# LESSON PLAN 12

**CLASS : 9** **SUBJECT : MATHEMATICS** **TEACHER'S NAME :**

| NAME OF THE UNIT | SUB-TOPICS | | NO OF PERIODS REQUIRED | | | Time line for teaching | |
|---|---|---|---|---|---|---|---|
| | | | Teaching | Practice | TOTAL | From | To |
| **STATISTICS** | 12.1 | GRAPHICAL REPRESENTATION OF DATA<br><br>A) BAR GRAPH<br><br>B) HISTOGRAM<br><br>C) FREQUENCY POLYGON | 9 | 9 | 18 | | |
| | | TOTAL | 9 | 9 | 18 | | |
| **PRE-REQUISITES & SKILLS** | Every Pupil is expected to have basic knowledge in<br>  # respresentation of data in different forms like pictograph, bar graph, double bar graph, line graph,pie graph etc.,<br>  # co ordinate geometry, locating points etc.,<br>  # drawing graphs on graph sheet using the given data.<br>  # basic mathematical operations . | | | | | | |

| Learning Outcomes |
|---|

After Completion of this lesson every student will be able to
  # identify the differences between various graphs already known and newly learnt.
  # draw bar graph or histogram or frequency polygon where ever necessary .
  # distinguish between bar graph and a histogram.
  # utilize the graphs known  in real life situations.
  # compare the variations of data reperesentated in bar graphs.
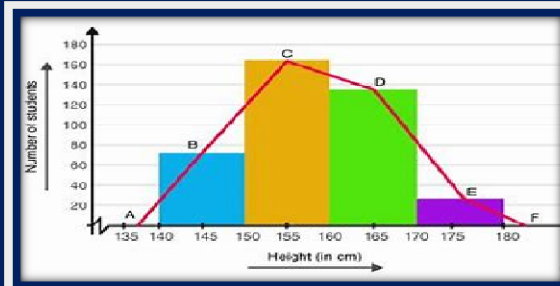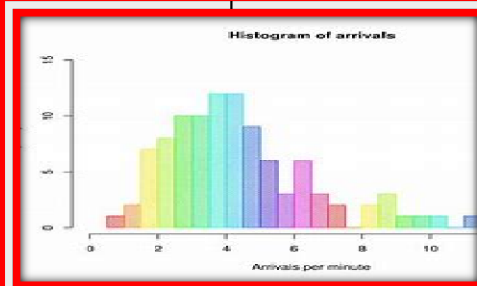  # appriciate the utility of "STATISTICS" in real life sums

# Teaching Learning Process

| INTRODUCTION /INDUCTION | Experience & Reflection |
|---|---|
| Teacher introduces the chapter of STATISTICS  by recalling their previous knowledge on DATA HANDLING  in their previous classes as well as previous lessons of this class. Teacher briefly recapitualates all those things once that they have learnt in their previous classes. | # Pupils will recollect their knowledge on data handling from their previous classes and utilize here to explore more deeper in Statistics. #  Students will experience the usage of the concept of Statistics and appreciate its usage. |

| EXPLICIT TEACHING/TEACHER MODELLING (I DO) | GROUP WORK (WE DO) | INDEPENDENT WORK (YOU DO) | NOTES |
|---|---|---|---|
| **12.1. Graphical representation of data.**<br><br>Teacher once recalls pupils knowledge on different types of graphs they are familiar with from their previous classes in the chapter data handling. Later teacher guides children in digging more deeper into the representation of data using graphs like, Bar graph, Histogram and Frequency Polygon | Pupil groups will be formed and are given different data sheets and are asked to draw bar graphs, histograms and frequency polygons as per the suitability of the data presented in their sheet. Here teacher guides children in picking the right graph and drawing the graph with | Every individual will participate in the activity and learn the concept of representing data using various graphs | different types of graphs in representing data<br>1) Bar graph<br>2) Histogram<br>3) Frequency polygon |

teacher makes children groups to explore different graphs in representing data at different situations

Construct a histogram for the following frequency distribution table

| Weights | Number of students |
|---|---|
| 35.5-40.5 | 15 |
| 30.5-35.5 | 10 |
| 40.5-45.5 | 9 |
| 45.5-50.5 | 3 |
| 50.5-55.5 | 2 |
| 55.5-60.5 | 1 |



monthly income of Rs.20,000 had planned the following expenditures per month under various

| Heads | Expenditure in thousands |
|---|---|
| Grocery | 4 |
| Rent | 5 |
| Education | 5 |
| Medicine | 2 |
| Fuel | 2 |
| Entertainme | 1 |
| Misc | 1 |

| EXPLICIT TEACHING/TEACHER MODELLING (I DO) | GROUP WORK (WE DO) | INDEPENDENT WORK (YOU DO) | NOTES |
|---|---|---|---|
| | | | |

Consider the marks out of 100, obtained by 51 students of a class in a test, given in the following table. Draw a frequency polygon for the data to this frequency distribution table

**FREQUENCY POLYGON**

| Marks | No.of Students |
|---|---|
| 0-10 | 5 |
| 10-20 | 10 |
| 20-30 | 4 |
| 30-40 | 6 |
| 40-50 | 7 |
| 50-60 | 3 |
| 60-70 | 2 |
| 70-80 | 2 |
| 80-90 | 3 |
| 90-100 | 9 |

No.of Students

| | CHECK FOR UNDERSTANDING QUESTIONS |
|---|---|
| 1. Factual | 1. A survey conducted by an organisation for the cause of illness and death among the women between the ages 15 - 44 (in years) worldwide, found the following figures (in %):<br><br>| S.No. | Causes | Female fatality rate (%) |<br>|---|---|---|<br>| 1. | Reproductive health conditions | 31.8 |<br>| 2. | Neuropsychiatric conditions | 25.4 |<br>| 3. | Injuries | 12.4 |<br>| 4. | Cardiovascular conditions | 4.3 |<br>| 5. | Respiratory conditions | 4.1 |<br>| 6. | Other causes | 22.0 |<br><br>(i) Represent the information given above graphically.<br>(ii) Which condition is the major cause of women's ill health and death worldwide?<br>(iii) Try to find out, with the help of your teacher, any two factors which play a major role in the cause in (ii) above being the major cause. |
| 2. Open Ended/Critical Thinking | The runs scored by two teams A and B on the first 60 balls in a cricket match are given below:<br><br>| Number of balls | Team A | Team B |<br>|---|---|---|<br>| 1 – 6 | 2 | 5 |<br>| 7 – 12 | 1 | 6 |<br>| 13 – 18 | 8 | 2 |<br>| 19 – 24 | 9 | 10 |<br>| 25 – 30 | 4 | 5 |<br>| 31 – 36 | 5 | 6 |<br>| 37 – 42 | 6 | 3 |<br>| 43 – 48 | 10 | 4 |<br>| 49 – 54 | 6 | 8 |<br>| 55 – 60 | 2 | 10 |<br><br>Represent the data of both the teams on the same graph by frequency polygons.<br>[Hint : First make the class intervals continuous.] |

| | |
|---|---|
| 3.Student Practice questions & Activities | A random survey of the number of children of various age groups playing in a park was found as follows: |

| Age (in years) | Number of children |
|---|---|
| 1 - 2 | 5 |
| 2 - 3 | 3 |
| 3 - 5 | 6 |
| 5 - 7 | 12 |
| 7 - 10 | 9 |
| 10 - 15 | 10 |
| 15 - 17 | 4 |

Draw a histogram to represent the data above.

Given below are the seats won by different political parties in the polling outcome of a state assembly elections:

| Political Party | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| Seats Won | 75 | 55 | 37 | 29 | 10 | 37 |

(i) Draw a bar graph to represent the polling results.

(ii) Which political party won the maximum number of seats?

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|---|---|
| 4. Assessment | Exercise sums and worksheet on Statistics |