DATA HANDLING

ATOMIC ENERGY EDUCATION SOCIETY

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CLASS : Eight

SUBJECT : Mathematics

TOPIC

Data Handling

MODULE: 1/5

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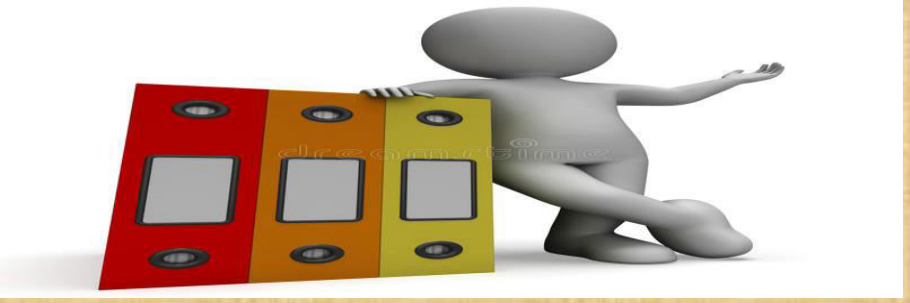
1. Data and important terms
2. Graphical representation of data.
    a) Pictograph
    b) Bar graph
    c) Double bar graph

- The word data means information. Data is usually collected in the context of a situation that we want to study.
- EXAMPLES :

1. Runs made by a batsman in the last 10 test matches.
2. Number of story books read by each of your friends.

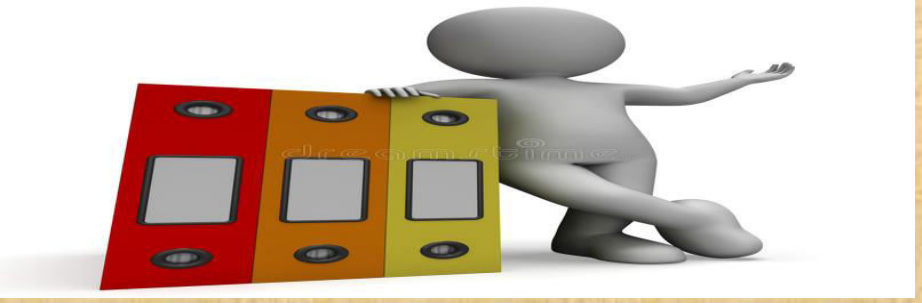
- **Data mostly available to us in an unorganized form is called raw data.**

- **Arranging data in an order to study their salient features is called presentation of data.**



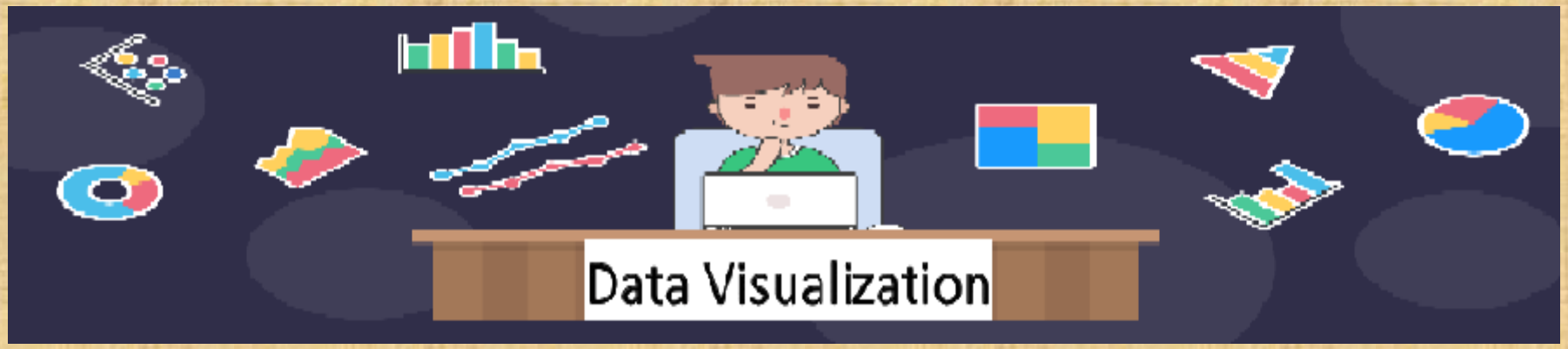
Organising data

- Suppose there are 20 employees in an office. They were asked how many children they have. The results were:
  1,2,3,1,0,2,2,0,1,2,2,1,3,0,0,1,1,0,3,1
- Each entry in the above list is a numerical fact called an observation and the collection of these observations is the Raw data.
- When this data is arranged in ascending or descending order ,then the data arranged is called Data array or arrayed data.



Organising data

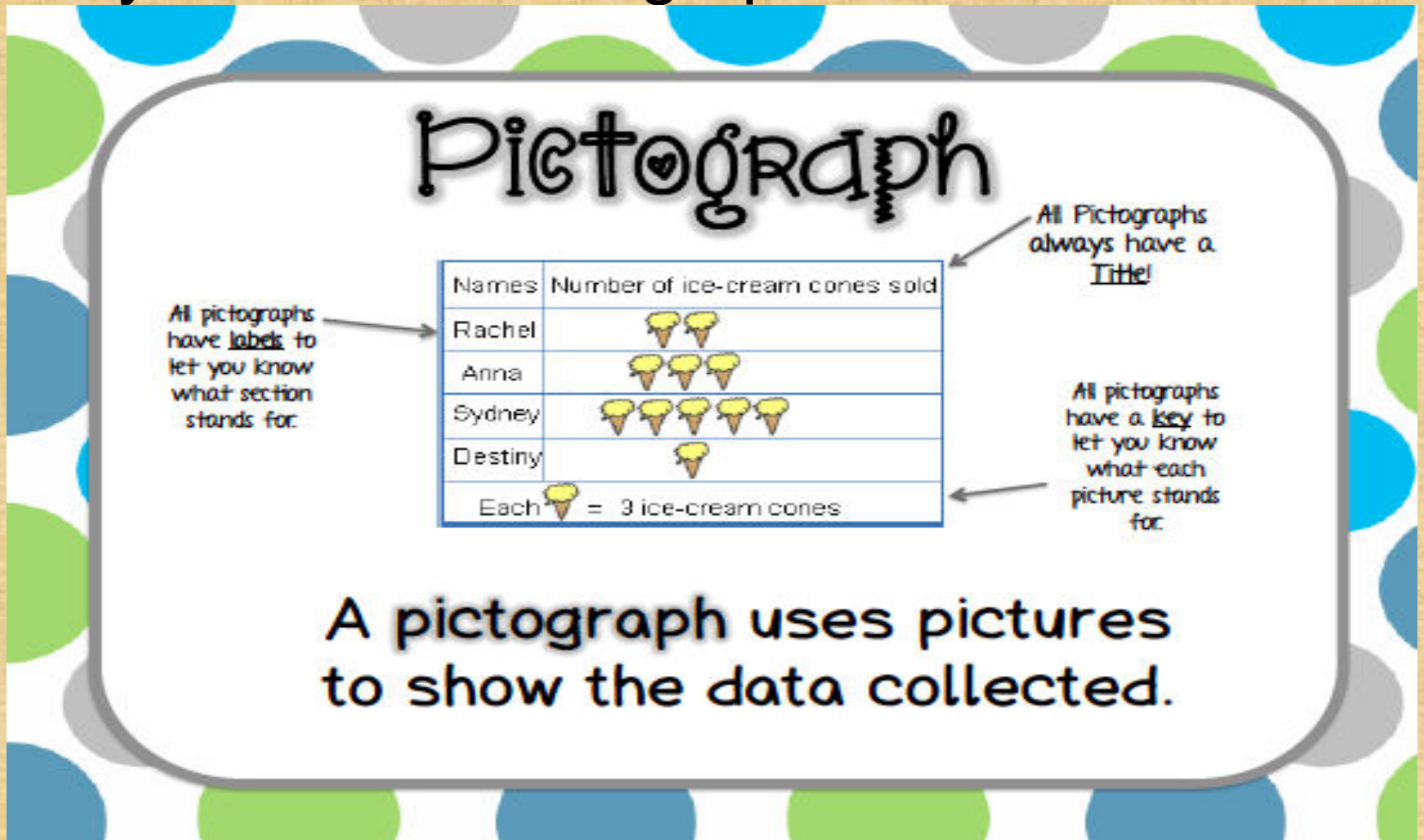
- The presentation of the data as arrayed data gives much more information
- Arrayed data
  0,0,0,0,0,1,1,1,1,1,1,1,2,2,2,2,2,3,3,3
- Highest value = 3 and lowest value =0. So, their difference is 3 i.e Range is 3
- The **Range** is the difference between the lowest and highest values.
- Example: In {4, 6, 9, 3, 7} the lowest value is 3, and the highest is 9. So the **range** is 9 − 3 = 6.



- Data can be visualized using graphs
- Data is represented graphically to give a clear idea of what it represents.
- The different types of graphs are:
  1. Pictograph
  2. Bar graph
  3. Double bar graph
  4. Histogram
  5. Pie chart

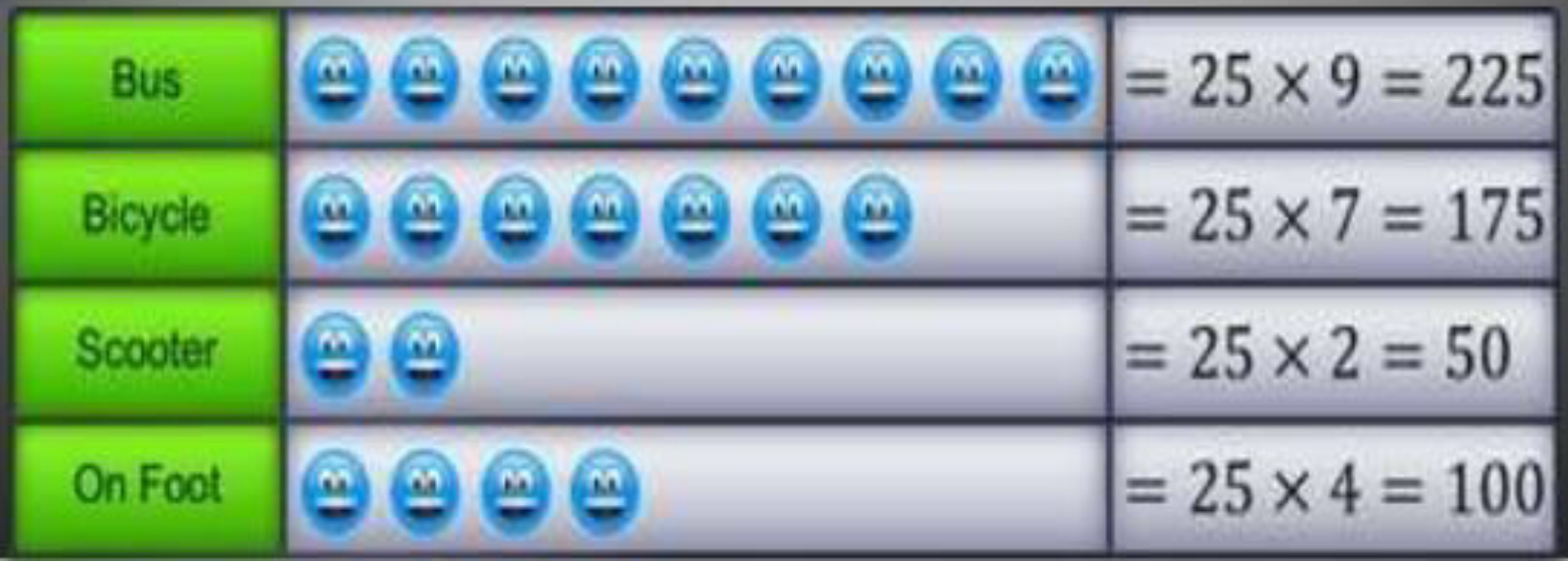
PICTOGRAPH

- Pictorial representation of data using symbols is a Pictograph



Pictographs

Pictographs represent data through appropriate **pictures**. In pictographs, the same type of **symbol** or **picture** is used to represent the data. Each symbol is used to represent a certain value, and this is mentioned clearly in the graph



PICTOGRAPHS

CHAPTER **5**

Data Handling

5.1 Looking for Information

In your day-to-day life, you might have come across information, such as:

(a) Runs made by a batsman in the last 10 test matches.
(b) Number of wickets taken by a bowler in the last 10 ODIs.
(c) Marks scored by the students of your class in the Mathematics unit test.
(d) Number of story books read by each of your friends etc.

The information collected in all such cases is called **data**. Data is usually collected in the context of a situation that we want to study. For example, a teacher may like to know the average height of students in her class. To find this, she will write the heights of all the students in her class, organise the data in a systematic manner and then interpret it accordingly.

Sometimes, data is represented **graphically** to give a clear idea of what it represents. Do you remember the different types of graphs which we have learnt in earlier classes?

1. **A Pictograph:** Pictorial representation of data using symbols.

= 100 cars ← One symbol stands for 100 cars		
July	= 250	denotes $\frac{1}{2}$ of 100
August	= 300	
September	= ?	

(i) How many cars were produced in the month of July?
(ii) In which month were maximum number of cars produced?

Answer:

i) Cars produced in the month of July =

100 + 100 + 50 = 250

ii) Maximum number of cars were produced in the month of September i.e 100+100 +100 +100 = 400

PICTOGRAPHS

One represents 10 Trees	
Name	Number of Trees
Apple	
Peach	
Guava	
Pear	

Q1.Name the tree which is maximum?

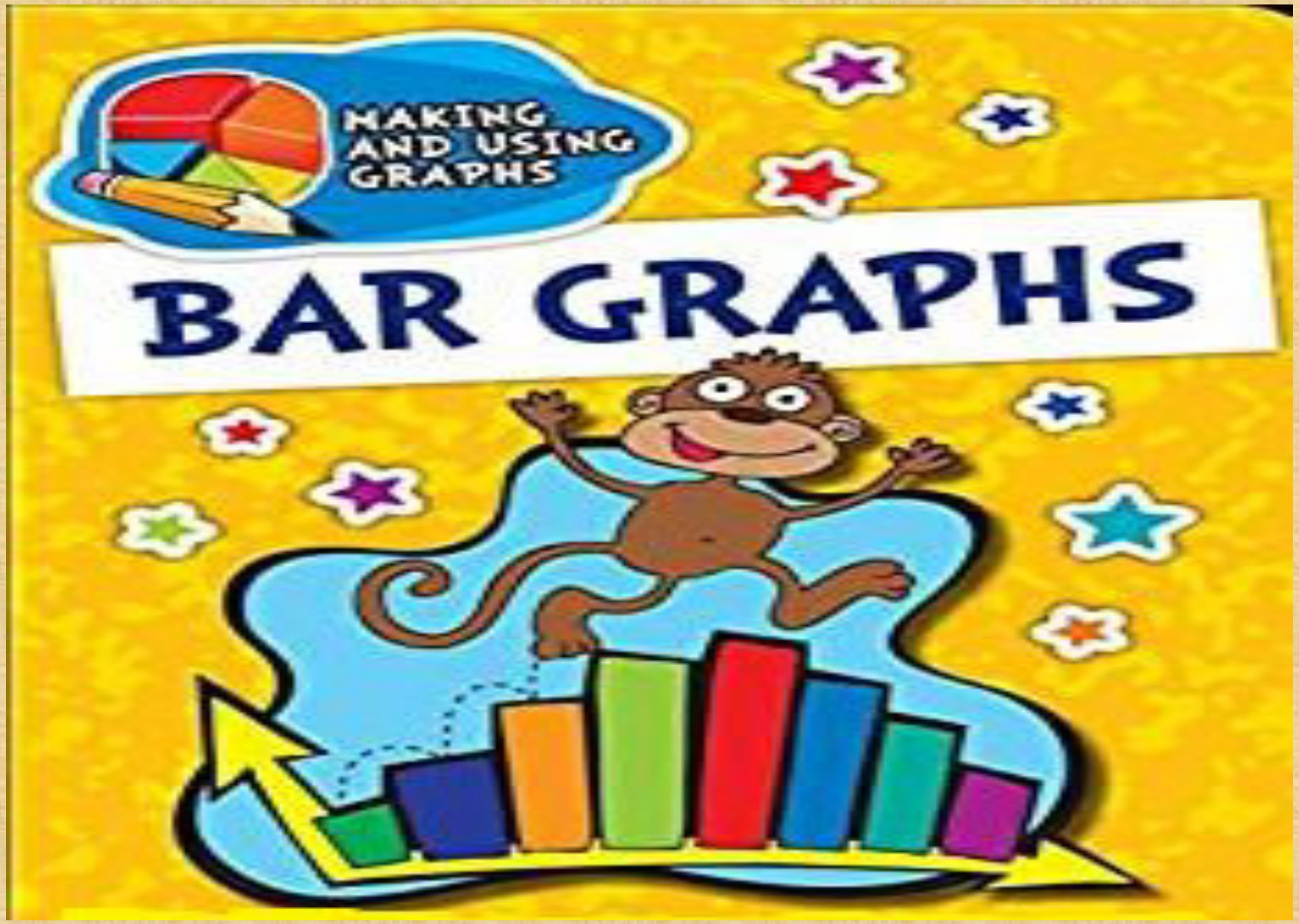
A) Guava tree

Q2. By how much is Peach tree more than Pear tree?

A) 20

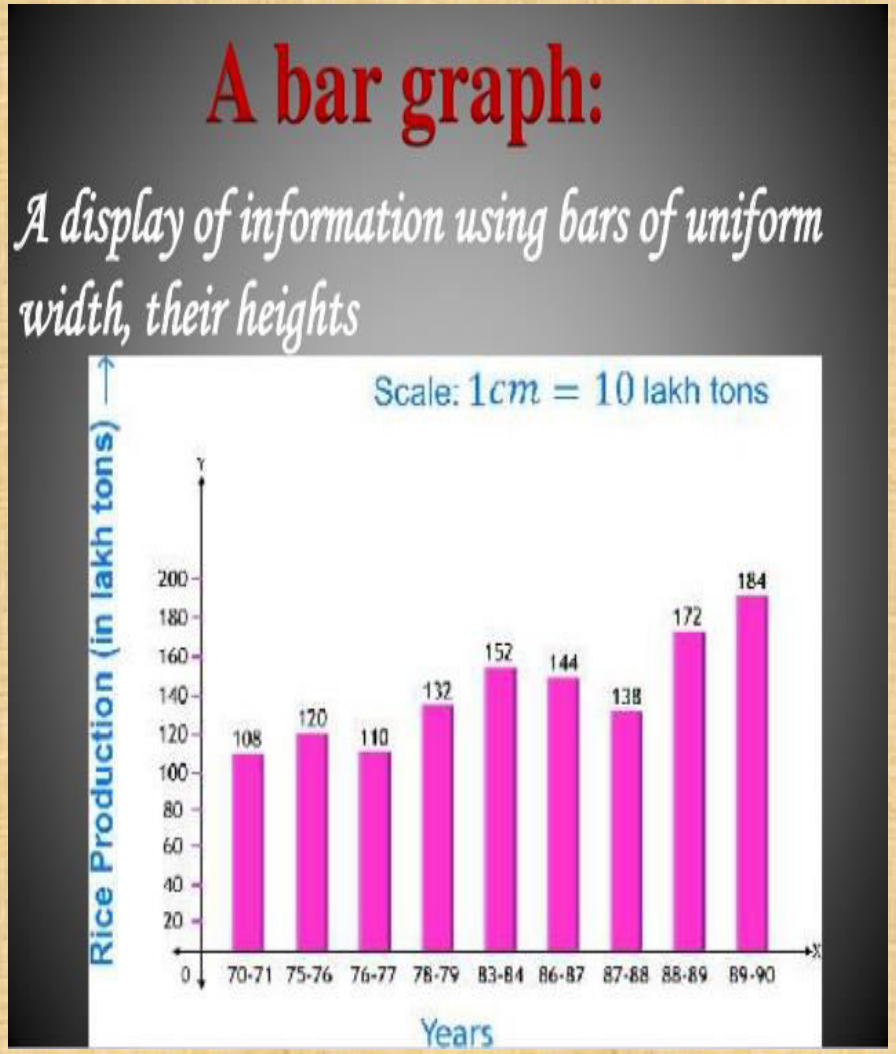
Q3. Find the total number of trees?

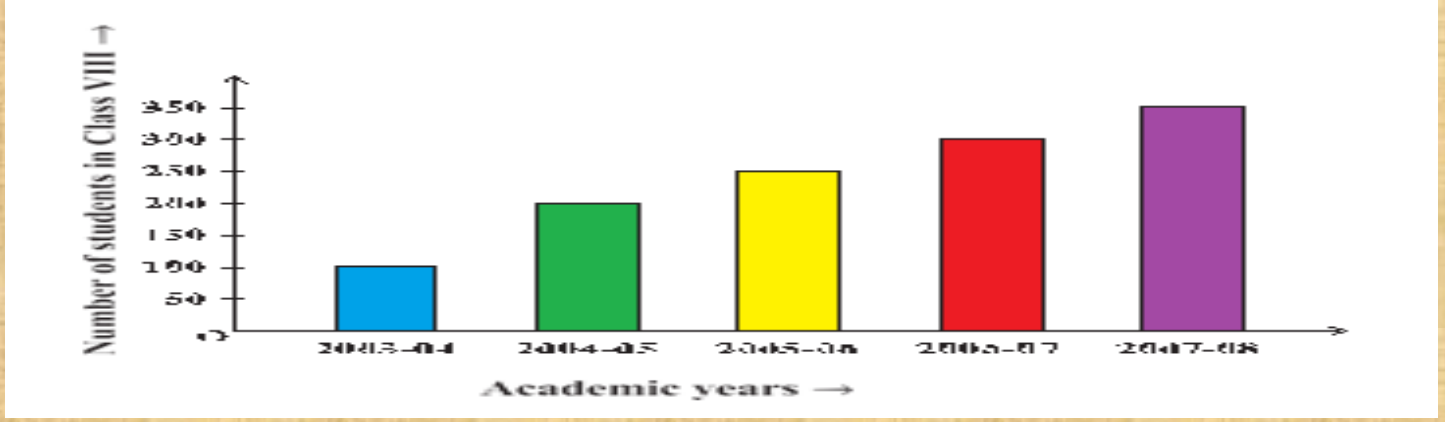
A) 140 trees


MAKING AND USING GRAPHS
BAR GRAPHS

BAR GRAPHS

- A bar graph is a pictorial representation of data in which rectangular bars of uniform width are drawn with equal spacing between them on one axis, usually the x axis.
- The value of the variable is shown on the other axis that is the y axis.
- Bar heights give the quantity for each category.





Read the above bar graph and answer the questions given .

(i)What is the information given by the bar graph?

Ans- The bar graph is representing the number of students in class 8 during academic years.

(ii) In which year is the increase in the number of students maximum?

Ans- The increase in number of students is maximum in year 2004-05 because increase in 2004-05 is 200-100 =100.

(iii) In which year is the number of students maximum?

Ans- In 2007-08 the number of students is maximum i.e. 350.

(iv) State whether true or false:‘The number of students during 2005-06 is twice that of 2003-04”.

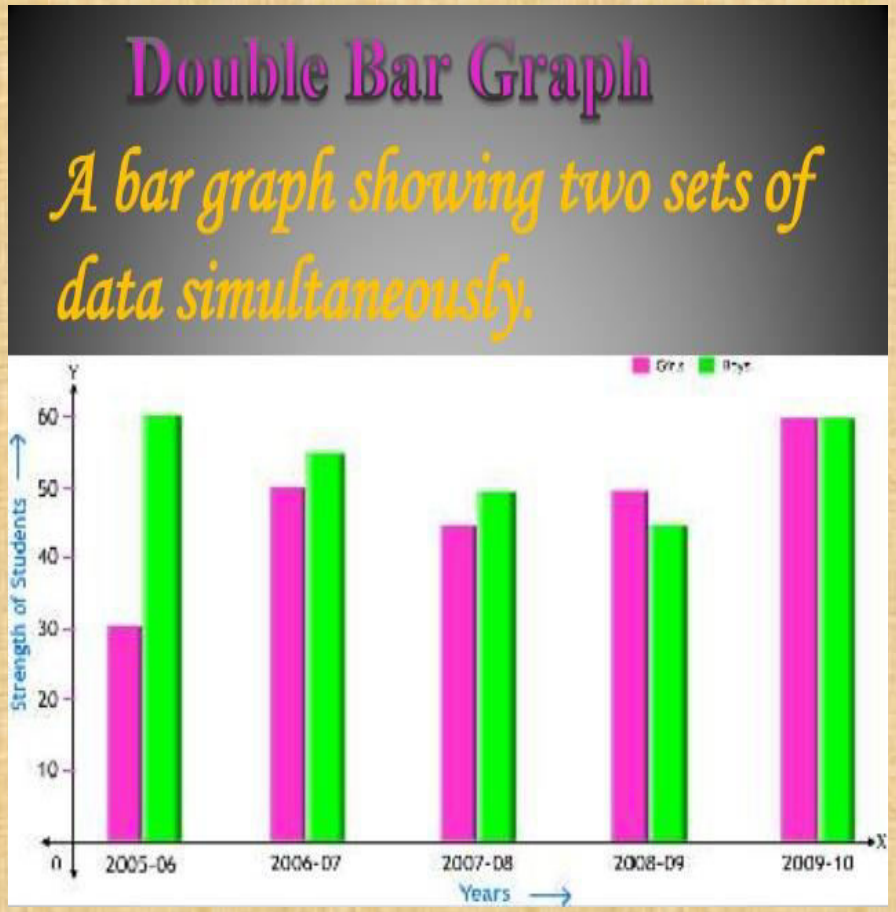
Ans- False.

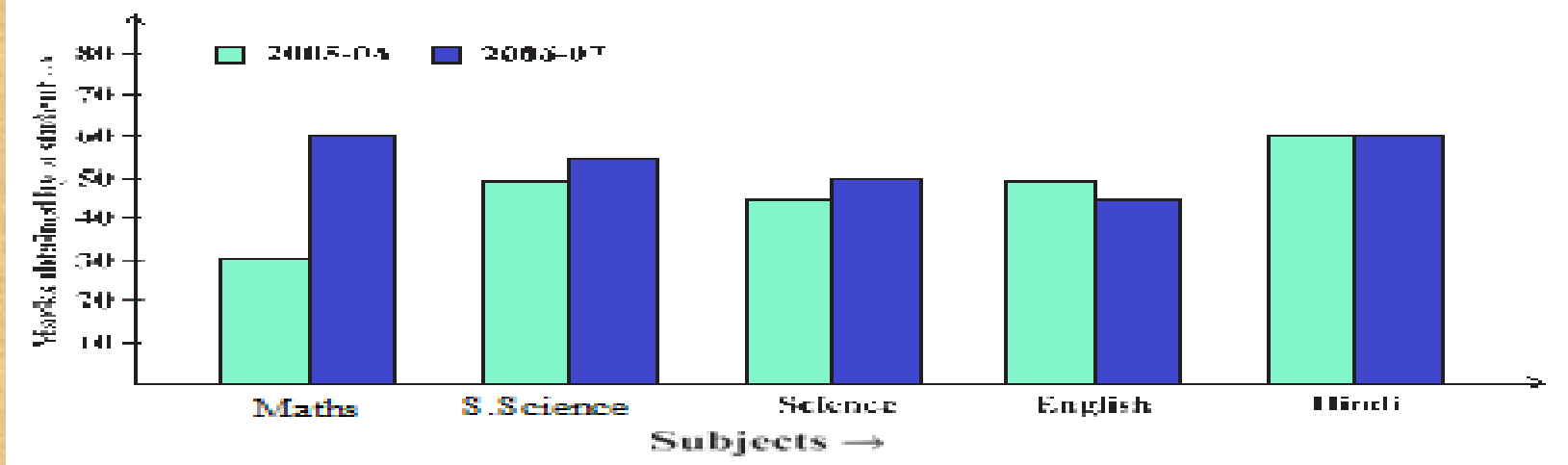
Draw an appropriate bar graph to represent the given information

FRUITS	QUANTITY IN Kg
Apple	35
orange	30
banana	10
kiwi	25
Blue berry	40
grapes	5

DOUBLE BAR GRAPHS

- Double bar graph shows two sets of data simultaneously
- It is useful for the comparison of data





Read the above double bar graph and answer the questions given

(i) What is the information given by the double bar graph?
Ans- The double bar graph represents the marks obtained by a student in different subjects during 2005-06 and 2006-07.

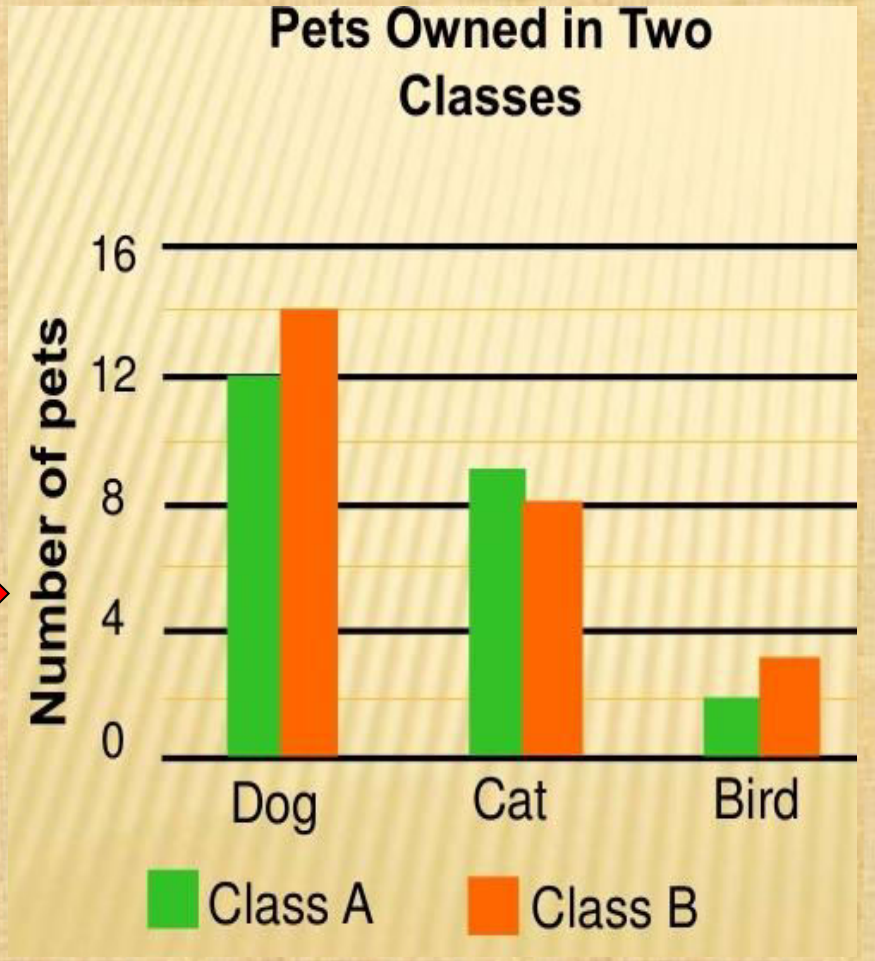
(ii) In which subject has the performance improved the most?
Ans- The performance has improved in Maths the most.

(iii) In which subject has the performance deteriorated?
Ans- The performance has deteriorated in English.

(iv) In which subject is the performance at par?
Ans- The performance in Hindi is at par.

Draw an appropriate graph to represent the information in the table showing the number of pets owned by students in two classes.

Pet	Class A	Class B
Dog	12	14
Cat	9	8
Bird	2	3



ASSIGNMENT

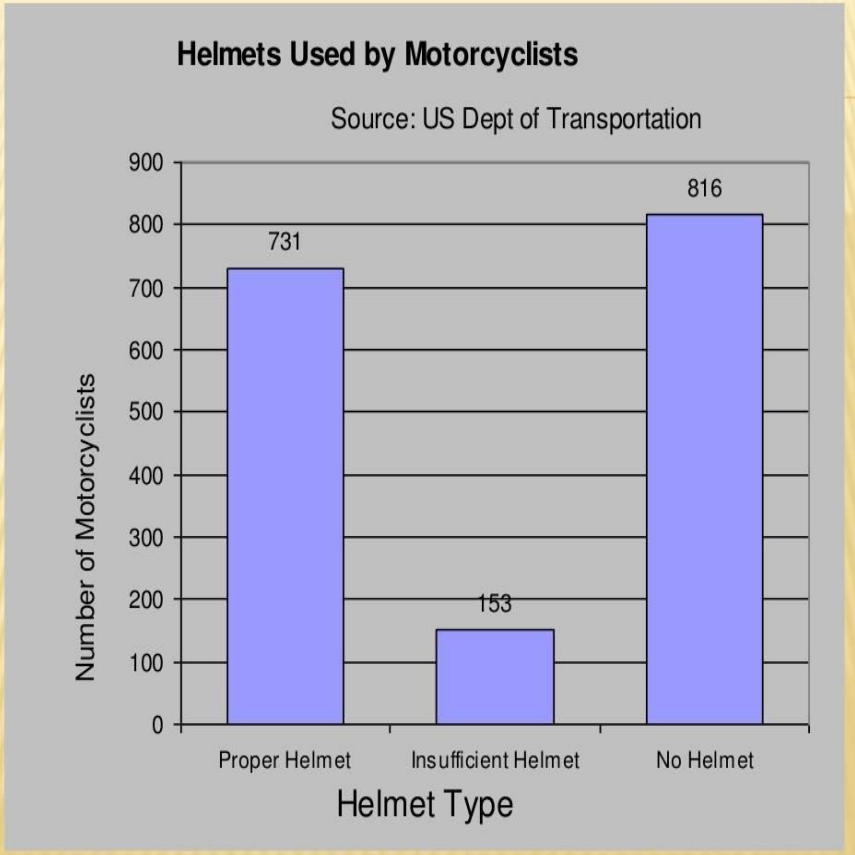
Q1. Read the pictograph and answer the question.

a) How many flowers were produced in the month of January?

b) In which month were maximum number of flowers produced?

c) Find the total number of flowers produced in the month of May if its produce is 6 more than twice that of March?

Q2. Read the Bar graph and answer the question.



a)What is the information given by the bar graph?

b) In which Helmet type were the Motorcyclists maximum?

c) State whether true or false:'The number of Motorcyclists using Proper Helmet is twice that of Insufficient Helmet?'

Q3. Read the Double Bar graph and answer the question.

a)What is the information given by the double bar graph?

b) In which sports is the difference maximum ,in their interest level ?

c) Name the sport in which both the boys and the girls are equally interested?

Q4. Draw a bar graph to represent the given information

Mode of transport	Frequency
Walking	29
Cycling	15
Car	35
Bus	18
Train	3

Q5. Draw a double bar graph to represent the given information

What is Your Favorite Kind of Book?

	Boys	Girls
Mystery	29	23
Adventure	35	28
Science Fiction	14	20
Biography	8	17
Other	5	3

Q6, Q7 and Q8 are Try These in page 71 of class8 NCERT Textbook.

Grades
Thanks
THANK
YOU!