Section 3: Displaying Results
More advanced ICT users: AEGIS 3 GIS Mapping

This final example shows how GIS software can be used to plot data on a map.

The GIS software could be used in one of two ways:

1. Starting from scratch, where the students have to design their GIS maps and plot the sample sites, add layers and import the data table
2. Use the program as a worksheet where the teacher has already prepared the materials

In this exercise, the creation of the worksheet will be explained. These instructions could be given to the students once the teacher is confident using the software.

Step 1: Find a map and save as a jpeg or bmp

- **Find the map** using a suitable mapping website (e.g. MultiMap). I have the OS Memory Map software and I get my maps from there. I would strongly urge departments to invest in this software.
- **You have to save the map.** Screenshots can be pasted into Microsoft Paint or other image editing software and saved as a jpeg file.
- I use Adobe Activeshare 4.0 (old program!) and pictures can be simply pasted into albums and then are saved as jpeg files

Step 2: Prepare the Excel file

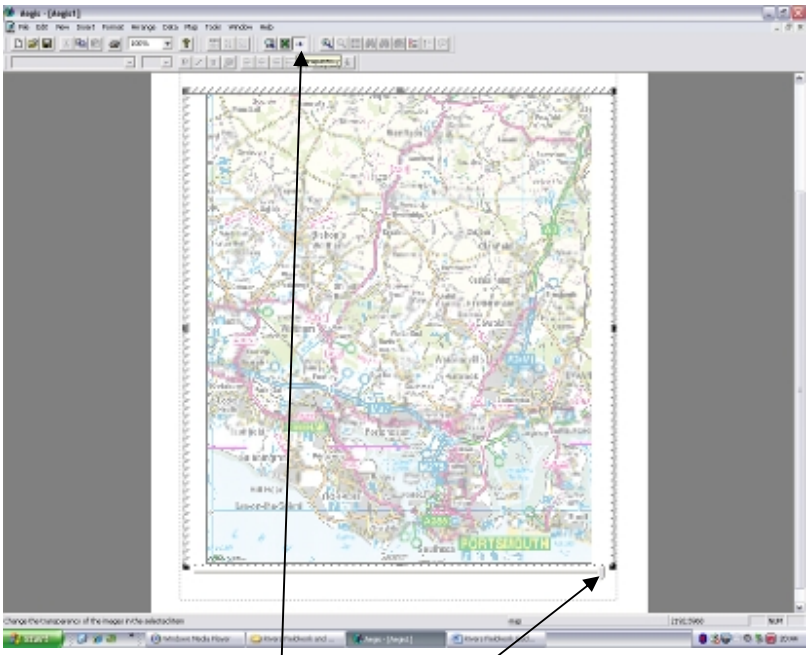
I have found that AEGIS sometimes doesn't work particularly well with an Excel file with multiple worksheets.

- **Highlight your table on the 'Master' worksheet** (This example uses the 'Meon Master' file)
- **Copy the table**
- **Open a new Excel file** ('ctrl' and 'n' at the same time)
- **Right click** on the **a1 cell** and select **'Paste Special'**
- Select **'values'** and then **press ok**
- **Save this file**

Step 3: Open AEGIS 3

- Click **'Insert' 'Map..'** and **click 'next'**
- Select **'Raster map or Photograph'** and press **'next'**
- **Locate your file** (my example GA AEGIS Meon Map) and press next
- **Press next** until you are asked to either 'link to external file' or '**save image in worksheet'**, select the latter and select next and then **press 'finish'**
- **Resize the map** to make it almost fill the page as you would any normal text box or shape

Next:

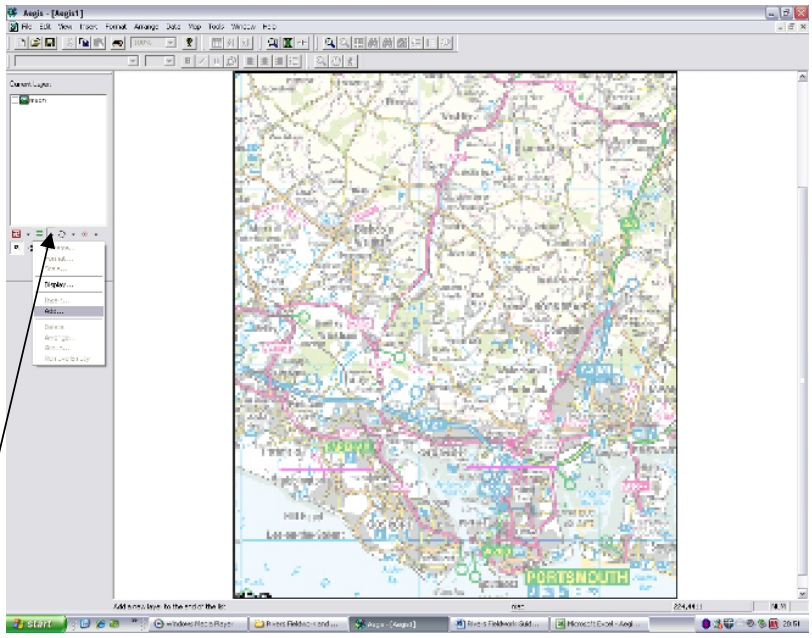


- **Click** on the **transparency button**
- A slider will appear under the map. Slide to **the left and release when you are happy** with the result, the graphs that will be plotted on the map will stand out more as a result
- **Click the transparency button** again to leave the application

Step 4: Plot the sample sites on the map

N.B. It is crucial that you spell the sample sites exactly the same as they appear in the AEGIS Meon worksheet; this is how the software knows where to display the data from the Excel file onto the map

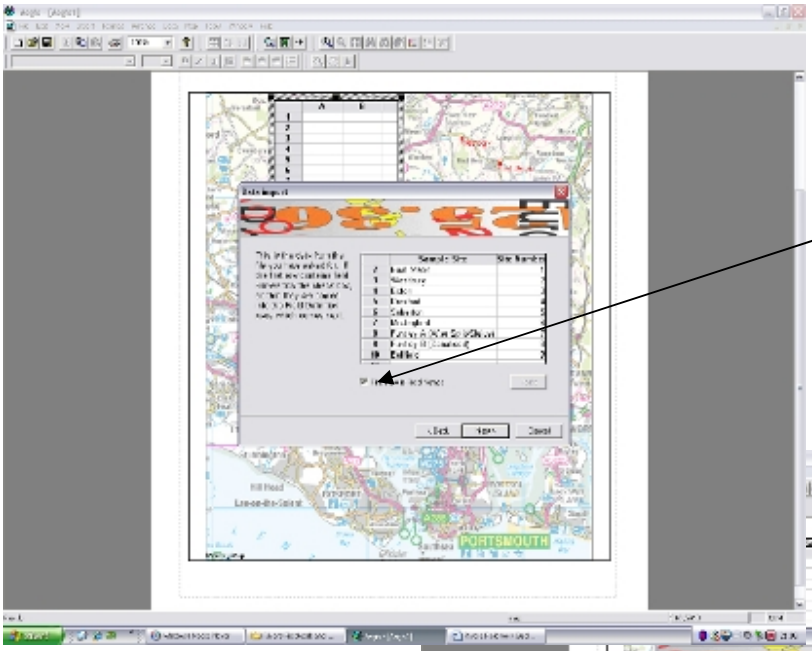
- Make sure the **map is selected** (it will have a border present)
- Select **'Map'** from the menu and then **'edit map'**
- The screen will change to the one shown on the following page



- **Select the arrow to the right of the horizontal green lines and then select Add…**
- Select **next** and **type a layer name**- **'sample sites'** then **select 'Point'** and then **press 'Next'**
- **Choose a colour**. I have chosen red
- Alter the font and size if you wish and then **press 'finish'**
- **Click on the '+' button** (partially obscured in the box above)
- A hand icon will appear. **Click in the correct location of the site on the map** and **give the point a name**. IT HAS TO BE EXACTLY THE SAME AS IT APPEARS IN THE EXCEL WORKSHEET
- Close the editor by **clicking on the X** in the menu on the left once all the sites have been plotted

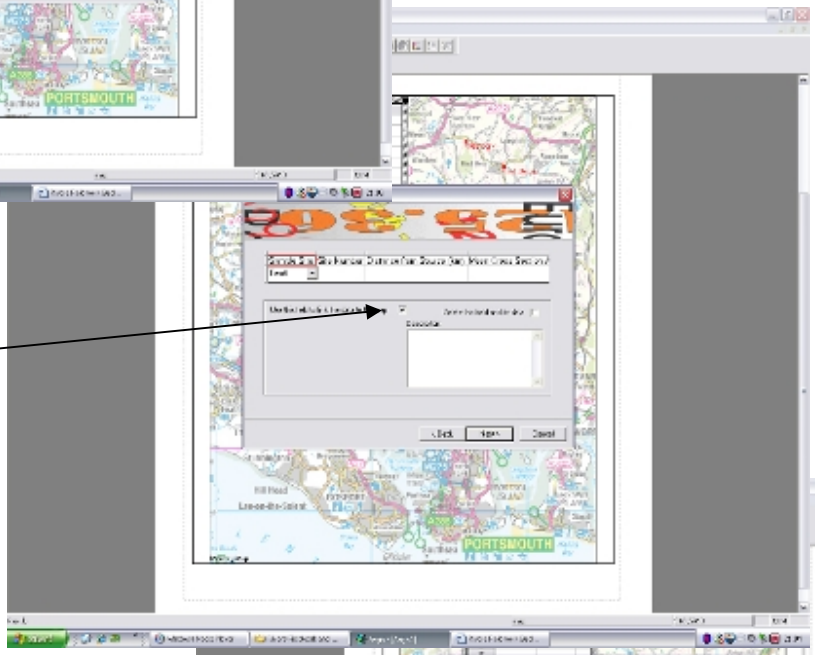
Step 5: The data table

- *Make sure all excel files are closed*
- **Click on the map** Select **'insert'** in the menu and then **'data table…'**
- Select **'read a file into the table'**
- **Locate your excel file**

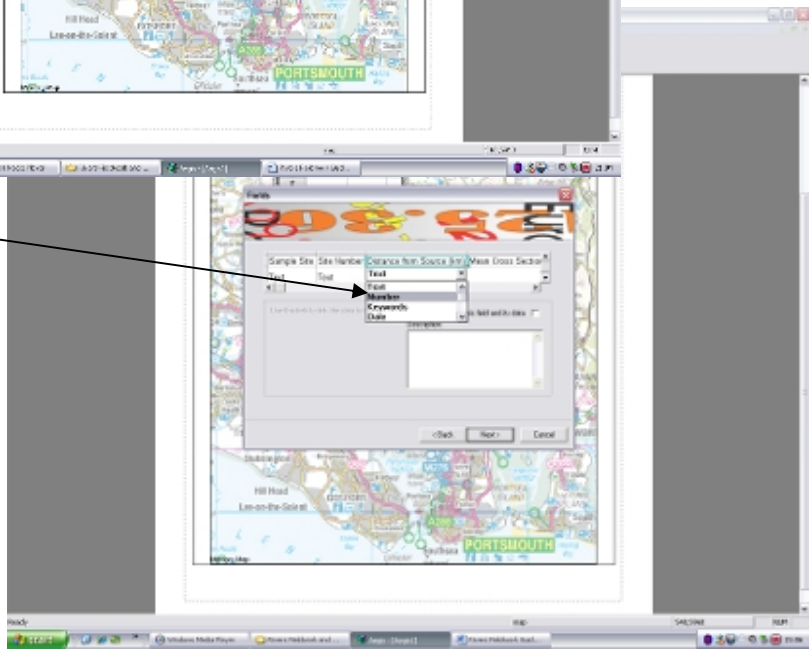


Make sure you **select 'first row is field names'**

This is to allow the software to give you the option of drawing the graphs later on



- Select **'use this field to link the data to the map'** when the first column is selected



- You then need to **click on each of the columns** and make sure you **change each column to 'number' (if not correct already)**
- Then press **'Next'** and then **'finish'**
- You can then **move/resize the table so that it doesn't obscure the map** (the table doesn't need to be on view)

Step 6: Start using the GIS!

If you have followed the steps, the program will be able to plot the chart onto the map. To do this, take the following steps:

1. Select the **map** and then click **on the yellow circle**, next to the red binoculars & press **'next'**
2. Select **'charts'** and then press **'next'**
3. **Tick the box** for the **graph you want to draw** (I will choose Pebble Long Axis, as I have done this in the previous examples) and then press **'next'**
4. **Press next again**
5. **Select the type of chart you want to use**- if you have got this far I'm sure you will be able to play around with this! I have chosen '**proportional circle or pie chart'** and in the **'maximum chart size' box I have chosen 25mm**...
6. Press **'next'** again
7. **Select a colour**- press **'next'** when you've found the right one
8. Unless you want to change the name of the chart, press **'next'** and then **'finish'**

You should have something like the image to the left. However, to **import the file into word you need to press 'ctrl' and 'c'** at the same time on the selected map and **then open word and press 'ctrl' and 'v '** at the same time**.**

Once you have set the worksheet up you can display the data in a variety of ways. My advice would be to experiment. When I have used it with my students, they have real problems setting the sheets up initially, but once it works they have no problems with the software as it is quite intuitive.

It is worth noting that in step 4, I told you to select 'point', but you can choose flow lines or area. I have done this to choropleth shade the school site for a Year 7 Litter Survey and a Year 8 Environment Survey and in many ways these images are more impressive.

For more confident ICT users who do not have access to GIS

The ability to plot data on to a map is a higher level skill and one that can be achieved by all users with Microsoft Word and the internet, though of course this method may be more time consuming then using a specialised GIS package like Aegis 3.

Follow the following steps to display results on a map in Word:

Step 1: Find a map of the study area
I have Memory Map software and used this to obtain the map, but equally I could have used an internet map site (e.g. MultiMap) to obtain it.

Step 2: Plot the sample points onto the map

- Use **autoshapes ('view' 'toolbars' 'drawing'** in the menu at the top of the page). **Draw a small circle and place it on the map** where it needs to go.
- **Right click on it and select 'format autoshape'**
- **Click colour and lines tab**
- **Change the 'fill' colour to black and then press 'ok'**
- To save time, **right click on the finished black sample sites dots and select 'copy'**
- **Click back on the map** and press **'ctrl' and 'v' at same time repeatedly** until you have **enough dots** for the sample sites. Move the dots to the correct position on the map.

Step 3: Create the circles (or other shape if you wish) for the results

Create the coloured circles for each site in the same way that the black sample dots were completed. However, this time you will need to make the shape semi-transparent. **Select the colour for the circle and then select 50% for the transparency**; the map will still be visible behind the shape.
Drag the shapes over the black sample dots into the correct position

Step 4: Changing the size of the shape to represent the data collected

- **Right click** on the required circle
- **Click the 'size' tab**
- **Type in the height** and **width** of the circle in cm that you want it to be. You would have to work out a suitable scale.

Step 5: Add North arrow, scale and a key for the colours