FREE-STANDING MATHEMATICS UNITS

Foundation Level: Making Sense of Data

Student name	Student signature
Date due in	Date submitted

Assignment Map Distances

You could use a road atlas to find the distance between towns in two ways:
1. Use the table of road distances at the back.
2. Measure the distance on the map as the crow flies using a ruler and then calculate the approximate distance using the map scale.

Your task is to try to find an approximate rule to convert "as the crow flies distances" into road distances.

Choose one place in England given in the mileage chart.
Obtain both the actual road distance from the table and the "as the crow flies distance" from the map to at least **ten** other places on the mainland of Britain.

Draw up a table of results
By hand, plot points with "crow flies distance" as the horizontal axis (along the bottom) and "road distance" as the vertical axis (up the side).

Draw a straight line of best fit through the origin.
Use the gradient of your graph to get a rule so that you can convert "crow flies distances" to road distances for places not shown in the table at the back.
Check your rule with two places that are in the table but you have not used yet.
Explain what you have found out from the graph.

You must:
- ❑ select the data you need
- ❑ present the data in a table
- ❑ choose the graph axes and ensure that they are scaled correctly
- ❑ plot the points accurately
- ❑ explain any intercepts with the graph axes
- ❑ explain the gradient
- ❑ explain the general shape of the graph.

Mark guidelines are given below. The maximum mark for each theme is 17.

To achieve:	5 marks		10 marks		15 marks	
Structuring & presenting your work	Acted on advice to complete the task		Worked independently		+ Work structured logically	
Using appropriate mathematics & working accurately	No major errors		+ Evidence of checking your work		+ Appropriate, efficient & concise working	
Interpreting mathematics	Understands what solution means in terms of the real situation		+ Describe in words the main features of the situation		+ Summarise and draw appropriate conclusions.	
Comments						
Signature of lecturer					Date