

**B Determine the frequency, mode, maximum value, minimum value, range and mean from a pie chart**

Tests are given to pupils to gain information about how much knowledge and skills pupils have learnt over a period of time.

**Example**  
Puan Rosnah gave a Mathematics test to pupils of Year 6 Amanah. The full score for the test is 50 marks. The test scores for 10 pupils are shown in the pie chart below. Determine the frequency for 35 marks. Then, determine the mode, the maximum and minimum values, the range and the mean.

First, find the number of pupils for each score.

30 marks : 10% of 10 pupils = $\frac{10}{100} \times 10 = 1$ pupil
35 marks : 30% of 10 pupils = $\frac{30}{100} \times 10 = 3$ pupils
40 marks : 40% of 10 pupils = $\frac{40}{100} \times 10 = 4$ pupils
45 marks : 10% of 10 pupils = $\frac{10}{100} \times 10 = 1$ pupil
50 marks : 10% of 10 pupils = $\frac{10}{100} \times 10 = 1$ pupil

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- Revise with pupils the meanings of frequency, mode, minimum and maximum values, range and mean.
- Ask pupils to find out the frequency, mode, minimum and maximum values, range and mean from their data table.
- Choose a few groups to present their findings. Discuss and provide feedback.
- Extend the discussion using the example in the textbook (TB pgs. 220 – 221).
- Consolidate pupils' understanding by getting them to do the activity in Let's Work Together (TB pg. 222).
- Allow pupils to discuss the question in Unit Challenge (TB pg. 226) with each other. Discuss the answer in class.

## 4% ALTERNATIVE ACTIVITY

### Prior preparation:

- Prepare pie charts with different types of data or use pie charts from newspapers or magazines.

- Ask pupils to read and understand the pie chart given in the textbook (TB pg. 220).
- Let pupils work in groups of four. Provide each group with a pie chart.

E.g:

Then, construct a data table.

Score	30 marks	35 marks	40 marks	45 marks	50 marks
Number of pupils	1	3	4	1	1

From the data table, determine the frequency for 35 marks. Then, determine the mode, the maximum and minimum values, the range and the mean.

There are 3 pupils who got 35 marks.  
So, the frequency for 35 marks is **3**.

The score that most pupils obtained is 40 marks.  
So, the mode is **40 marks**.

The highest score obtained is 50 marks.  
So, the maximum value is **50**.

The lowest score obtained is 30 marks.  
So, the minimum value is **30**.

Range = Maximum value – Minimum value  
= 50 – 30  
= 20  
So, the range is **20**.

Mean =  $\frac{\text{Total of scores}}{\text{Number of pupils}}$   
=  $\frac{30 + 35 + 35 + 35 + 40 + 40 + 40 + 40 + 45 + 50}{10}$   
=  $\frac{370}{10}$   
= **37**  
So, the mean is **37 marks**.

**TAKE NOTES**  
Mode refers to the score with the highest frequency.  
Maximum value is the highest score in a set of data.  
Minimum value is the lowest score in a set of data.  
Range is the difference between the maximum value and the minimum value.  
Mean refers to the average score of the pupils.

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The pie chart shows the amount of daily pocket money received by 20 pupils.

**Daily Pocket Money of 20 Pupils**

- Get pupils to calculate the number of pupils for the different amounts of pocket money on a display sheet.