

# LESSON PLAN



**DLF Public School**

THE LEARNING ACADEMY  
Managed By *Darbari Lal Foundation*

| Class | Subject     | Time slot | Lesson     | Topic<br>P4                                                                                            |
|-------|-------------|-----------|------------|--------------------------------------------------------------------------------------------------------|
| IX    | Mathematics | 35 Mins   | Statistics | <input type="checkbox"/> <b>Graphical Representation of Data</b><br><input type="checkbox"/> Bar Graph |

**Expected Learning Outcome:** Learners will be able to

- 1) Interpret data from the given bar graph.
- 2) draw the bar graph to depict the given data

**Expected skill development:**

- 1) Representation skill while drawing Bar Graph
- 2) Procedural thinking
- 3) Communicating using mathematical terminology
- 4) Visual and spatial ability
- 5) Strategic thinking

FLOW OF LESSON WITH RESPECT TO TIME (Introduction/ warm-up, Content, Think Line, Closure)

| <u>Pedagogy</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | <u>Content</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
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| <p><u>(5 mins) Warm Up</u><br/> <u>(Individual work)+ Black Board</u></p> <p>Facilitator will discuss the problems of Ex14.2 if any. Learners will recall the graphical representation.</p> <div> </div> <p><u>It is well said that one picture is better than a thousand words. Why?</u></p> <p>Why do we need graphs for representation data?<br/>         How does it help us?<br/>         Example 5 on Page 247 will be discussed in the class where the learners will interpret the bar graph.</p> | <p><u>Response by the learners:</u></p> <p>The graphical representation makes it easier to understand than the actual data. Learners, as done in earlier class, will recall that - A bar graph is a pictorial representation of data in which usually bars of uniform width are drawn with equal spacing between them on one axis (say, the x-axis), depicting the variable. The values of the variable are shown on the other axis (say, the y-axis) and the heights of the bars depend on the values of the variable.</p> |

| <div>(20 mins ) Demonstration by Facilitator on Board</div>                             | <div>Facilitator will take Q1 of Ex 14.3 to reinforce the topic.</div> <div>A survey conducted by an organization for the cause of illness and death among the women between the ages 15 - 44 (in years) worldwide, found the following figures (in %):</div> <table><tr><th>S.No.</th><th>Causes</th><th>Female fatality rate (%)</th></tr><tr><td>1.</td><td>Reproductive health conditions</td><td>31.8</td></tr><tr><td>2.</td><td>Neuropsychiatric conditions</td><td>25.4</td></tr><tr><td>3.</td><td>Injuries</td><td>12.4</td></tr><tr><td>4.</td><td>Cardiovascular conditions</td><td>4.3</td></tr><tr><td>5.</td><td>Respiratory conditions</td><td>4.1</td></tr><tr><td>6.</td><td>Other causes</td><td>22.0</td></tr></table> <div><div>(i) Represent the information given above graphically.</div><div>(ii) Which condition is the major cause of women's ill health and death worldwide?</div><div>(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.</div></div> | S.No.                    | Causes                            | Female fatality rate (%) | 1.  | Reproductive health conditions | 31.8 | 2.        | Neuropsychiatric conditions | 25.4               | 3.  | Injuries               | 12.4 | 4.    | Cardiovascular conditions | 4.3   | 5.  | Respiratory conditions | 4.1 | 6. | Other causes | 22.0 |
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| S.No.                                                                                   | Causes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Female fatality rate (%) |                                   |                          |     |                                |      |           |                             |                    |     |                        |      |       |                           |       |     |                        |     |    |              |      |
| 1.                                                                                      | Reproductive health conditions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 31.8                     |                                   |                          |     |                                |      |           |                             |                    |     |                        |      |       |                           |       |     |                        |     |    |              |      |
| 2.                                                                                      | Neuropsychiatric conditions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 25.4                     |                                   |                          |     |                                |      |           |                             |                    |     |                        |      |       |                           |       |     |                        |     |    |              |      |
| 3.                                                                                      | Injuries                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 12.4                     |                                   |                          |     |                                |      |           |                             |                    |     |                        |      |       |                           |       |     |                        |     |    |              |      |
| 4.                                                                                      | Cardiovascular conditions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 4.3                      |                                   |                          |     |                                |      |           |                             |                    |     |                        |      |       |                           |       |     |                        |     |    |              |      |
| 5.                                                                                      | Respiratory conditions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 4.1                      |                                   |                          |     |                                |      |           |                             |                    |     |                        |      |       |                           |       |     |                        |     |    |              |      |
| 6.                                                                                      | Other causes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 22.0                     |                                   |                          |     |                                |      |           |                             |                    |     |                        |      |       |                           |       |     |                        |     |    |              |      |
| <div>(10 mins) In class Exercise:: Closure</div> <div>Discussion of Q2 of Ex 14.3</div> | <div>Q2. The following data on the number of girls (to the nearest ten) per thousand boys in different sections of Indian society is given below</div> <table><tr><th>Section</th><th>Number of girls per thousand boys</th></tr><tr><td>Scheduled Caste (SC)</td><td>940</td></tr><tr><td>Scheduled Tribe (ST)</td><td>970</td></tr><tr><td>Non SC/ST</td><td>920</td></tr><tr><td>Backward districts</td><td>950</td></tr><tr><td>Non-backward districts</td><td>920</td></tr><tr><td>Rural</td><td>930</td></tr><tr><td>Urban</td><td>910</td></tr></table> <div><div>(i) Represent the information above by a bar graph.</div><div>(ii) In the classroom discuss what conclusions can be arrived at from the graph.</div></div>                                                                                                                                                                                                                                                                                                                                            | Section                  | Number of girls per thousand boys | Scheduled Caste (SC)     | 940 | Scheduled Tribe (ST)           | 970  | Non SC/ST | 920                         | Backward districts | 950 | Non-backward districts | 920  | Rural | 930                       | Urban | 910 |                        |     |    |              |      |
| Section                                                                                 | Number of girls per thousand boys                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                          |                                   |                          |     |                                |      |           |                             |                    |     |                        |      |       |                           |       |     |                        |     |    |              |      |
| Scheduled Caste (SC)                                                                    | 940                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                          |                                   |                          |     |                                |      |           |                             |                    |     |                        |      |       |                           |       |     |                        |     |    |              |      |
| Scheduled Tribe (ST)                                                                    | 970                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                          |                                   |                          |     |                                |      |           |                             |                    |     |                        |      |       |                           |       |     |                        |     |    |              |      |
| Non SC/ST                                                                               | 920                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                          |                                   |                          |     |                                |      |           |                             |                    |     |                        |      |       |                           |       |     |                        |     |    |              |      |
| Backward districts                                                                      | 950                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                          |                                   |                          |     |                                |      |           |                             |                    |     |                        |      |       |                           |       |     |                        |     |    |              |      |
| Non-backward districts                                                                  | 920                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                          |                                   |                          |     |                                |      |           |                             |                    |     |                        |      |       |                           |       |     |                        |     |    |              |      |
| Rural                                                                                   | 930                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                          |                                   |                          |     |                                |      |           |                             |                    |     |                        |      |       |                           |       |     |                        |     |    |              |      |
| Urban                                                                                   | 910                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                          |                                   |                          |     |                                |      |           |                             |                    |     |                        |      |       |                           |       |     |                        |     |    |              |      |

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| <p>Proposed Questions (must include the questions asked in the classroom <u>and</u> the ones given as class-work in the notebook)</p> <p>Mentioned above</p> | <p><b>Evaluation/ Assessment:</b> Teacher will assess the children randomly and also through student teacher interaction.</p> |
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| <p style="text-align: center;"><b>Learners on the way</b></p> <p>When do we represent data through bar graph and when through histogram?</p> | <p style="text-align: center;"><b>Advanced Learner</b></p> <p>The length of 40 leaves of a plant are measured correct to one millimetre, and the obtained data is represented in the following table:</p> <table border="1"> <thead> <tr> <th>Length (in mm)</th><th>Number of leaves</th></tr> </thead> <tbody> <tr><td>118 - 126</td><td>3</td></tr> <tr><td>127 - 135</td><td>5</td></tr> <tr><td>136 - 144</td><td>9</td></tr> <tr><td>145 - 153</td><td>12</td></tr> <tr><td>154 - 162</td><td>5</td></tr> <tr><td>163 - 171</td><td>4</td></tr> <tr><td>172 - 180</td><td>2</td></tr> </tbody> </table> <p>(i) Draw a histogram to represent the given data. [Hint: First make the class intervals continuous]</p> | Length (in mm) | Number of leaves | 118 - 126 | 3 | 127 - 135 | 5 | 136 - 144 | 9 | 145 - 153 | 12 | 154 - 162 | 5 | 163 - 171 | 4 | 172 - 180 | 2 |
|----------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|------------------|-----------|---|-----------|---|-----------|---|-----------|----|-----------|---|-----------|---|-----------|---|
| Length (in mm)                                                                                                                               | Number of leaves                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                |                  |           |   |           |   |           |   |           |    |           |   |           |   |           |   |
| 118 - 126                                                                                                                                    | 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                |                  |           |   |           |   |           |   |           |    |           |   |           |   |           |   |
| 127 - 135                                                                                                                                    | 5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                |                  |           |   |           |   |           |   |           |    |           |   |           |   |           |   |
| 136 - 144                                                                                                                                    | 9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                |                  |           |   |           |   |           |   |           |    |           |   |           |   |           |   |
| 145 - 153                                                                                                                                    | 12                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                |                  |           |   |           |   |           |   |           |    |           |   |           |   |           |   |
| 154 - 162                                                                                                                                    | 5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                |                  |           |   |           |   |           |   |           |    |           |   |           |   |           |   |
| 163 - 171                                                                                                                                    | 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                |                  |           |   |           |   |           |   |           |    |           |   |           |   |           |   |
| 172 - 180                                                                                                                                    | 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                |                  |           |   |           |   |           |   |           |    |           |   |           |   |           |   |
| <p><b>Materials needed/ Resources:- Chalk, Duster NCERT Exemplar, NCERT Text Book</b></p>                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                |                  |           |   |           |   |           |   |           |    |           |   |           |   |           |   |
| <p><b>Common Misconceptions:</b><br/>Making of Histogram with gap.</p>                                                                       | <p><b>Addressing the misconceptions:</b><br/>By taking various examples the learners will be explained, since the data is continuous so there is no gap.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                |                  |           |   |           |   |           |   |           |    |           |   |           |   |           |   |

Home Assignment: Attempt Q – 3 of Ex – 14.3 of NCERT Text Book in the notebook.