Strand: Exploring, analysing and modelling data
   Number
Band: Middle Years
Standard: 3
Year Level: 6

Key Idea
Data
Students engage with data by formulating and answering questions, and collecting, organising and representing data in order to investigate and understand the world around them. [In] [T] [C] [KC2] [KC6]

Number
Students recognise relationships within different number concepts in order to make sense of and represent numerically, a range of community activities and social processes encountered in their lives. [In] [T] [KC1]

Students use computational tools and strategies, and understand and represent the thinking processes employed in solving problems involving proportions. [T] [KC6]

Outcome
3.1 Poses questions, determines a sample, collects and records data including related data, represents sample data in order to investigate the world around them. [In] [T] [C] [KC1] [KC6]

3.6 Represents and analyses relationships amongst number concepts and uses these to make sense of and represent the world. [In] [T] [KC1] [KC2]

3.8 Uses a variety of estimating and calculating strategies with whole numbers. [T] [KC6]

Task/Activities
1. Calculate the distance class members travel to and from school
2. Calculate the distance travelled each week.
3. Calculate the class average.
4. Calculate the mean.
5. Use Excel to draw a graph showing the information collected and calculated.

Examples of evidence towards achievement of outcomes
Students …
   • Gather data successfully.
   • Calculate class average and distance from mean accurately.
   • Draw appropriate column graph using Excel
Instructions

Using Excel as a spreadsheet

1. Open Excel
2. Type in the heading of **Names** in A1
3. In cells A2 to A30 type in the names of your class mates
4. B1 Type in the heading of **Distance from School**, increase the size of the box and then highlight the cells in Column B from 2 to 30, go to format and click CELLS and then alignment and change the horizontal to centre.
5. In B2 to B34 type in the relevant data
6. In C1 type in the heading of **Distance Travelled in one Week**, change size of the box and centre it as in instruction 4.
7. The next step is to use a formula to work out the distance travelled by each student in the week i.e. multiply by 10.
   - Highlight all cells C2 to C30
   - Type in our formula =B2:B30*10 followed by control and enter held at the same time.
8. Highlight all the data C2 to C30 and also C31 and click sigma on the tool bar. This will add up all the data. To calculate the average all you need to do is highlight D31 and type in our formula of =C31/29 and press enter. Label D1 **Average**
9. To calculate the individual differences from the mean, label E1 **Difference from the Mean**. Change cell width to fit and centre as done in instruction 4
   - Highlight E2 to E30
   - Type in the formula =C2:C30-“answer in D31”, not the words, but the actual number in cell D31, press control and enter held together.
10. To create a graph, highlight E1 to E 30.
    - Select chart wizard in the toolbar
    - Select column sub type 1
    - Use wizard, label y axis Kilometres
11. Save your work as Mapping 1
12. Copy your graph
13. Open a blank word document and write the heading of “Distance from School,” Change font size etc, centre it. Plus your name.
14. Paste your graph into your document and then copy and complete the following sentences.
    I live ___km away from school.
    I calculated this distance by ____ *(explain what you did)*
    Each week I travel _______km to and from school.
    I usually travel by ___.
    The average distance travelled by members of the class in a week is ____ km.
    My difference from the mean is ___ kms.
15. Type a sub heading of **Using Excel** and write a sentence about the things you learnt this lesson and another about the things you found difficult.
16. Use spell check to correct any errors and then save your work as Mapping 2.
17. Print.
Mapping Computer Task Assessment

Name ____________________________________________

Task
1. Collect data that shows the distance each student in our class travels to school each week
2. Enter this data into an Excel Spreadsheet
3. Use the formula to calculate
   • the distance travelled each week
   • the class average
   • the difference from the mean.
4. Use the information to produce a column graph.
5. Copy to a Word Document
6. Write a reflection about your work in this unit.

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Marks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data successfully entered onto the spreadsheet</td>
<td>2</td>
</tr>
<tr>
<td>Formula used to perform calculations</td>
<td>2</td>
</tr>
<tr>
<td>Well labelled column graph created</td>
<td>2</td>
</tr>
<tr>
<td>Graph inserted into a Word Document</td>
<td>2</td>
</tr>
<tr>
<td>Learning reflected upon thoughtfully</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>10</td>
</tr>
</tbody>
</table>

Exemplar on next page
Distance from School

I live 3.5 km away from school.
Each week I travel 35 km to and from school.
I usually travel by car.
The average distance travelled by members of the class in a week is 24 km.
My difference from the mean is 11 kms.

Using excel
In this lesson I found out how to use excel better and how to do a graph.
In this lesson I found it quite difficult to put in the formula.