

Creating Population Pyramids Using Microsoft Excel

Population pyramids are one of the most basic illustrative tools used in demography to show the age structure of a population. This document will show you how to make your own population pyramids in Excel 2007.

Getting data

The U.S. Census Bureau's website as well as its American Factfinder page is very useful for finding age-sex data at the national, state and county levels. The American Factfinder webpage can be found here: http://factfinder.census.gov/home/saff/main.html?_lang=en

Preparing the data

After locating the data in the appropriate or desired age groups for both sexes, create a table with the age groups in the first column and with either the number or the percentage of males and females in age-group in the second and third columns.

Typically the data for the males are placed in the column to the left of females. What is important is that these data columns are directly next to each other.

	F	G	H
AGE	Male	Female	
Under 5 years		6.8	6.2
5 to 9 years		6.8	6.2
10 to 14 years		6.9	6.3
15 to 19 years		7.4	6.8
20 to 24 years		6.9	6.4
25 to 29 years		6.8	6.5
30 to 34 years		6.1	5.8
35 to 39 years		6.7	6.5
40 to 44 years		7.1	6.9
45 to 49 years		7.8	7.6
50 to 54 years		7.6	7.5
55 to 59 years		6.4	6.4
60 to 64 years		5.1	5.3
65 to 69 years		3.8	4.2
70 to 74 years		2.8	3.3
75 to 79 years		2.2	3.0
80 to 84 years		1.6	2.6
85 years and over		1.2	2.6

	F	G	H	I	J
AGE		Male	Female		
Under 5 years		6.8	6.2	=G3*-1	
5 to 9 years		6.8	6.2		
10 to 14 years		6.9	6.3		
15 to 19 years		7.4	6.8		
20 to 24 years		6.9	6.4		
25 to 29 years		6.8	6.5		
30 to 34 years		6.1	5.8		
35 to 39 years		6.7	6.5		
40 to 44 years		7.1	6.9		
45 to 49 years		7.8	7.6		
50 to 54 years		7.6	7.5		
55 to 59 years		6.4	6.4		

By convention in population pyramids males are on the left-hand side of the pyramid. In order for this to occur, the male values must be negative.

This can be done in one of two ways: either manually changing each value by placing a negative sign in front of each value or by using the formula option in Excel to multiply each value by negative one. Once you apply this formula to the first cell you can drag and copy it to the other cells.

Then replace the original values with the newly computed ones. To ensure that the proper values are copied use the paste special option and then click **values only**.

	F	G	H
AGE		Male	Female
Under 5 years		-6.8	6.2
5 to 9 years		-6.8	6.2
10 to 14 years		-6.9	6.3
15 to 19 years		-7.4	6.8
20 to 24 years		-6.9	6.4
25 to 29 years		-6.8	6.5
30 to 34 years		-6.1	5.8
35 to 39 years		-6.7	6.5
40 to 44 years		-7.1	6.9
45 to 49 years		-7.8	7.6
50 to 54 years		-7.6	7.5
55 to 59 years		-6.4	6.4
60 to 64 years		-5.1	5.3
65 to 69 years		-3.8	4.2
70 to 74 years		-2.8	3.3
75 to 79 years		-2.2	3.0
80 to 84 years		-1.6	2.6
85 years and over		-1.2	2.6

Creating the Pyramid

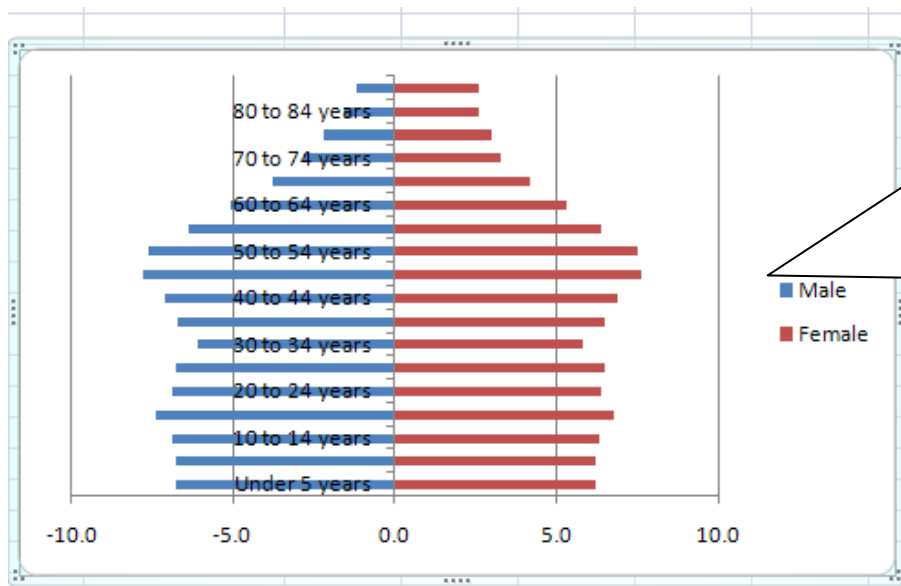
1. Now that the table is set up properly select the table.

2. Select the Insert Tab

3. Select Bar

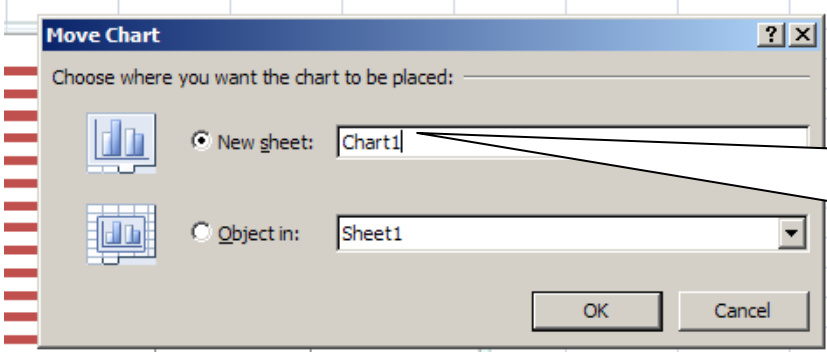
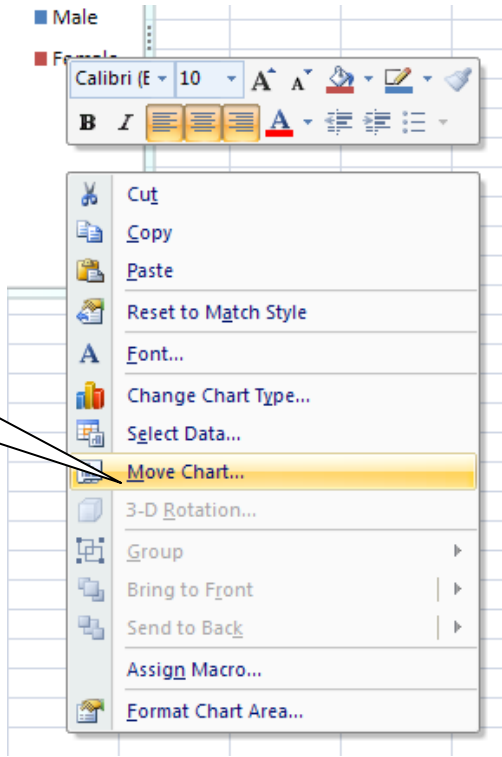
4. Select Stacked

AGE	Male	Female
Under 5 years	-6.8	6.2
5 to 9 years	-6.8	6.2
10 to 14 years	-6.9	6.3



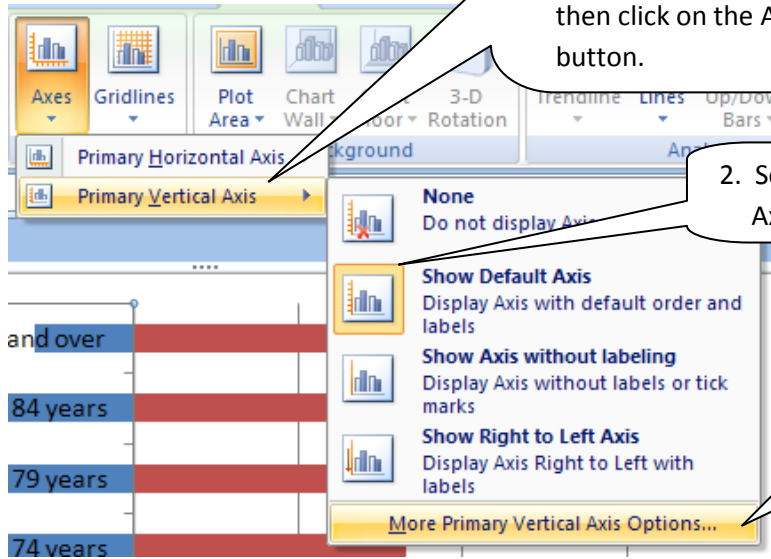
The chart by default will be created on the page with the data. The chart can be edited on this page or moved to a separate sheet.

To move the chart to its own tab, right click and select move chart from the drop down menu.



This opens a dialogue box that allows the user to name the new chart sheet.

Formatting the Pyramid

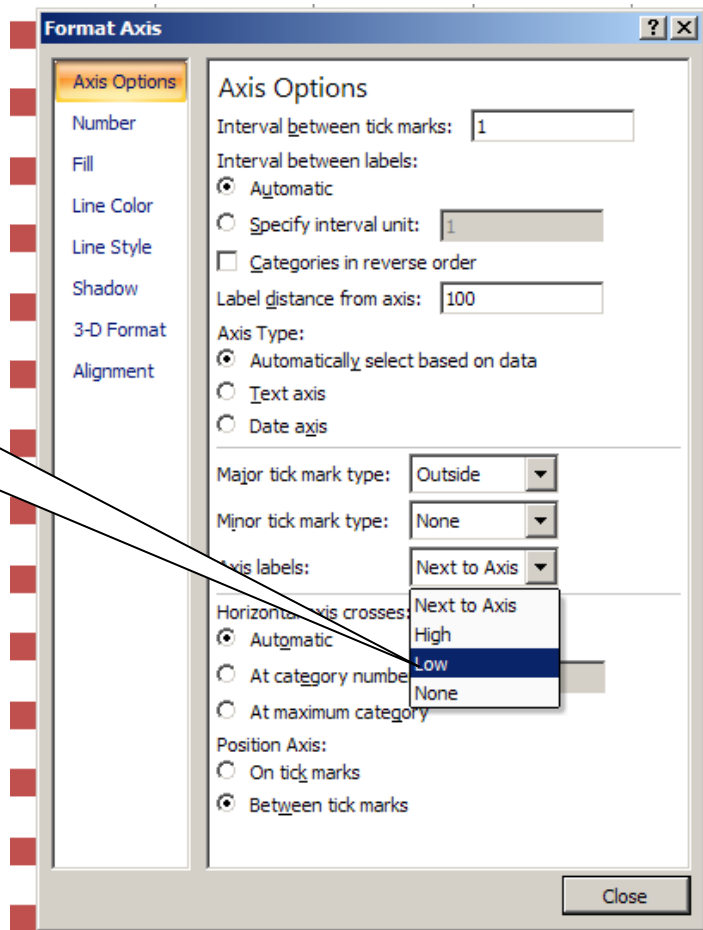


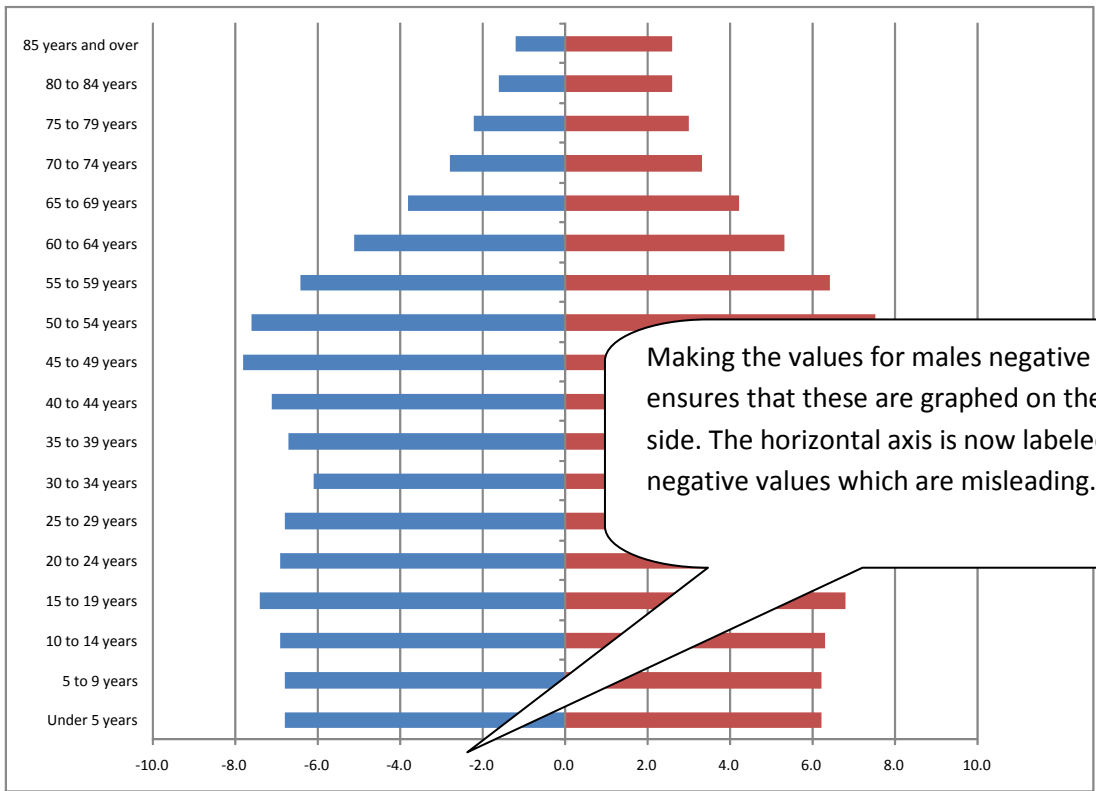
1. Start by moving the vertical axis to the left. Under Chart Tools select the Layout Tab then click on the Axes button.

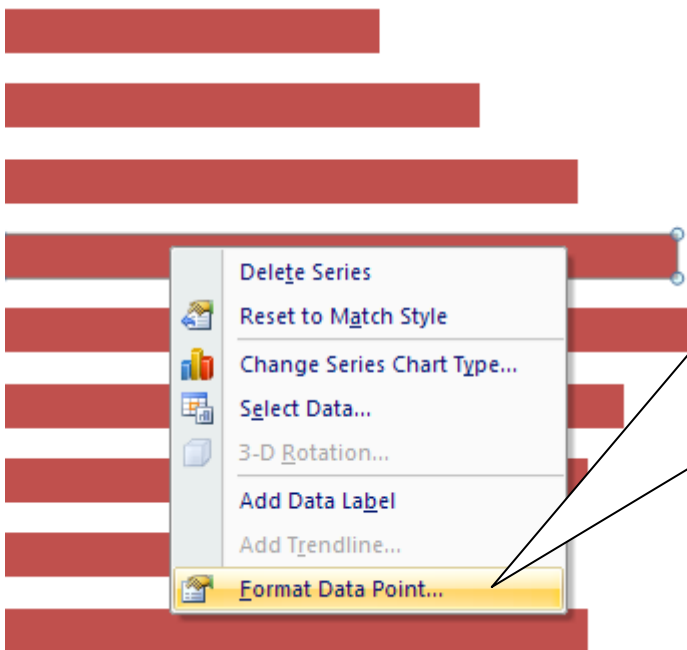
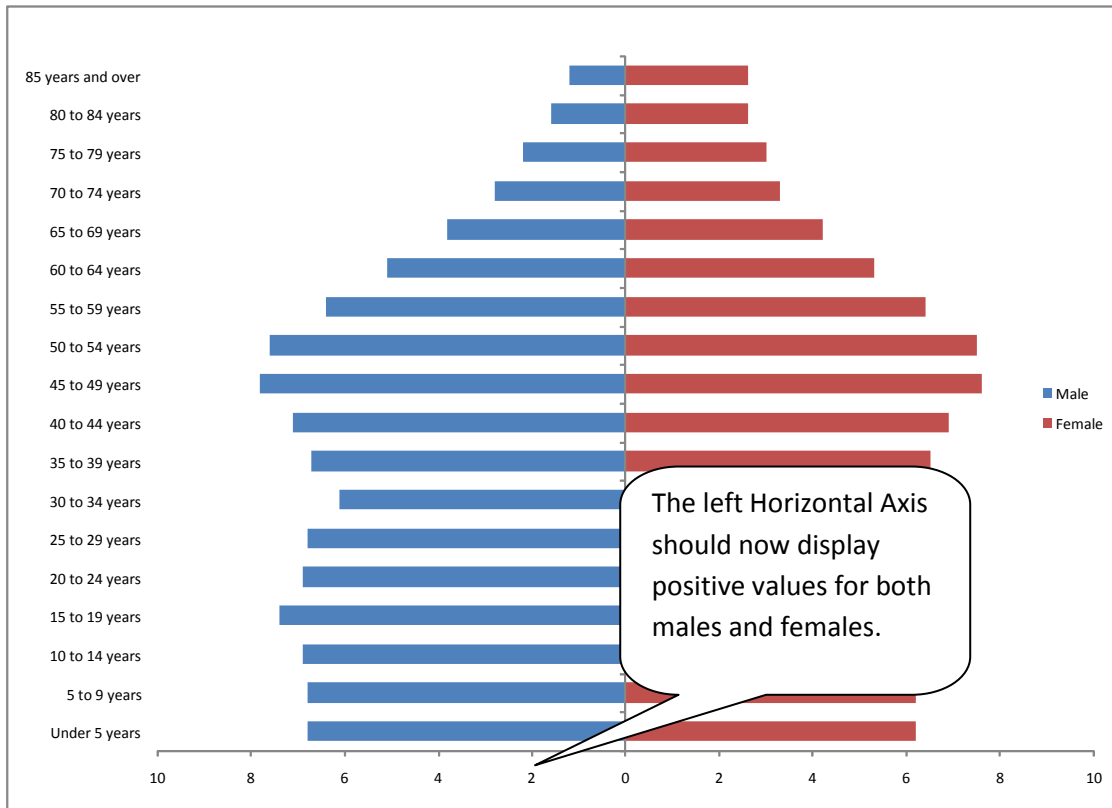
2. Select Primary Vertical Axis.

3. Select More Primary Vertical Axis Options.

Change the Axis Labels option from Next to Axis to Axis to Low. Click Close



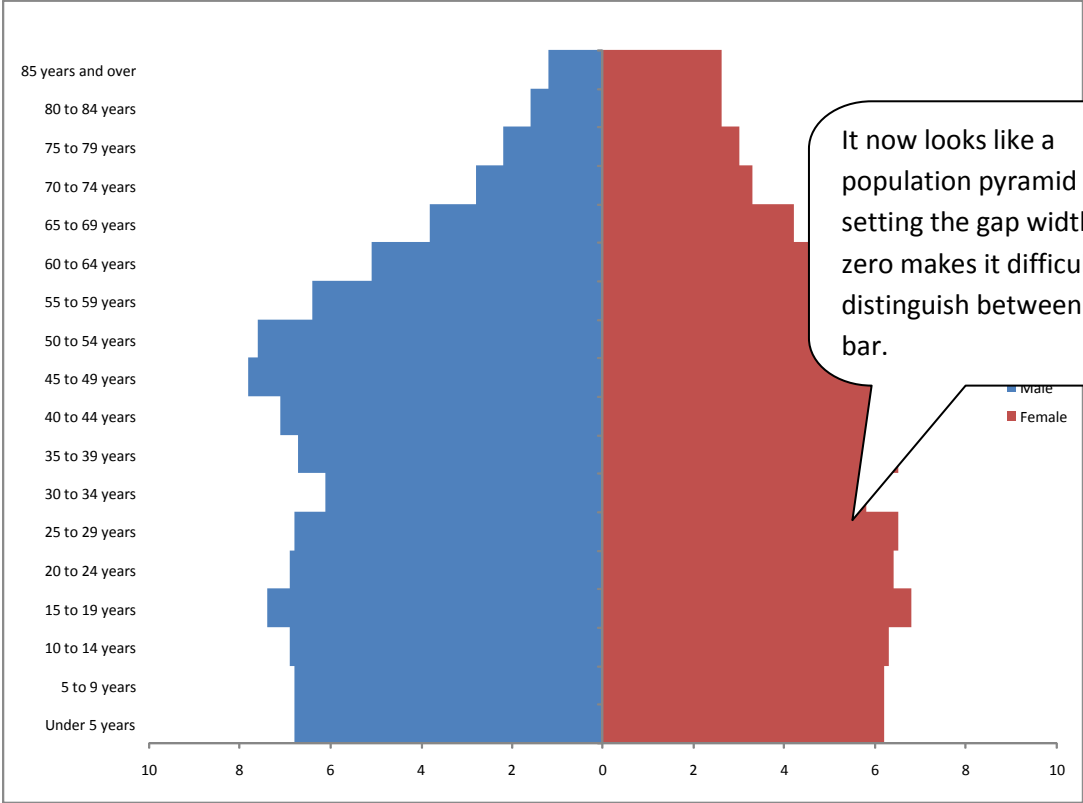
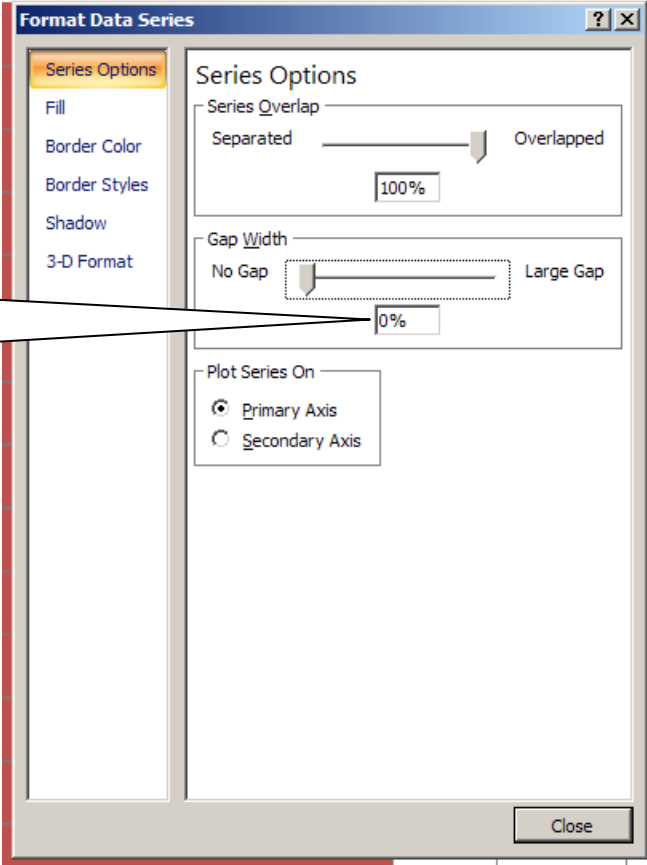




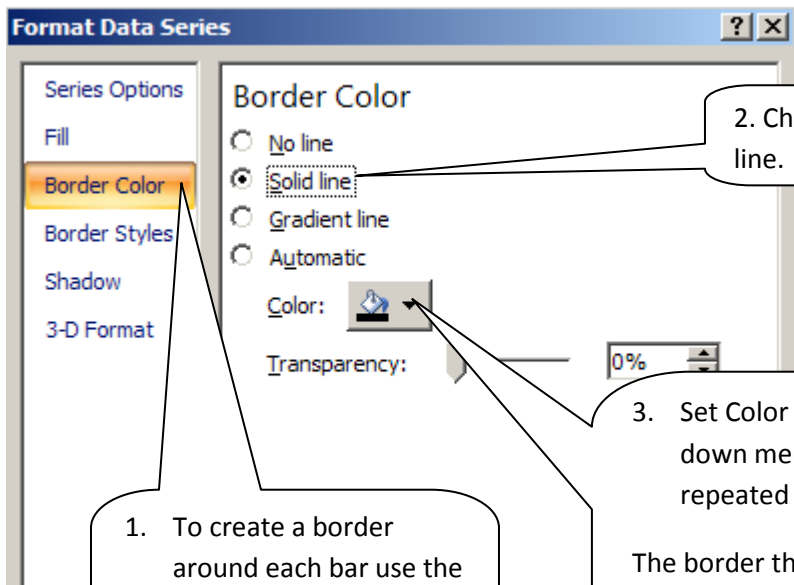
The next step is to reduce the gap between each bar. This is done by right-clicking on the (chart) data series (either male or female) i.e. clicking on the bars.

The series selected is irrelevant because once the gap is reduced for one series it will automatically be done for the other.

This produces the Format Data Series dialogue box. Change the gap width to zero. Click Close.



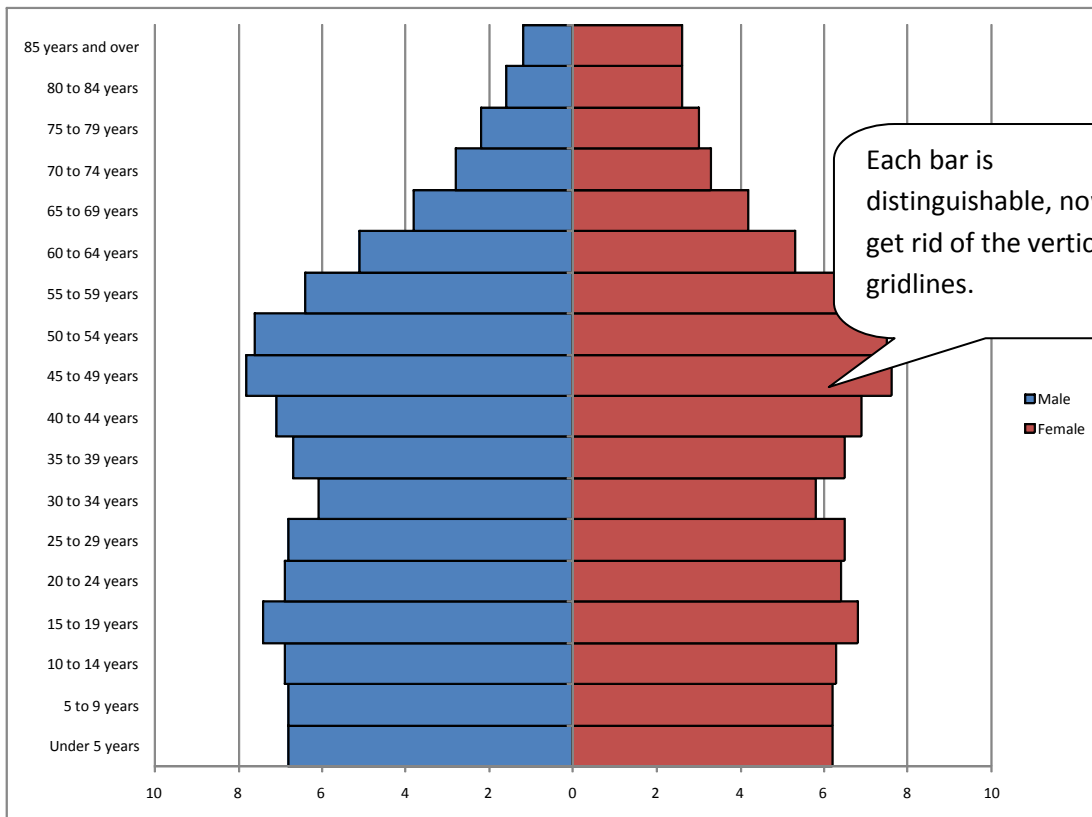
It now looks like a population pyramid but setting the gap width to zero makes it difficult to distinguish between each bar.



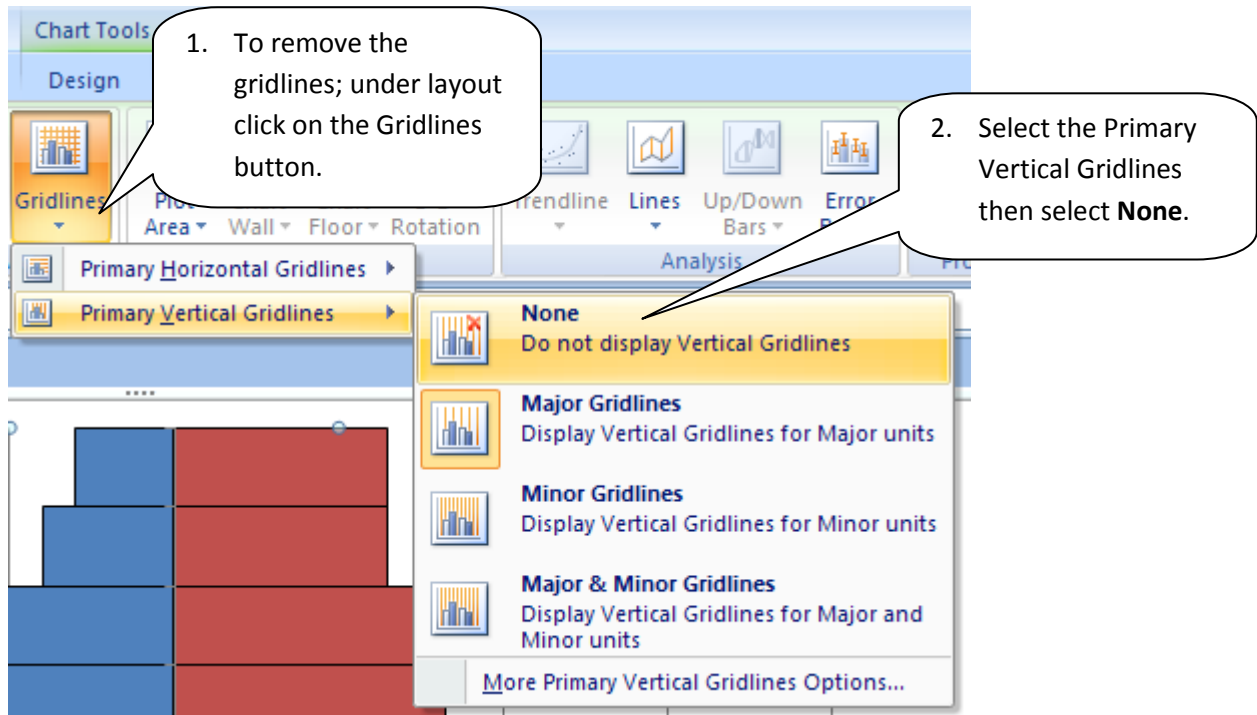
1. To create a border around each bar use the format data series select the border color option.

3. Set Color to black using the drop down menu. This procedure must be repeated for the other data series.

The border thickness can be varied by using the border styles option and increasing the width.

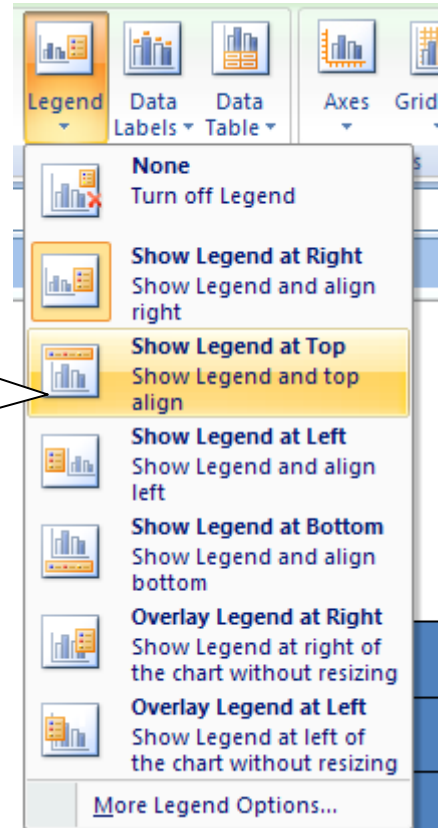


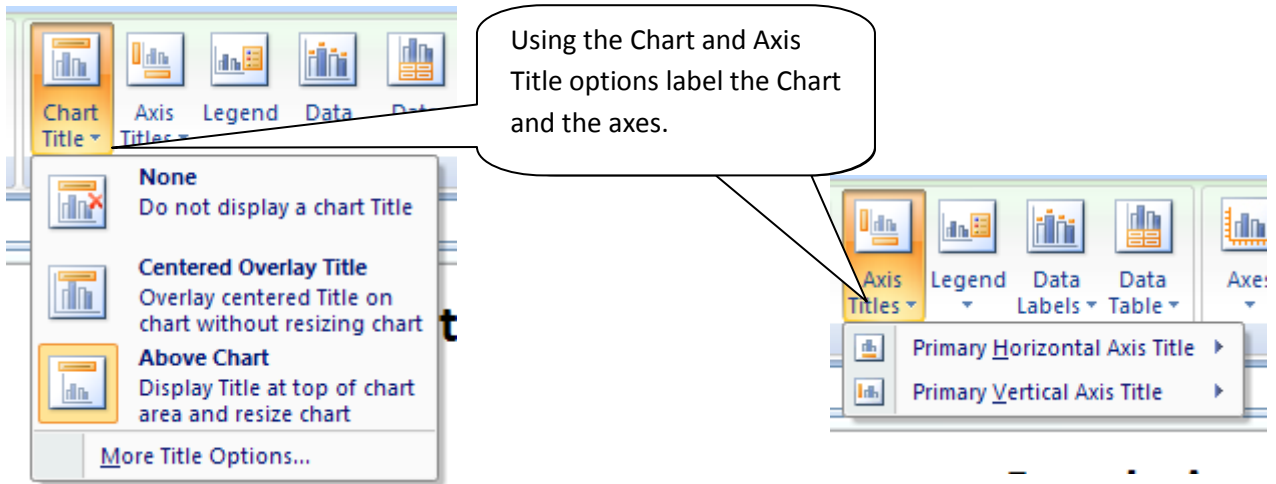
Each bar is distinguishable, now to get rid of the vertical gridlines.



Usually the legend for pyramids is placed at the top of the chart. To do this select **Legend** then click on **Show Legend at Top**.

The text box containing the legend can be dragged (as well as re-sized) left or right so that the legend lines up with the data series.





The Finished Product

