the graph,

The least difference between the maximum and minimum bars is of Mumbai.

Hence,

It can be concluded that,

Mumbai is city with the least difference in its maximum temperature and minimum temperatures on 20.06.2006.