

Master Lesson Plan

For

Data Handling

Board	Standard	Subject	Chapter	Language	Reference Link	Creation date
CBSE	STD VI	Mathematics	Data Handling	English	Data Handling	2019-06-07 20:53:45

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Data Handling

1. MS_Objectives_Data Handling

Notes to the teacher:

This asset lays down the proposed plan for transacting this chapter.

It states the asset objectives of the MLP. This asset is for teacher's reference and need not be taught to the students.

Students will be able

- To tell why the information given and come to a conclusion.
- To explain the concept of Data.
- To explain the concept of Raw Data, classification, organisation and Tally marks method for the raw Data.
- To demonstrate the activity and make them to do it.
- To differentiate the different type of questions and answer accordingly.
- To explain the concept of Pictograph with examples.
- To describe the concept of creating the Pictograph for a given data.
- To collect the data and create pictographs.
- To enjoy with interesting history on Pictographs.
- To list the places of uses of Pictographs.
- To observe the diagram and answer the questions.
- To practice the value of Discipline in our Life.
- To explain of how to draw the Bar Graphs for a given Data.
- To identify which type of graph to be used for a given data.
- To describe the concept of Bar Graph with suitable examples.
- To apply the concepts and answer the various type of questions.
- To solve the different types of questions using the concepts they have learnt.

Time to teach	Asset Type	Theme	SubTheme
3 Minutes	Main Script	Data Handling	

2. IQ_What is Data?

Teacher asks the following questions. Teacher asks the students to be sincere while answering these questions.

(i) What information is available in our class attendance register?

Ans: Roll number, names, number of days a student was present, number of days a student was absent etc.

(ii) Have you seen a Mark list? What information can we get from a Mark list?

Ans: Mark list will give information like marks obtained by each student in different subjects.

We can also find who has got the highest mark or the least mark; the number of students with the same marks etc.

(iii) After a cricket match, from where do you get the information about number of overs played, number of runs scored by each player, wickets gone and etc.?

Ans: From score board.

From the above questions, what can you identify?

Every question gives a particular information or Data.

Hence, "A data is a collection of numbers or facts or details gathered to give some information."

Time to teach	Asset Type	Theme	SubTheme
5 Minutes	Inquisitive Questions	Data Handling	

3. MS_Data - Introduction

INTRODUCTION TO THE TOPIC

Example 1:

If you (10 of you) go to a hotel and order in this way:

A – Dosa C – Idly E – Masala Dosa G- Plain Dosa I- Idly B – Vada D- Idly F – Onion

Dosa H – Vada J- Plain Dosa What will the waiter do?

He first takes out a paper and write the order. Then he would go to the kitchen and order for 3-dosa, 2-vada, 3-idly, 1- Masala dosa and 1- Onion dosa.

What did the waiter do?

He has arranged the orders into groups and gave the same information to the cooks.

So, we observe that for the better understanding of the information we need to group the data into groups based on the varieties available. This grouped data can be represented in the form of a table.

Dosa	3
Vada	2
Idly	3
Masala Dosa	1
Onion Dosa	1

Definition:

Data is a collection of facts, such as numbers, words, measurements, observations or even just descriptions of things, gathered to give some information.

2) Example:

Alok and Sheela went to super market along with their mother. As mother was busy shopping, Alok and Sheela sat at the entrance of the super market. They observed that the customers coming to the super market were wearing dresses of different colours.

So, they started playing a game based on these observations.

Alok and Sheela sat near the steps of the entrance and started counting:

Steps:

1) They took a small paper and made a table like the one given below: (Table 1)

2) Since they did not know the names of the people, whenever they saw a person wearing a green or red or blue colour or other colour dress, they marked it as 1 in the respective colour of the count column.

Table 1

Colour	Count	Total
Green	1+1+1+1+1+1+1+1+1+1	11
Red	1+1+1+1+1+1+1+1+1+1+1+1	14
Blue	1+1+1+1+1+1+1	7
White	1+1+1+1+1+1	8
Black	1+1+1+1	5

What do we observe from the above table? Alok has collected some details – numbers or count of customers who have been classified according to the colour of dresses they wore. Such collection of details is called Data.

Table Source: All tables are original contribution by girijashankaran@gmail.com

Time to teach	Asset Type	Theme	SubTheme
15 Minutes	Main Script	Data Handling	

4. MS_Raw Data and Tally Marks

Raw Data

Example 1:

Let's take this example:

Ramya has collected the age of her friends and it is as follows:

10,9,8,10,9,8,8,9,9,10,10,8,8,9,9,9,9,8,8,10,8,10,9,9,9.

The data given above is not in an order. In other words, it is not arranged. This type of Data which is not classified or arranged is called as Raw Data.

Classification of Data:

Example 2:

If you (10 of you) go to an ice cream parlour, and order in this way:

1. Vanilla
2. Chocolate
3. Mango
4. Mango
5. Butterscotch
6. Strawberry
7. Vanilla
8. Chocolate
9. Mango
10. Vanilla

The waiter would first take out a paper and write the order. He would then go to the kitchen and order for 3-Vanilla, 2-Chocolate, 3-Mango, 1- Butterscotch, and 1- Strawberry.

Vanilla	3
Chocolate	2
Mango	3
Butterscotch	1
Strawberry	1

The above data which is arranged in order or tabulated is called as Classification of Data.

Tally Marks:

If you (10 of you) go to a hotel and order in this way:

- u - Dosa
- v - Vada
- w - Idly

x - Masala dosa

y - Onion dosa

z - Dosa

AA - Vada

BB - Idly

CC - Dosa

DD - Idly

We can even represent this information in the following way:

Dosa	
Vada	
Idly	
Masala dosa	
Onion dosa	

These straight lines are called as tally marks. These lines can be again grouped for better reading of the information.

Sita has collected the age of her friends and it is as follows:

10 9 8 10 9 8 8 9 9 10 10 8 8 9 9 9 9 8 8 10 8 10 9 9 9
9 9 8 8
8 10 10 10 8 8 8 8 8 8 8 9 8

This information can be represented in the following tabular form:

AGE OF THE STUDENTS	TALLY MARKS	NUMBER OF STUDENTS
8 years		19
9 years		15
10 years		9

Note: The tallying can be done in group of either 10 or any other number, but for general consideration, we make 5 as one group.

First four lines are drawn representing four counts and a cross is kept over the four lines indicating the fifth count. Like this the tally marks are made.

Time to teach	Asset Type	Theme	SubTheme
15 Minutes	Main Script	Data Handling	

5. SA_Activity on Grouping the Data and Tally

Aim: To learn and understand formation of different groups in a practical way.

Type of the activity: Group

Setting of the activity: Indoor/Classroom

Materials required: None

Preparation: Note down different kinds of activities to keep the students engaged on a day-to-day basis.

Procedure:

Ask the students to think of any good deed or deeds /good acts that they performed in the previous week. Ask them to make a note of them in the note book.

Examples of some good act/good deed

1. Had taken part in gardening.
2. To help mother in household work.
3. To help old people cross the road.
4. To help grandparents to get newspaper, misplaced spectacles etc. (any kind of small help).
5. To help sister or brother wear the shoes before going to school.
6. To help friends in doing the homework.

Based on the information collected they can group it.

Instruction to teacher: Keep in mind the activities that the students of that age would engage in, and to lay emphasis on helpful acts.

Conclusion: This activity exhibits how to form different groups using the given data.

Activity 2:

Aim: To enable the students to prepare a tally chart for the information collected above.

Type of the activity: Individual

Setting of the activity: Indoor/Classroom

Materials required: Information/data from the previous activity on

groups, data from different sources, chart Preparation: None

Procedure:

- Show a chart of tally marks
- Data collected is copied, and tally marks are put against them

Instruction to the teacher: Kindly show an example first and ask students to follow.

Example of Tally Marks: Mode of Transport used by 40 workers working in Rubber factory.

Mode of Transport	Tally Mark	No. of Students
Bus	III III III I	16
Train	III	5
Cycle	III II	7
By Walk	III III II	12
TOTAL		40

Conclusion: Information in the form of numbers can be converted to tally marks.

Time to teach	Asset Type	Theme	SubTheme
15 Minutes	Suggested Activity	Statistics	Grouping data, Grouping data

6. QA_Assessments - Data and Tally

Very Short Answer Questions:

Q 1) In a mathematics test, the following marks were obtained out of 9 by 40 students.

8	1	3	7	6	6	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	6	9	5	6	4	4	6	6

(a) Arrange these marks in a table using tally marks.

(b) How many students obtained marks equal to or more than 7?

(c) How many students obtained marks above 3?

Q 2) Following is the choice of fruits of 34 students of class VI.

Apple, Orange, Apple, Banana, Banana, Orange, Grapes, Apple, Banana, Orange, Grapes,
Apple, Grapes, Banana, Orange, Orange, Grapes,
Apple, Banana, Banana, Apple, Grapes, Orange, Orange, Grapes, Apple, Orange, Grapes,

Banana, Banana, Apple, Banana, Apple, Apple Make the Tally Table and answer the following questions from the Tally Table.

Answer the following Multiple choice questions:

(a) How many children like Banana fruit?

(i) 7 (ii) 15 (iii) 10 (iv) 9

(b) Which fruit is preferred by most of the students?

(i) Apple (ii) Orange (iii) Banana (iv) Grapes

(c) Find the total number of children who like Grapes and Orange

(i) 18 (ii) 15 (iii) 16 (iv) 17

Q.3)

Mahima was asked to collect data for size of shoes of students in her class. She recorded her findings as shown below:

4 5 7 8 4 5 4 7 8 6 5 4

7 8 6 4 5 7 6 7 6 4 5 6

Arrange the data in a table using tally marks. From the table answer the following questions

1. What size of shoes is worn by maximum number of students?
2. What size of shoes is worn by minimum number of students?

Answers:

1 a)

Marks	Tally	No. of Students
1	II	2
2	III	3
3	III	3
4	IIII II	7
5	IIII	5
6	IIII III	8
7	IIII	5
8	IIII	4
9	III	3

b) Students who obtained marks equal to or more than 7: $5+4+3=12$

c) Students obtaining marks above 3: $7+5+8+5+4+3=32$

2) Tally Table

Fruits	Tally	No. of Students
Apple	IIII III	10
Orange	IIII III	8
Banana	IIII III	9
Grapes	IIII II	7

(a) iv (b) i (c) ii

Q. 3

Number	Tally	No. of times it occurred
4	I	6
5		5
6		5
7		5
8		3

i) No.4 (ii) No. 8

Time to teach	Asset Type	Theme	SubTheme
15 Minutes	Assessments	Data Handling	

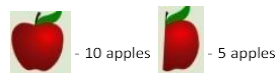
7. MS_Pictographs

PICTOGRAPH:

- A Pictograph uses pictures or symbols to represent an assigned amount of data.
- It can be used to represent different amounts of data.
- **Key Note or Scale:** Each symbol or picture used in a pictograph represents a number that could be assigned for that symbol or picture which is called as Key Note or Scale.

Example 1

Month	Apples Sold
January	
February	
March	



It mainly catches the attention of the eyes as the pictures are attractive. The newspapers or magazines mainly use this way to put forth the data.

Example 2: The colours of washing machines preferred by people living in a locality are shown by the following pictograph

15 Minutes	Main Script	Statistics	Presentation of data, Presentation of data
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8. MS_How to Create Pictographs?

Drawing a Pictograph

Pictograph is one of the ways to interpret data. To illustrate a point, pictographs provide a visual representation of information and numbers.

"Creating a pictograph is interesting and fun to data".

Steps to Create a Pictograph

- 1) Collect the Data. If it is Raw Data, use Tally marks and then make the Table.
- 2) Choose the picture relevant to the data.
- 3) If the picture cannot be drawn easily for the data then give some related symbols: Ex:



- 4) Mention the symbols with the proper category name and key note.
- 5) Mention the Keynote or Scale for every picture or symbol.
- 6) Label each category or type of the data given.
- 7) Create the pictograph to explain the information neatly.

Example 1:

The Cake palace bakes different types of Cup Cakes, Fruit cakes, Biscuits etc. The shop is famous for cupcakes.

Days	No. of cakes baked
Monday	1000
Tuesday	800
Wednesday	1200
Thursday	900
Friday	600
Saturday	1300
Sunday	1500

Scale: Each  cake picture represents - 200, Half Cake - 100 

Days of the week	Number of cup cakes baked							
Monday								
Tuesday								
Wednesday								
Thursday								
Friday								
Saturday								
Sunday								

Example 2:

The National tree day is celebrated on the last day in the month of July. In a few places, National tree day is observed on the last Friday of July. The students of higher classes are asked to plant tree or flowering plants.

The data shows how many flowering plants are planted by the children.

Classes	No of plants Planted
VIII	40
IX	35
X	30

Create a Pictograph for the above data and also find the total number of children who planted the trees.

Each Flower represents - 5 plants.

Classes	Number of flower plants planted						
VII							
IX							
X							

The total number of children $(40+35+30) = 105$.

Cake: <https://pixabay.com/photos/chick-cupcakes-birthday-2319263/>

Tulips: SSSVV Gallery-Keyword-tulip

20 Minutes	Main Script	Data Handling	
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9. SA_ Activity on Pictographs

Activity on Pictographs

Aim: To collect the data and create pictographs.

Type of the activity: Individual

Setting of the activity: Indoor/Classroom

Materials required: Book, pen/pencil, colours (optional)

Preparation: Collect data from the class pertaining to favourite.

1. Food (example: Dosa, Idli, Chappathi, Puri, etc)
2. Subject (example: English, Maths, Physics, Social, Hindi etc.)
3. Cricketer (any 5 or 6 cricketers)
4. Sports (from any -Tennis, Football, Cricket, Badminton, Basket Ball etc.)
5. Places of visit(in a particular state namely TN or KA or AP or in general)
6. 6) To collect data of heights/weights of students of the classmates.
7. 7) To collect Population/ poverty of the different states of India.

Procedure:

1. Collect the data for any 2 given above.
2. Next group the data accordingly with the help of Tally.
3. Make a suitable pictograph to represent the data by using a suitable key note or scale and marking the points for drawing the graph.

Instruction to teacher: On the previous day, collect the data of heights of students of class VI. Give that as an example data to the whole class.

Example: The heights of the students are measured in centimeters.

(120,112,114,120,116,114,113,112,115,117,118,113,112,114,120,114,115,116,112,114,120,118,117,113,115,114)

Conclusion: Students will be enthusiastic to collect the information and represent as a Pictograph.

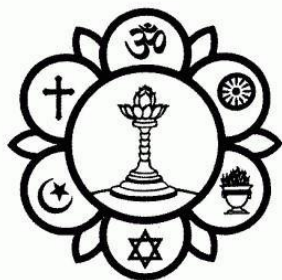
Time to teach	Asset Type	Theme	SubTheme
20 Minutes	Suggested Activity	Data Handling	

10. IA_ History of Pictograph

History of Pictographs

Ancient Egyptian, Sumerian and Chinese civilizations used pictographs as their basis for early written symbols. This was followed around 5000 years back which slowly took shape as the modern day writing. It will be interesting to note that pictograph forms to be the symbol of writing in some of the backward African cultures even now. Based on its effectiveness in the field of communication since this representation is easily understood by all, certain pictograph symbols like road signs have universal appeal and is globally accepted. More amusing will be to know that pictographs were widely used in Egyptian and Chinese literature to narrate a whole story.

The Pictograph given below depicts an interesting truth.



Professor Kasturi who is the author of Sathyam Shivam Sundaram (Part II page 231) describes how Sathya Sai Baba drew this symbol and explained the importance of the Sarva Dharma Symbol. During the year 1967 Shivarathri time Swami drew this symbol on a piece of paper and explained the importance of each symbol. Each one represented the following: the Pranava or Om for Hindu, the Wheel for Buddhism, sheaf of flames or sacred fire for Zoroastrianism, the Crescent and the star for Islam and the Cross for Christianity. From then onwards this symbol came into existence and one can identify this symbol with all **Sathya Sai Organisations**.

Image: www.radiosai.org

Time to teach	Asset Type	Theme	SubTheme
5 Minutes	Interesting Asides	Data Handling	

11. DD_Usage of Pictograph in Every Day Life

Pictographs are widely used.

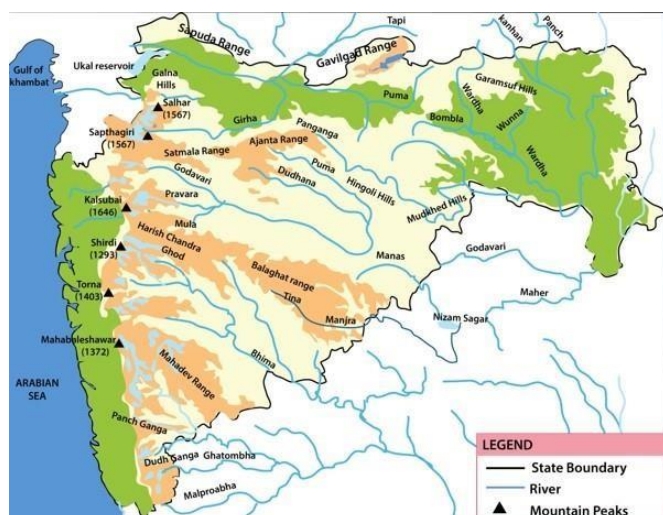
1. Pictograph signs are used to represent temples, churches, hotels and restaurants in the tourist maps.



2. Pictograph signs help to show the humps, petrol stations, ambulance availability on the highways.
3. In the Physical maps of the countries there are symbols to mention rivers, canals, dams etc.
4. In the Political and Physical maps of the countries, the legend or map Key denotes the symbols for mountain peaks, rivers, agricultural products, railways, mineral ores, transportation etc. which help to find the number of industries located in the particular state or city.

Examples:

Fig 1. The Mountain Peaks are given with a symbol in the map.



Temple : <https://pixabay.com/vectors/india-temple-architecture-building-155115>

Petrol symbol : <https://pixabay.com/vectors/gas-station-car-road-drive-43798/>

Hump symbol : <https://openclipart.org/detail/1104/speed-bump-sign>

Ambulance : <https://openclipart.org/detail/314219/ambulance-icon-2>

Map : SSSVV Gallery- keyword- Physical map of Maharashtra

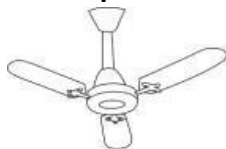
Time to teach	Asset Type	Theme	SubTheme
5 Minutes	Day-to-day Relevance	Statistics	Representation of data (pictograph, bar graph & double bar graph),

Representation of
data(pictograph, bar graph &
double bar graph)

12. QA_Read, Learn and Answer on Pictographs

Assessment:

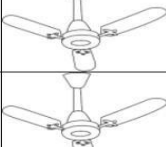
Q1. The number of fans produced by a factory during the four weeks of October



are given below.

1 fan = 20 fans

Table given below

1st week	
2nd week	
3rd week	
4th week	

Observe the pictograph given above and answer the following questions:

- In which week was the maximum number of fans produced? How many?
- In which week was the least number of fans produced? How many?
- How many fans were produced in the first week?
- What is the total number of fans produced in October?

Q. 2 Answer the questions for the picture given below.

Sports played by class VI students	
Base ball	
Hand ball	
Hockey	
Football	
Basket ball	
Key  = 20 students	

- What is the keynote for the above picture?

- ii. Which sport is played by minimum number of students?
- iii. How many students play Basket Ball?
- iv. Find the total no of students who play Hockey and Foot Ball?

Q. 3 Create a Pictograph for the following Data:

Mode of Transport	No of Students
Scooter	25
Public Bus	30
School Bus	45
Car	20
Cycle	35
Walking	40



Take this symbol to represent 5 student each

- 1) How many students use school bus to travel to school?
- 2) Which mode of transport is used by minimum number of students?
- 3) Mention the students who use Cycle?
- 4) Find the number of students who use Public Transport.
- 5) Find the total number of students altogether.

Answers:

- 1) 3rd week-80 (ii) 4th week -20 fans (iii) 1st week -60 fans(iv) total no of fans- 200 fans
- 2) (i) Each picture is equal to 20 students (ii) Hand Ball -40 (iii) 140 (iv) 180

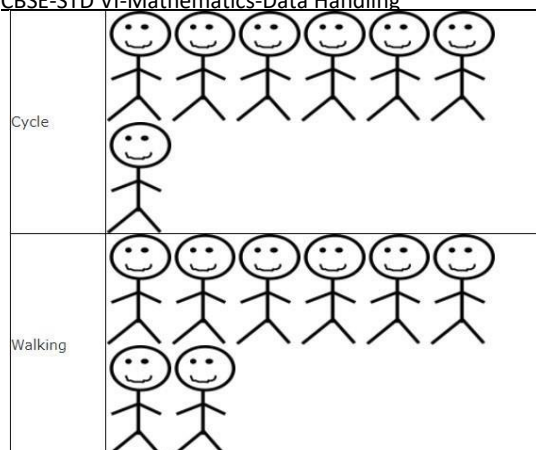
3) The following pictograph shows the different modes of transport used by students to travel to school each day.

Scale: One picture represents 5 students



One figure = 5 students

Mode of Transport	No of Students
Scooter	5
Public Bus	6
School Bus	9
Car	4



(i) 45 (ii) car (iii) 35 (iv) 30 (v) 195

Image source:



<https://openclipart.org/detail/76099/fan-line-art>



<https://pixabay.com/en/football-ball-sport-soccer-round-157930/>

All other images are original (girijashankaran@gmail.com)

Time to teach	Asset Type	Theme	SubTheme
20 Minutes	Assessments	Statistics	Representation of data(pictograph, bar graph & double bar graph), Representation of data(pictograph, bar graph & double bar graph)

13. VC_Values On Data

Discipline, the key to success.

“We have seen that data is a collection of facts / numbers gathered to give some information. To get particular information from the given data quickly, the data can be arranged in many forms like Bar graph, Pictograph, etc.”

To put in simple terms, data and other graphs represent disciplined and organized facts.

In real life too, we need to be organized and disciplined to lead a successful life.

The teacher gives a situation:

You are being trained in cricket. You miss many practices because you are not able to

wake up early to attend the practice session. But you are generally a good player. That is known to you as well. One day you play in a match and obviously don't play well. Next day you are being criticized in the news saying, "He is an untrained cricketer." How would you react?

1. Just ignore the criticism?
2. Or become angry and decide to meet the critic?

(Let children come out with their views).

The teacher then goes on to narrate this story:

Children! The famous Norwegian violinist Ole Bull was in the same situation as I described just now. Though his father wanted him to become a Minister, he was interested in playing violin and devoted all his time and energy to his passion.

Unfortunately, his first concert did not take off as he expected. Perhaps because he was not well prepared and he was not organized.

The very next day, a newspaper critic wrote, "Ole Bull is an untrained musician, rough and unpolished."

Instead of ignoring the criticism, he decided to meet the critic. The Editor took him to a 70 year old man. The old man discussed with Ole Bull about all his faults and Ole Bull found himself seeking the old man's advice on how to correct them.

He returned home, took his violin lessons seriously and the next six months practiced hours together with utmost discipline to overcome his faults.

Finally, he went back to giving his concerts and became the sensation of Europe at a very young age of 26.

He was able to achieve this mainly because, he gathered all data about his faults from the old man, put them in a proper perspective and proceeded to practice with discipline.

The final picture that emerged was his beautifully presented concerts and his success at a very young age.

Children!

Constructive or valid criticism is similar to a useful data. No doubt it can also hurt you but it is easier to accept because it is aimed not only to point out your mistakes but also show you where and how improvements can be made so that a clear picture can emerge.

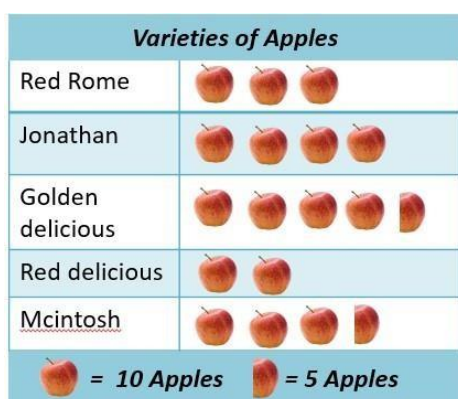
It can help you improve yourself rather than put you down.

"He has the right to criticize, who has the heart to help," Abraham Lincoln." The key is to be disciplined in your abilities. With self- discipline & self-confidence, Criticism isn't a threat. It's a useful tool.

Time to teach	Value Type	Value Sub Type	Value Attribute
5 Minutes	Peace	Self Discipline	Quotation

14. MS_Fractions and Decimals - Bar Graph

See the figure given below. Fig 1



While drawing the pictograph one has to choose the pictures carefully. If we study the above picture, we can infer the information that full picture of apple represents 10 apples and half picture represents 5 apples.

Is it possible to represent a picture if it is in fraction like $\frac{1}{3}$ or $\frac{1}{5}$?

Can you represent a decimal 1.8 in a pictograph?

How do you represent when the numbers are in fractions and decimals?

Sometimes this representation of the information is difficult and at the same time it is time consuming as well. So, how better can we represent the data without much time waste?

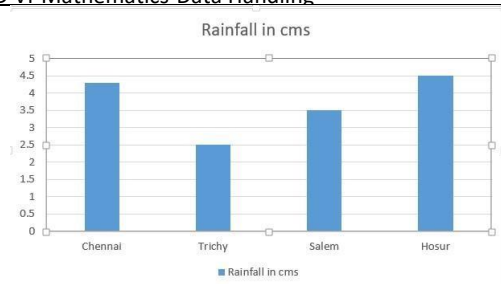
Bar Graph is the solution for it.

Example: Rainfall recorded in 4 cities of Tamilnadu on a particular day in June.

Rainfall recorded in 4 cities of TN (in cms)

Chennai	Trichy	Salem	Hosur
4.3	2.5	3.5	4.5

Fig 2:



Hence, when the data is in fractions or decimals Bar graphs are highly useful and handy.

Image of apple: <https://pixabay.com/en/apple-red-apple-fruit-vitamins-2743425/>

Time to teach	Asset Type	Theme	SubTheme
5 Minutes	Inquisitive Questions	Data Handling	

15. Bar Graph-Definition and Scale

Bar Graph- Definition

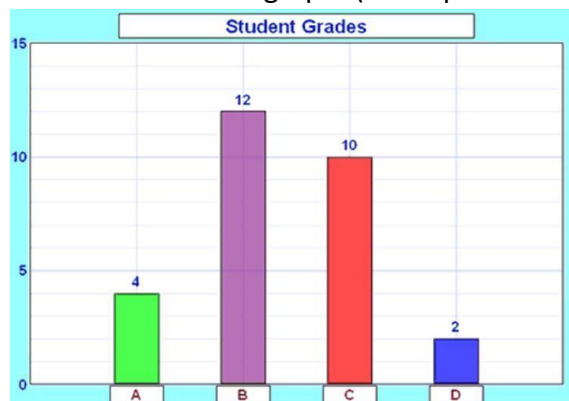
- > Bars of uniform width drawn horizontally or vertically with equal spacing between them and the length of each bar represents the given number.
- > This method of representing data is called a “BAR GRAPH”.
- > The unit of length should be specific and state what number it is representing.
- > Based on the length of the bars one can interpret the data and answer the questions asked at the end of it.

Example 1:

In a recent test, this many students got the following grades:

Grade:	A	B	C	D
Students:	4	12	10	2

And here is the bar graph: (one square unit = 5 students)



1) How many students got B Grade? (Ans 12)

2) Find the number of students who scored D grade? (Ans 2)

Example 2: Scale: 1 unit = 10 Hundred Candy (1000 Candy)



Study the above picture and answer the following questions:

1. In which month the sale was highest?
2. In which month the sale was least?
3. How many candies were sold in the year 2016?
4. What is the sale in the fifth month of the year?
5. What is the sale in the odd months of the year?
6. What is the sale in the even months of the year?

Solution

1) May

2) December

3) Total Sale: $40 + 35 + 59 + 56 + 72 + 34 + 54 + 40 + 43 + 62 + 41 + 16 = 552$.

1 unit = 1000 candy, so $552 \times 1000 = 552,000$ candies.

4) 72,000

5) Odds months Jan, Mar, May, July, Sep and Nov. The sale is $40 + 59 + 72 + 54 + 43 + 41 = 309$.

Hence 309,000 candies.

6) Even months are Feb, Apr, June, Aug, Oct and Dec. The sale is $35 + 56 + 34 + 40 + 62 + 16 = 243$

Hence 243,000 candies.

All images are original (girijashankaran@gmail.com)

Time to teach	Asset Type	Theme	SubTheme
15 Minutes	Main Script	Statistics	Representation of data (pictograph, bar graph & double bar graph), Representation of data (pictograph, bar graph & double bar graph)

16. MS_Bar Graph - Construction

Construction of Bar Graph

We shall explain this with an example:

The number of runs scored by 6 batsmen of the Indian Team in a one-day match is given in the table below. Draw a bar diagram.

Players	1	2	3	4	5	6
No. of runs	30	60	10	50	70	40

Solution.

In the rectangular coordinate system, draw two lines perpendicular to each other – one in horizontal (x-axis) and the other in the vertical (y-axis) direction.

Choose **players** to be represented on the x-axis and **no. of runs** to be on the y-axis (Fig-1).

Generally a bar-graph consists of equally-spaced bars drawn on the x-axis (or y-axis).

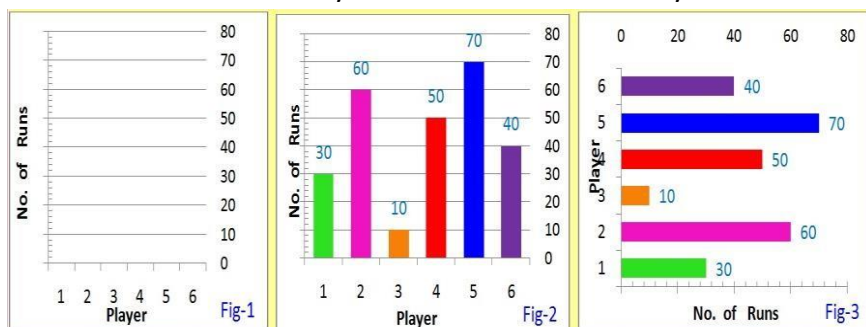
Therefore, mark 6 equally spaced points (mid-points) on the x-axis, over which the vertical bars are to be drawn. These 6 bars will represent the score of the 6 players.

The next step is to choose a suitable scale for the y-axis. How do you do this? From the given data (table), we can see that the highest no. of runs scored by any batsman is 70, while the lowest is 10. Hence we can make 7 (or 8) divisions on the y-axis, each representing 10 runs (as in Fig-1).

Scale :

X- Axis 1 Unit = 1 batsman, Y Axis 1 Unit = 10 runs.

Now actually draw the Bars for each player making sure that the height of each bar touches the value marked on the y-axis. Custom colours may be used for each bar (Fig-2 below).



If Players were to be represented on the Y-axis and No. of runs were to be represented on the x-axis, then the Bars would be horizontal as in Fig-3.

(above)

Example 2

Draw the bar graph for the information given in the table below:

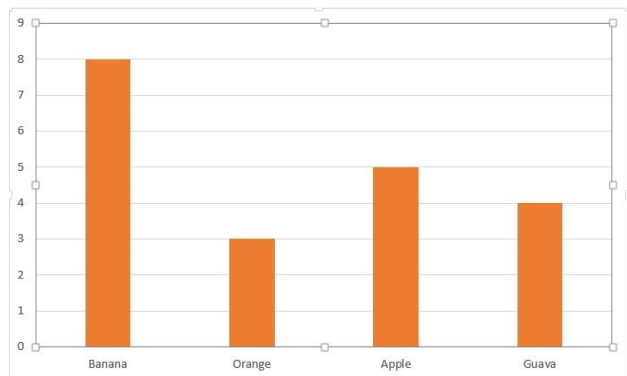
Name of the fruits	Banana	Orange	Apple	Guava
No. of Students	8	3	5	4

First of all, draw a horizontal and a vertical line. On the horizontal line, we will draw bars representing each fruit and on vertical line, we will write numerals representing number of students.

Let us choose scale. It means we first decide how many students will be represented by unit length of a bar. Here, we take one unit length to represent one student only.

We get a bar graph as shown in the fig.

Scale: 1 unit = 1 Student.

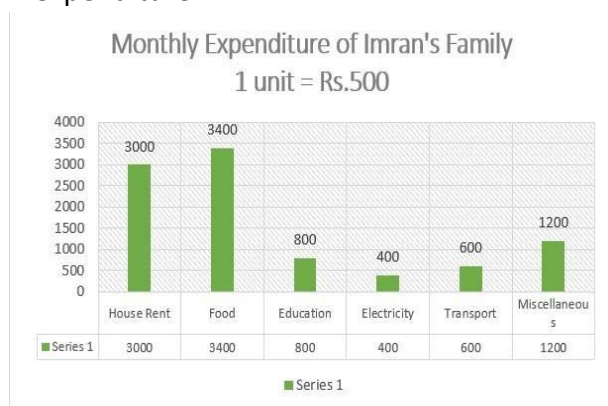


Ex: 3 The following table shows the monthly expenditure of Imran's family on various items.

Items	Expenditure (in Rs.)
House Rent	3000.
Food	3400.
Education	800.
Electricity	400.
Transport	600.
Miscellaneous	1200.

To represent this data in the form of a bar diagram, here are the steps.

- Draw two perpendicular lines, one vertical and one horizontal.
- Along the horizontal line, mark the items and along the vertical line mark the corresponding expenditure.



All images are original (girijashankaran@gmail.com)

20 Minutes	Main Script	Statistics	representation of data(pictograph, bar graph & double bar graph), Representation of data(pictograph, bar graph & double bar graph)
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17. QA_Questions on Bar Graph

Short Answer Questions:

1. A survey of 120 school students was done to find out which activity they prefer to do in their free time.

<i>Preferred activity</i>	<i>Number of students</i>
<i>Playing</i>	<i>45</i>
<i>Reading story books</i>	<i>30</i>
<i>Watching TV</i>	<i>20</i>
<i>Listening to music</i>	<i>10</i>
<i>Painting</i>	<i>15</i>

Draw a bar graph to illustrate the above data taking scale of 1 unit length = 5 students.

- How many students do painting?
- Which activity is preferred by most of the students other than playing?
- How many children like playing and what is its importance?
- Which is the least preferred activity?

2) Study the picture and write two sentences based on what you understand from it?



Answer the questions based on the picture given above:

- Draw the vertical bar graph for the given data.
- Mention the clubs which has the greatest and least number of participants.
- What is the key note for the above data?
- How many members are there for math club?

e) Find out the number of members for each club.

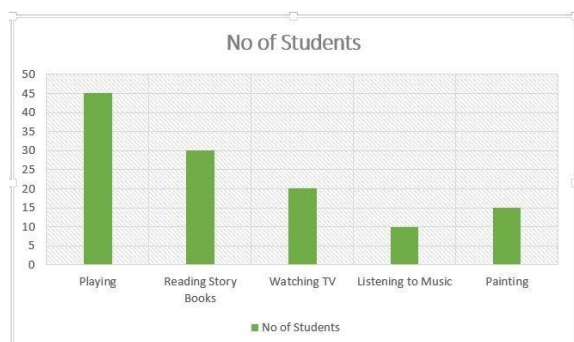
Long Answer Question

3) Construct a Bar Graph both Vertical and Horizontal to represent the following information.

Number of absentees in a week in a corporation high school are given:

Class	6	7	8	9
Absentees	8	12	9	15

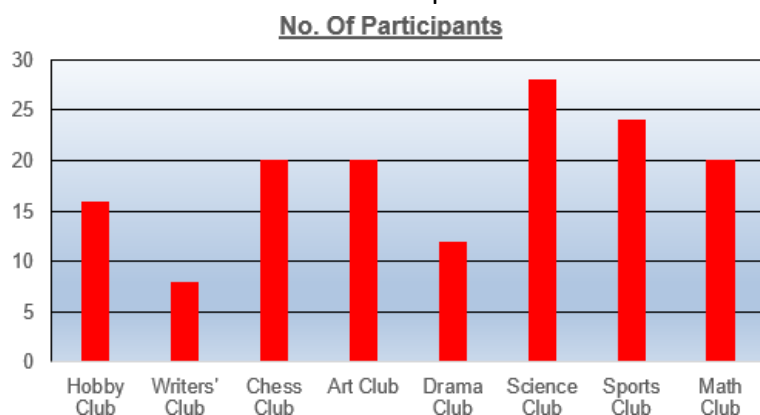
Answers:



1) (i) 15, (ii) Reading Story Books, (iii) 45. Playing refreshes the mind and keeps active.

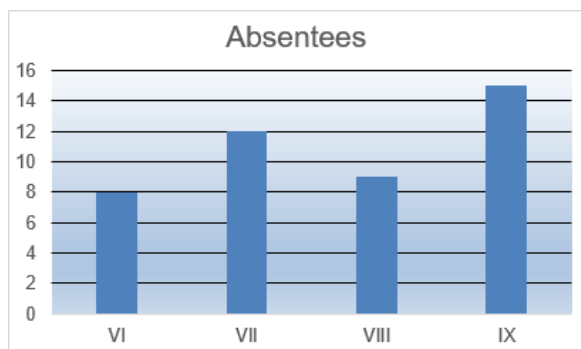
(iv) Listening to Music

2) The picture gives the information of different clubs in a particular college. The students are the members. One unit = 5 Participants



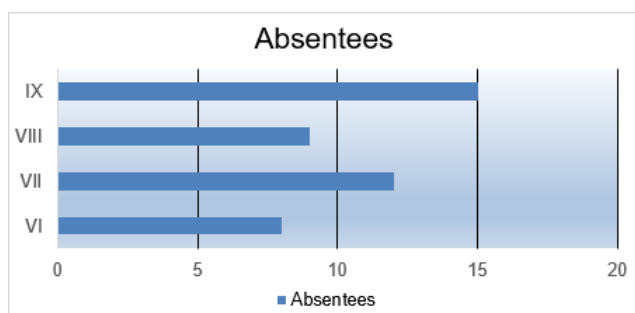
b) Science Club-28 and Writer's club -8 (c) 4 (d) 20 (e) Hobby- 16, Writer's -8 , Chess- 20, Art- 20 , Drama- 12, Science- 28, Sports- 24, Math-20

3) One unit = 2 absentees (Vertical Bar Graph)



Scale : 1 unit = 2 Absentees

One unit =5 absentees Horizontal Bar Graph.



Scale : 1 unit = 5 Absentees

All images are original (girijashankaran@gmail.com)

Time to teach	Asset Type	Theme	SubTheme
20 Minutes	Assessments	Statistics	Representation of data(pictograph, bar graph & double bar graph), Representation of data(pictograph, bar graph & double bar graph)

18. QA_Data Handling- Additional Questions and Concepts

Answer the following questions:

The pictograph below illustrates the number of Ice creams sold during a week by an Ice cream parlour.



The following questions could be answered based on the above pictograph:

Answer the following Multiple Choice Questions

I 1) The key note for the pictograph is 1 ice cream cone equals

(a) 25 (b) 40 (c) 50 (d) 20

2) Which ice cream is largely sold?

(a) Twist (b) Chocolate (c) Vanilla (d) None of these

3) Find the number of Twist type sold in a week?

(a) 350 (b) 300 (c) 325 (d) 275

4) Mention the ice cream sold in the parlour in a week.

(a) 1500 (b) 1550 (c) 1600 (d) 1525

II Very Short Answer Questions:

Q1. How many Chocolate ice cream cones were sold?

Q2. How many Strawberry ice cream cones were sold?

Q3. Which type of ice cream was sold the least?

Q4. Which ice cream was sold more- Vanilla or Chocolate peanut butter?

III Fill in the blanks.

1) The two different ways of representing the data are ----- and -----.

2) A table showing the count of various items is called-----.

3) The collection facts, such as numbers, words, measurements, observations or even just descriptions of things gathered to give some information is known as-----.

4) The collection of Data which is not arranged in order is called -----.

5) The straight lines representing the numbers of items or objects is called -----.

IV Long Answer Question.

A survey was taken from 50 children asking them for their favorite snack. Below is the findings of the survey.

Snack	Popcorn	Chips	Biscuits and Chocolates	Vegetables	Fruits
No. of Children	7	12	13	10	8

1) Draw the bar graph horizontally and name the axes and the key.

Answers:

i) 1) c (2) b (3) a (4) b

ii) 1) $9 \times 50 = 450$, because 9 symbols are shown against Chocolate, and each symbol represents 50 ice creams

2) $3 \times 50 + 25 = 175$ (3) Strawberry (4) Vanilla. The above pictograph indicates that the number of Vanilla ice creams sold were $6 \times 50 = 300$ while the number of Chocolatepeanut butter ice cream cones sold were $5 \times 50 + 25 = 275$.

III 1) Pictograph and Bar graph (2) Frequency Distribution (3) Data (4) Raw Data (5) Tally marks.

IV)



Ice cream : <https://openclipart.org/detail/273240/ice-cream-line-art>

All images are original (girijashankaran@gmail.com)

Time to teach	Asset Type	Theme	SubTheme
20 Minutes	Assessments	Data Handling	

19. MS_Summary_Data Handling

1. Explain the Concept of Raw Data, Classification.

2. For a given raw data to make the Tally table and answer the questions based on the data given.
3. Demonstrate Activity for the Tally table and answer the various types of questions accordingly.
4. Define Pictograph, procedures to create pictograph.
5. Uses of pictograph in real life with an interesting fact on pictograph
6. Explain the concept of Bar graphs, types of bar graphs and how to draw the bar graphs.
7. Criteria to draw bar graphs with horizontal and vertical axis, scale, key note.
8. The organized data is the value to practice for a disciplined life.

Time to teach	Asset Type	Theme	SubTheme
5 Minutes	Main Script	Data Handling	