

## How to plot population pyramids in Excel

Population pyramids are back-to-back horizontal histograms.

First need a frequency table with the population split into age group and gender.

These frequencies are then expressed as percentages of the total population by gender.

If percentages are not calculated beforehand use EXCEL to do this. The formulae for Excel are given below.

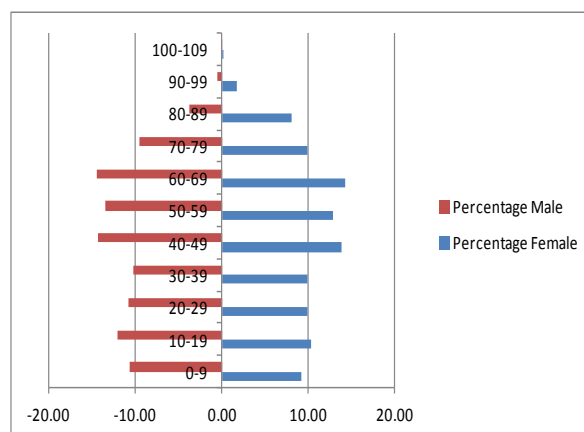
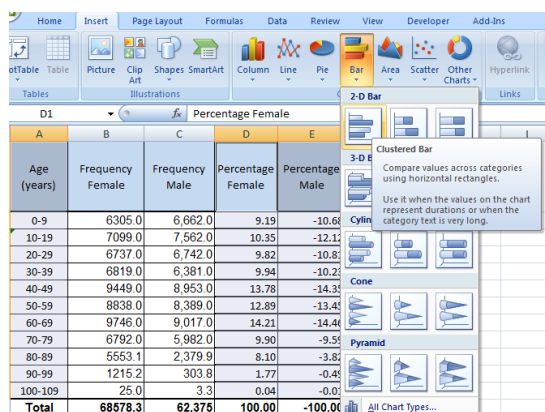
	A	B	C	D	E
	Age (years)	Frequency Female	Frequency Male	Percentage Female	Percentage Male
1					
2	0-9	6305	6662	=B2/\$B\$13*100	=-C2/\$C\$13*100
3	10-19	7099	7562	=B3/\$B\$13*100	=-C3/\$C\$13*100
4	20-29	6737	6742	=B4/\$B\$13*100	=-C4/\$C\$13*100
5	30-39	6819	6381	=B5/\$B\$13*100	=-C5/\$C\$13*100
6	40-49	9449	8953	=B6/\$B\$13*100	=-C6/\$C\$13*100
7	50-59	8838	8389	=B7/\$B\$13*100	=-C7/\$C\$13*100
8	60-69	9746	9017	=B8/\$B\$13*100	=-C8/\$C\$13*100
9	70-79	6792	5982	=B9/\$B\$13*100	=-C9/\$C\$13*100
10	80-89	5553.1	2379.9	=B10/\$B\$13*100	=-C10/\$C\$13*100
11	90-99	1215.2	303.8	=B11/\$B\$13*100	=-C11/\$C\$13*100
12	100-109	25	3.3	=B12/\$B\$13*100	=-C12/\$C\$13*100
13	<b>Total</b>	<b>=SUM(B2:B12)</b>	<b>=SUM(C2:C12)</b>	<b>=SUM(D2:D12)</b>	<b>=SUM(E2:E12)</b>

	A	B	C	D	E
	Age (years)	Frequency Female	Frequency Male	Percentage Female	Percentage Male
1					
2	0-9	6305.0	6,662.0	9.19	-10.68
3	10-19	7099.0	7,562.0	10.35	-12.12
4	20-29	6737.0	6,742.0	9.82	-10.81
5	30-39	6819.0	6,381.0	9.94	-10.23
6	40-49	9449.0	8,953.0	13.78	-14.35
7	50-59	8838.0	8,389.0	12.89	-13.45
8	60-69	9746.0	9,017.0	14.21	-14.46
9	70-79	6792.0	5,982.0	9.90	-9.59
10	80-89	5553.1	2,379.9	8.10	-3.82
11	90-99	1215.2	303.8	1.77	-0.49
12	100-109	25.0	3.3	0.04	-0.01
13	<b>Total</b>	<b>68578.3</b>	<b>62,375</b>	<b>100.00</b>	<b>-100.00</b>

The percentages for males are negative so when the graph is plotted the columns for males will be plotted on the left hand side of zero on the horizontal axis.

Add 2D clustered bar graph.

Select **A1:A12** hold down the **Ctrl** key select **D1:E12** select the **Insert** tab then **Bar** and **Clustered Bar**



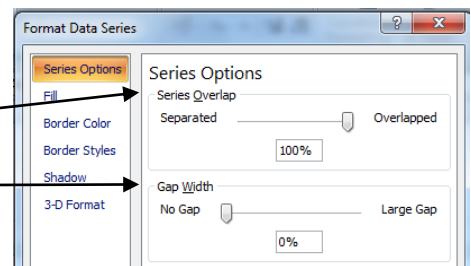
Close the gaps between bars and add borders.

Right click on a bar

Select **Format Data Series**

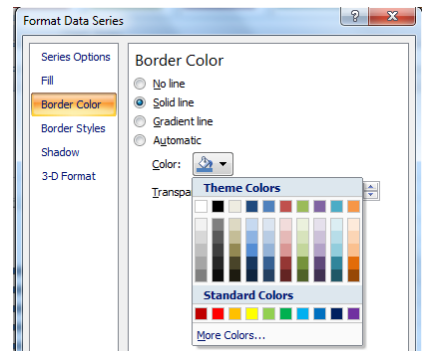
Drag slider for **Series Overlap** to **100 %**

Drag slider for **Gap Width** to **0 %**



Select **Border Color** then **Solid line** select the **Color**

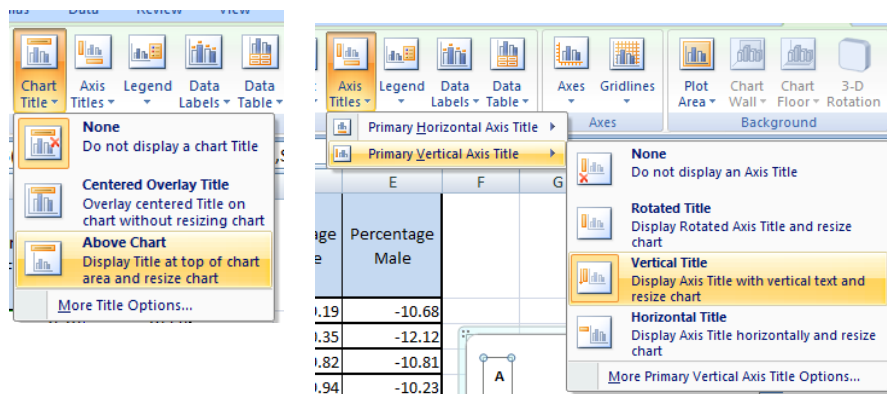
Click on the columns on the other side and add a border in the same way and **Close**



Add a title and vertical axis label.

Click on the graph select the **Layout** tab then **Chart Title** then **Above Chart** type **Population Pyramid for Torbay 2011** and **Enter**

Select **Axis Titles** then **Primary Vertical Axis Title** then **Horizontal Title** type **Age** and **Enter** then drag the title to the top of the vertical axis

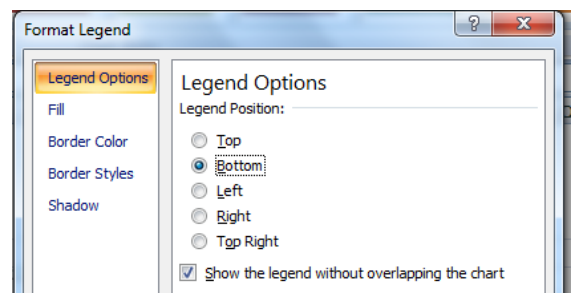


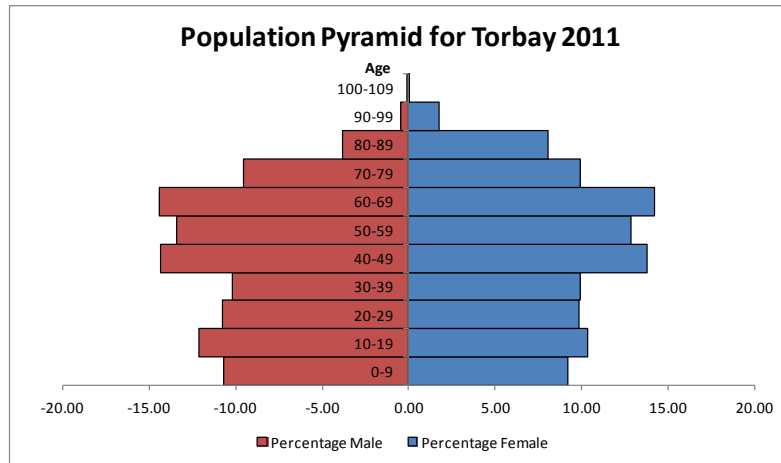
Delete grid lines.

Right click on a grid line and **Delete**

Move legend.

Right click on the legend select **Format Legend** then **Bottom** and **Close**





To change to positive the negative numbers for male on the horizontal axis.

Right click on the x-axis select **Format Axis** then **Number** and click on the **red positive option** in **Negative Numbers**

In **Format Code** replace the word **Red** with **Black** in the square brackets and **Add** then **Close**

