INTERPRETATION OF GRAPHS AND DATA.(P.5)

LESSON I: PICTOGRAPHS

These are graphs that use pictures or symbols to represent collected information.

The picture graph must have a scale in order to interpret the information accurately

Example

The graph below shows the number of pupils at Mako primary school. Study it carefully and answer the questions that follow.

Class I	
Class II	
Class III	
Class IV	
Class V	

Scale: One  represent 10 students

a) How many pupils are in class II?

= (7 x 10) pupils

= 70 pupils

b) How many pupils are in class I and IV altogether?

= (7+5) x 10 pupils

= 12 x 10 pupils

= 120 pupils

c) Which class has the list number of pupils?

= Class V

d) Which two classes have the same number of pupils?

= Class I and Class II

e) Find the total number of pupils in the school?

= (7 + 7 + 6 + 5 + 4) x 10 pupils

= 29 x 10 pupils

= 290 pupils

Evaluation activity

The table below shows the number of books sold from Monday to Saturday. Study it carefully and answer the questions about.

One  represents 10 books.

Days	Books sold
Monday	
Tuesday	
Wednesday	
Thursday	
Friday	
Saturday	

a) Which day had the highest sales?

b) Which day had the least sales?

c) Which days had the same number of books sold?

d) How many books were sold on Saturday?

e) How many books were sold Monday and Friday?

f) How many books were sold in the six days?

LESSON 2 DRAWING PICTOGRAPHS

Examples

1. If  represents 10 balls. Draw similar pictures to represent 40 balls.

Key  = 10 balls.

= 

= 10 + 10 + 10 + 10 = 40 balls

2. Mukasa got 60 mangoes, Mark got 80 mangoes and John got 40 mangoes. If  represents 20 mangoes draw a pictograph for the above information

= 

20 + 20 + 20 + 20 + 20 + 20 + 20 + 20 + 20 = 180 mangoes.

Evaluation activity

1. If  represent 5 pens, draw pictograph to represent 50 pens.
2. If  represents 6 girls, draw pictographs to represent 30 girls.

3. Mukasa got 20 apples, Godon 30 apples and Alice 15 apples. Given that  represents 5 apples, draw pictures to represent the above information.
4. Jane has 12 oranges, Ali has 16 oranges and Joseph has 20 oranges. Given that  represent 4 oranges, draw pictographs to represent the above information.
5. Mable has 9 books, Alice has 21 books and Bob has 18 books, given that  represent 3 books, draw pictographs to represent the above information.

LESSON 3 INTERPRETING DATA ON BAR GRAPHS.

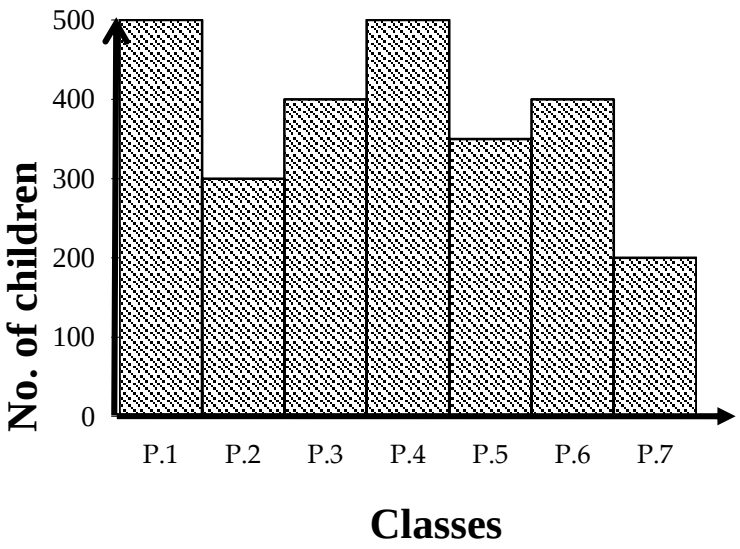
Graphs are used to represent collected information. We have different types of graphs. These include; picture graph, bar graph, line graph, circle graph/pie chart, coordinate graph. A good graph should have a title.

INTERPRETATION OF BAR GRAPHS.

Collected information can be organized and represented on block or column structures forming a graph. This type of graph is called **a Bar graph.** The blocks or columns may lie horizontally forming a horizontal bar graph or upright forming upright bar graph.

Example 1

Use the bar graph to answer questions that follow.



Questions

a) Which class has the least number of children?

= Primary seven

b) How many children are in P.6?

= 400 children

c) How many more children are in P.4 than P.5

= (500 – 350) children

= 150 children

d) Find the total number of children in the school.

= (500 + 300 + 400 + 350 + 500 + 400 + 200)

= 2450 children

e) Find the range of pupils in the school.

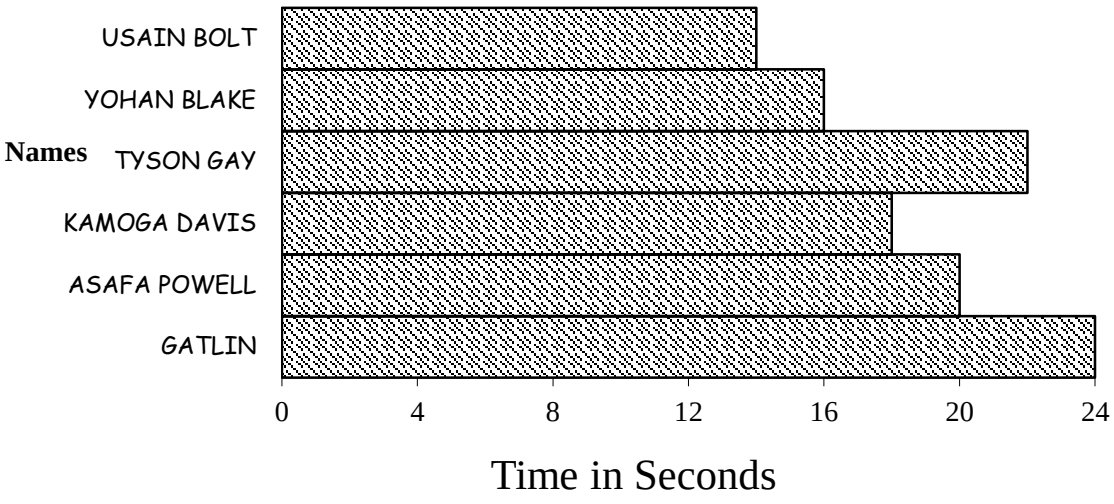
Range = H – L

Range = 500 – 200

Range = 300

Evaluation activity

The bar graph below shows a 200m race competition between six men. Study it and use it to answer the questions that follow.



Questions

a) What is the graph about?

b) How much time in seconds was taken by each of the Athlete?

c) What was the average time taken by the six Athletes?

d) Who completed the race in 18 seconds?

e) Who won the race?

f) Who was the slowest Athlete?

LESSON 4: DRAWING BAR GRAPHS

Example

The P.5 pupils counted vehicles which passed along the road near their school. The pupils recorded the results in a table as shown below. Use the information to construct a bar graph.

Type	Cars	Buses	Lorries	Motorcycle	Mini buses
Total	12	8	6	10	16

Suggest a suitable scale on the Vertical axis and along the Horizontal axis.

Scale

Let one small square represent 2 vehicles on the vertical scale and one small square represents one type of vehicle on the Horizontal scale.

Since one square represents 2 vehicles

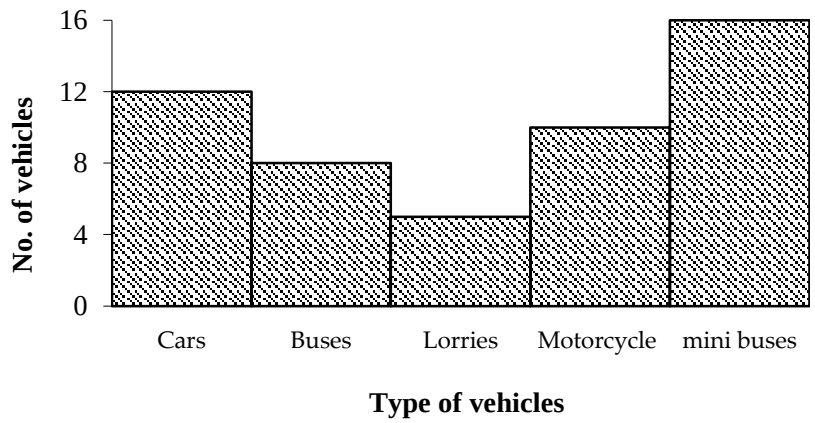
12 can represent $\frac{12}{2}$ = 6 squares.

16 minibuses = $\frac{16}{2}$ = 8 squares.

8 buses represent $\frac{P}{2}$ = 4 squares.

10 motorcycles $\frac{10}{2}$ = 5 squares.

6 Lorries represent $\frac{6}{2}$ = 3 squares.



Evaluation activity

The table below shows the number of litres of milk sold in a week. Use the information to construct a bar graph.

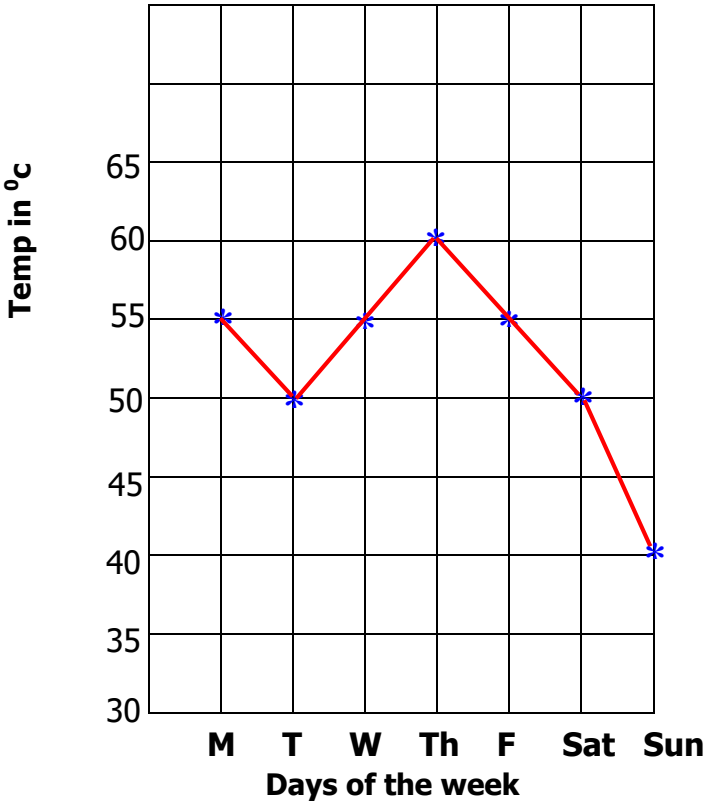
Day	Mon	Tue	Wed	Thurs	Fri
Litres	10	6	4	8	14

LESSON 5 LINE GRAPHS

A line graph is where the information plotted on a graph is marked and the required point is indicated with a star, thereafter joined by a thick line.

Line graphs display information or data that change continuously over time.

Example The graph below shows the midnight temperatures for the days of the last week.



QUESTIONS

i) Which day had the lowest midnight temperature?

= Sunday

ii) Give three days which had the same midnight temperatures.

= Monday, Wednesday and Friday

iii) What was the midnight temperature of Thursday?

= 60^0c

iv) Which day had the highest midnight temperature?

= Thursday

v) Find the range of the temperatures.

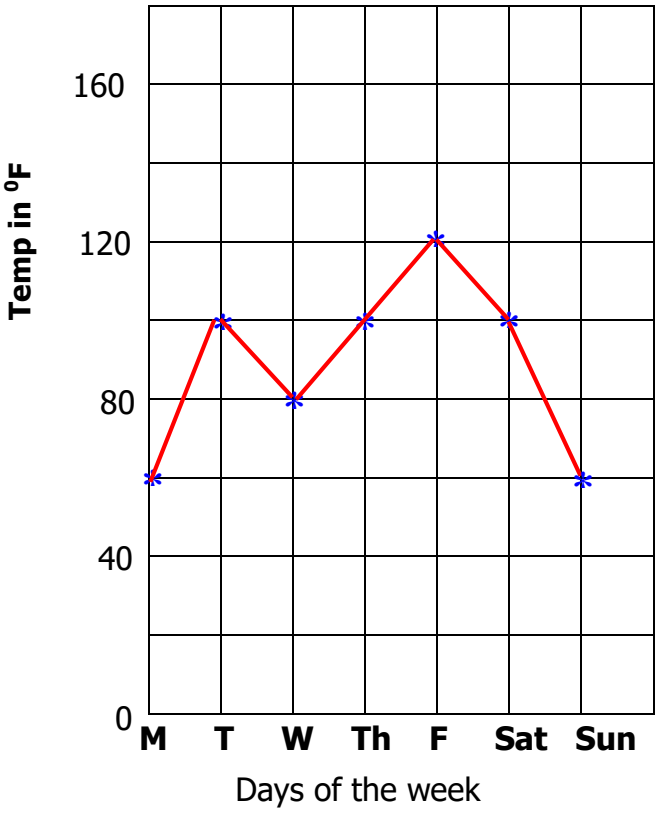
Range = H- L

Range = 60^0c – 40^0c

Range = 20^0c

Evaluation activity

The graph below shows the temperatures for the days of the last week.



QUESTIONS

i) Which day had the lowest temperature?

ii) Give three days which had the same temperatures.

iii) What was the temperature of Thursday?

iv) Which day had the highest temperature?

v) Find the range of the temperatures.

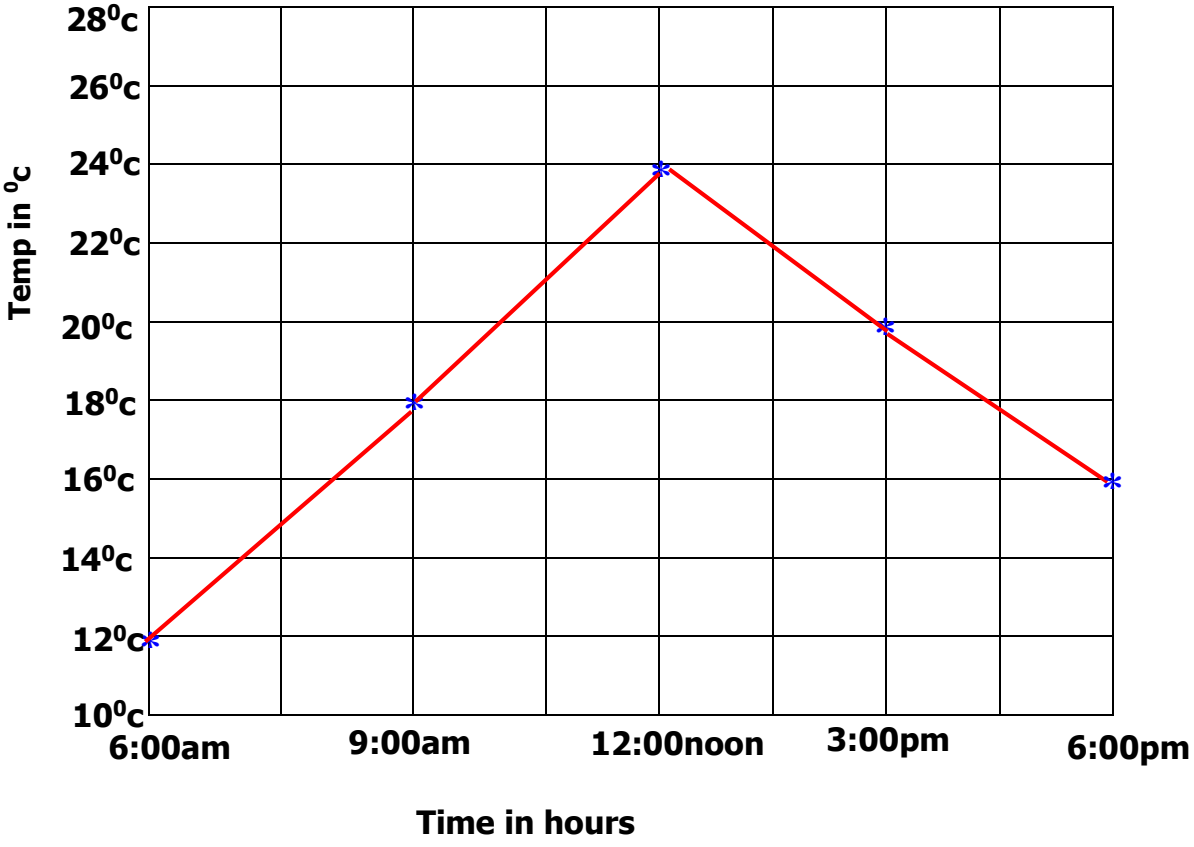
LESSON 6: DRAWING LINE GRAPHS

Example

The table below shows the temperature of a place recorded at a 3-hours interval on a certain day.

Time	6:00am	9:00am	12:00noon	3:00pm	6:00pm
Temperature	12^0c	18^0c	24^0c	20^0c	16^0c

Using a suitable scale, draw a line graph for the data.



Evaluation activity

1. The table below shows the goals which were scored by a netball team during the league. Draw a line graph for the information given.

Rounds	1st	2nd	3rd	4th	Final
No. of goals	8	5	9	6	8

2. A fruit-exporting company recorded the number of pineapples it exported in the first half of the year as follows; Jan 3,000, Mar 1,500, April 2,000, May 2,500, and June 4,000

   a) Draw a table for the above information

   b) Draw a line graph to represent the above data

LESSON 7: TALLIES

Examples

Draw tallies to represent;

1. 6 = 𝍸 |
2. 17 = 𝍸 𝍸 𝍸 ||
3. 23 = 𝍸 𝍸 𝍸 𝍸 𝍸

Evaluation activity

1. Draw tallies to represent;

   a) 7 b) 13 c) 19 d) 29 e) 33

2. Write down the number for the tallies below;

a) 𝍸 |||| **b)** 𝍸 𝍸 ||| **c)** 𝍸 𝍸 𝍸 𝍸 ||||

LESSON 8 INTERPRETING TALLIES FROM A TABLE

The table below shows the number of litres of milk sold in the five days of the week. Study it carefully and use it to answer the questions that follow.

Days of the week	Litres of milk
Monday	𝍸 𝍸 𝍸 𝍸 |||
Tuesday	𝍸 𝍸 |||
Wednesday	𝍸 𝍸 𝍸 ||||
Thursday	𝍸 𝍸 𝍸 |||
Friday	𝍸 𝍸 𝍸 ||

Questions

a) Which day had the highest sales?

Monday

b) When was the least number of milk sold?

Tuesday

c) How many litres of milk were sold on Friday?

17 litres

d) How many litres of milk were sold on Tuesday and

Thursday = 31 litres

e) How much milk was sold in the five days?

100 litres of milk

Evaluation activity

The P.5 pupils counted cars which passed along the road near their school. The pupils recorded the results in a table as shown below.

Days of the week	Cars counted
Monday	𝍸 𝍸 𝍸 ||
Tuesday	𝍸 |||
Wednesday	𝍸 𝍸 𝍸 ||||
Thursday	𝍸 𝍸 𝍸
Friday	𝍸 𝍸 |

Questions

a) Which day had the highest number of cars counted?

b) When was the least number of cars counted?

c) How many cars were counted on Friday?

d) How many cars were counted on Tuesday and Thursday

e) How many cars were counted in the five days?

2. The ages of some pupils in P.5 class is as follows;

Allan 11years, John 10years, Alice 9years and Ana 8years.

Draw a table and represent the above information using tallies.

LESSON 9: STATISTICS

Statistics (mean, mode, median, modal frequency,

Range)

Median is the middle number after arranging the data in ascending or descending order.

Example: Find the median of 4,2,6,7,8,9,3

=②,③,④, 6,⑦,⑧,⑨

Median = 6

Mode is the number/ figure/ score that appears more than the rest.

Or the number/ score with the highest frequency.

Example: Find the mode of 8,2,6,4,2,1,2

Number	tallies	Frequency
8	I	1
2	III	3
6	I	1
4	I	1
1	I	1

Mode is 2

Modal frequency is the number of times the mode has appeared.

Range is the difference between the highest and the lowest score.

Example. Given the following 2.4,6,7,8,3

Find the range.

Range = H – L

Range = 8 – 2

= 6

Mean is the result you get after dividing the sum of items by the number of items. It is also referred to as average or arithmetic mean.

$$\text{Mean} = \frac{\text{sum of items}}{\text{No.of items}}$$

Find the mean of 2, 4,7,2,8 and 1

$$\text{Mean} = \frac{\text{sum of items}}{\text{No.of items}}$$

$$= \frac{2+4+7+2+8+1}{6}$$

$$= \frac{24}{6}$$

$$= 4$$

Evaluation activity

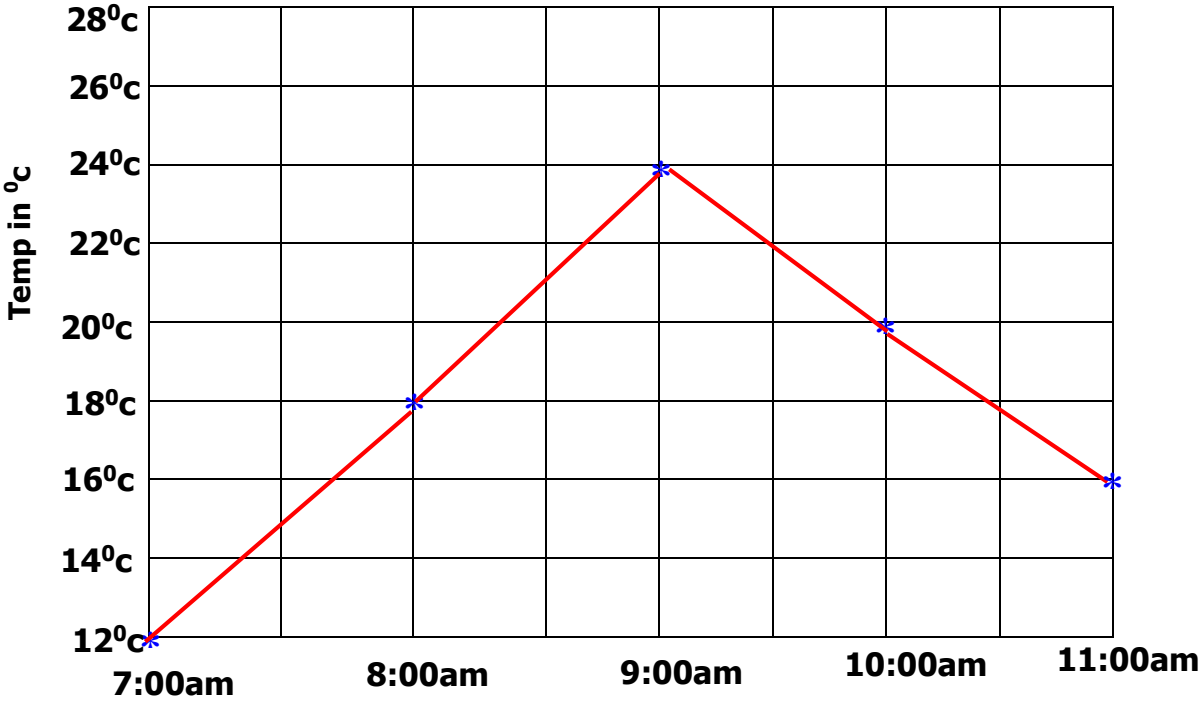
1. Find the range of 3, 5, 7, 2 and 4
2. Find the median of 7, 9, 2, 4, 5, 0 and 3

3. Workout the mode of 3, 5, 4, 2, 3, 0, 5, 1 and 3
4. Find the median of 3, 5, 8, 3, 1, 9 and 4
5. Workout the model frequency of 4, 6, 1, 6, 4, 0 and 4
6. Find the median of 3, 5, 1, 0, 8, 9 and 4
7. Workout the mean of 3, 6, 1,0, 7, 3 and 1
8. Workout the mean of 9, 0, 2, 6, 1, 7, 8, and 7
9. Find the range 0f 9, 0,1, 4, 9, 5, 8 and 3
10. Find the mode of 3, 5, 7, 2, 3, 0 and 3

LESSON 10

Determining average of bar graphs and line graphs

Use the graph below to answer the questions about it.



Questions

a) Find the range of temperatures.
Range = H – L

Range = $24^0c - 12^0c$

Range = 12^0c

b) Find the median of the temperature

= (12, 16, 18, 20, 24) ^0c

= 18^0c

c) Workout the average temperature

$$\text{Average} = \frac{Sum\ of\ data}{No.of\ data}$$

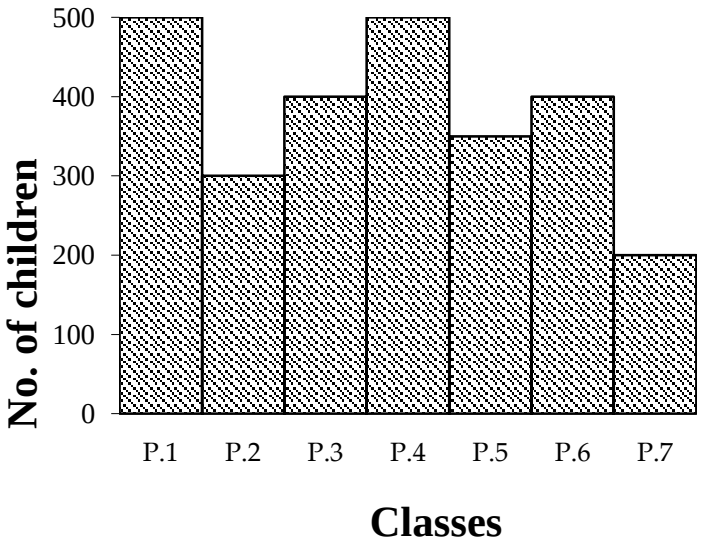
$$\text{Average} = \frac{12+16+18+20+24}{5}$$

$$\text{Average} = \frac{80}{5}$$

Average = 16^0c

Evaluation activity

1. Use the graph below to answer the questions about it.

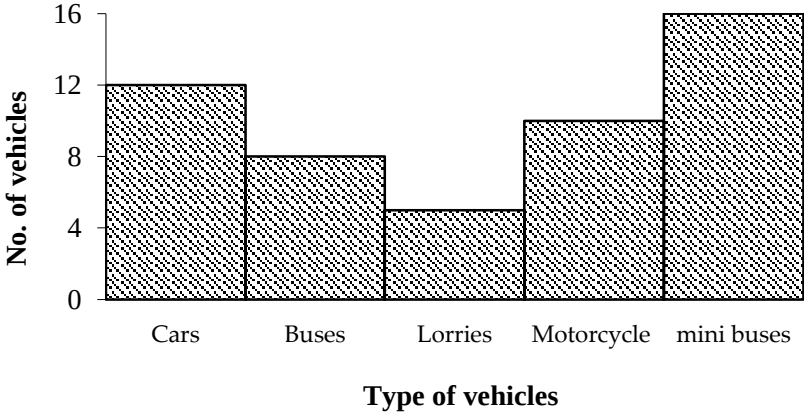


Questions

a) Find the range
b) Find the median number of children
c) Workout the mean of the number of children

2. Use the graph below to answer the questions about it.

3.



Questions

a) Find the range
b) Find the median number of vehicles
c) Workout the mean of the number of vehicles

3. In a class of 20 pupils, the attendance in one of weeks is seen table below.

Days of the week	Cars counted
Monday	𝍸 𝍸 𝍸 ||
Tuesday	𝍸 |||
Wednesday	𝍸 𝍸 𝍸 ||||
Thursday	𝍸 𝍸 𝍸
Friday	𝍸 𝍸 |

Question: Find the median and mean attendance.

END OF DATA HANDLING (PRIMARY FIVE)