Lesson Description

In this lesson we:

- Introduced and do questions relating to:
  - Classifying and organizing data
  - Summarizing data
  - Representing data
  - Analysing data

Summary

Frequency Table

<table>
<thead>
<tr>
<th>HEIGHTs</th>
<th>TALLY</th>
<th>FREQUENCY</th>
</tr>
</thead>
<tbody>
<tr>
<td>130 – 139</td>
<td>I II</td>
<td>7</td>
</tr>
<tr>
<td>140 – 149</td>
<td>I II III</td>
<td>10</td>
</tr>
<tr>
<td>150 – 159</td>
<td>I II III I</td>
<td>11</td>
</tr>
<tr>
<td>160 – 169</td>
<td>I III</td>
<td>8</td>
</tr>
<tr>
<td>170 - 179</td>
<td>III</td>
<td>4</td>
</tr>
</tbody>
</table>
Test Yourself

Question 1
Consider each of the graphs below when answering questions 1 to 3:

Graph 1

![Chart Title]

Sales

- Category 1
- Category 2
- Category 3
- Category 4

Series 1
Series 2
Series 3

Graph 2

Which graph above would be used when making a comparison between two sets of data?
A  Graph 1
B  Graph 2
C  Graph 1 and Graph 2 are possible
D  Neither Graphs

Question 2
Which graph above would be used when determining the most popular food in the school tuck-shop?
A  Graph 1
B  Graph 2
C  Graph 1 and Graph 2 are possible
D  Neither Graphs

Question 3
Which graph could be used when representing the heights of various people in your class. The heights would be classified into groups. (example. 0 – 49cm; 50 – 99cm; 100 – 149cm; etc.)
A  Graph 1
B  Graph 2
C  Graph 1 and Graph 2 are possible
D  Neither Graphs
Question 4
Consider the following when answering questions 4 - 10

<table>
<thead>
<tr>
<th>Mode of Transport</th>
<th>ABC Rural School (%)</th>
<th>DEF City School (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Walk</td>
<td>71,1%</td>
<td>10,1%</td>
</tr>
<tr>
<td>Car</td>
<td>2%</td>
<td>70,5%</td>
</tr>
<tr>
<td>Bus</td>
<td>6,5%</td>
<td>6,5%</td>
</tr>
<tr>
<td>Taxi</td>
<td>5,6%</td>
<td>10,6%</td>
</tr>
<tr>
<td>Bicycle</td>
<td>14,8%</td>
<td>A</td>
</tr>
</tbody>
</table>

Calculate the value of A.
A  14,8%
B  2,3%
C  100%
D  85,2%

Question 5
If there are 9000 students in ABC Rural School, how many rode a bicycle to school?
A  14 students
B  15 students
C  1 332
D  207

Question 6
What mode of transport is the same in both schools?
A  Taxi
B  Car
C  Bus
D  Bicycle

Question 7
Why should this data NOT be represented in a histogram?
A  Takes too long
B  The data is not continuous
C  There is not enough information
D  None of the above

Question 8
Do you think that a car is essential in the city? Why?
A  No – Students can walk
B  Yes – There is not a lot of public transport and walking can be unsafe
C  Yes
D  No
Question 9

How many degrees is the black shaded area if it makes up 75% of the entire circle?

A 75°
B 225°
C 262.5°
D 270°

Question 10

The angle representing the number of students who travel to school by bicycle is 67.5°. How many students does this represent if there are 16 students in the class?

A 10
B 11
C 3
D None of the above

Improve your Skills

Question 1

A very bored Grade 11 students sat at the school gate and counted the different colour cars that drove past and the sex of the driver. (M=Male; F=Female). The results were as follows:

white(M)  red(F)  red(F)  red(M)  green(M)  white(M)  white(F)
green(F)  red(M)  red(M)  green(F)  red(M)  white(F)  white(M)
white(F)  blue(M)  green(F)  white(M)  blue(F)  blue(M)
blue(M)  red(F)  blue(M)  yellow(F)

Copy and complete the following table:

<table>
<thead>
<tr>
<th>COLOUR</th>
<th>MALES</th>
<th>FEMALES</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Tally</td>
<td>Frequency</td>
</tr>
<tr>
<td>Red</td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blue</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Green</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yellow</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1.1 How many cars came past the students?
1.2 What is the most popular colour car?
1.3 Which colour/s is favoured among the women?
1.4 Which colour/s is favoured among the men?

Question 2

Consider the Cumulative Frequency Table below which is a summary of the results after a class of boys were asked: “Which is your favourite colour?”

<table>
<thead>
<tr>
<th>COLOUR</th>
<th>TALLY</th>
<th>FREQUENCY</th>
<th>CUMULATIVE FREQUENCY</th>
</tr>
</thead>
<tbody>
<tr>
<td>BLUE</td>
<td></td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>RED</td>
<td>III</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GREEN</td>
<td>II</td>
<td></td>
<td></td>
</tr>
<tr>
<td>YELLOW</td>
<td>III</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2.1 On the table above complete the Cumulative Frequency Table by filling in all the open gaps.
2.2 Draw a bar graph using the set of axes on the axes provided.

```
<table>
<thead>
<tr>
<th>Boys</th>
<th>Rugby</th>
<th>Soccer</th>
<th>Ice-Skating</th>
<th>Athletics</th>
<th>Swimming</th>
<th>Hockey</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>9</td>
<td>4</td>
<td>0</td>
<td>A</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Girls</td>
<td>1</td>
<td>0</td>
<td>2</td>
<td>1</td>
<td>B</td>
<td>2</td>
</tr>
</tbody>
</table>
```

Question 3

A class of 24 students, made up of 16 boys and 8 girls were asked which sport they enjoy (the most) watching on television. The following results were recorded:

3.1 How many boys enjoying watching Athletics the most? (The value of A)
3.2 How many girls enjoy watching Swimming the most? (The value of B)
3.3 Use the data above (including the values of A and B) to draw a double bar graph.
Question 4

When asked how a group of students get to school, they answered as follows:

<table>
<thead>
<tr>
<th>Form of Transport</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bicycle</td>
<td>2</td>
</tr>
<tr>
<td>Motorbike</td>
<td>5</td>
</tr>
<tr>
<td>Walk</td>
<td>7</td>
</tr>
<tr>
<td>Car</td>
<td>15</td>
</tr>
<tr>
<td>Taxi</td>
<td>1</td>
</tr>
</tbody>
</table>

The data was presented on a pie chart as follows:

4.1 If you had drawn the pie chart, how many degrees would you have made “Car”? Show all your working.

4.2 The survey was to include a further 14 students of which 7 said they go to school by car.

4.2.1 Would the size of “Car” in the pie chart change?

4.2.2 If so, show how many degrees “Car” would now be on the pie chart. If your answer to 4.2.1 above was “NO”, explain your reasoning. (Show your working where necessary).

Question 5

The heights of 40 learners are given below:

142  170  162  131  145  146  147  160  159  150
141  132  169  172  139  146  152  154  140  145
161  163  156  157  171  168  166  151  152  132
142  150  161  138  170  132  149  150  138  152
5.1 Complete the following Frequency table.

<table>
<thead>
<tr>
<th>HEIGHTs</th>
<th>TALLY</th>
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5.2 Draw a Histogram

![Histogram Diagram]

Question 6

Consider the Cumulative Frequency Table below which is a summary of the results after a class of boys were asked: “Which is your favourite colour?”

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<th>CUMULATIVE FREQUENCY</th>
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<td>BLUE</td>
<td></td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>RED</td>
<td>III</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>GREEN</td>
<td>II</td>
<td></td>
<td></td>
</tr>
<tr>
<td>YELLOW</td>
<td>III</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

6.1 Complete the Cumulative Frequency Table by filling in all the open gaps.

6.2 Draw a frequency bar graph using the set of axes...
6.3  How many students are in the class?