

Tutorials for High School Mathematics

Slides from Graphing Data (Tutorial 19)

Graphing Using Excel

Bonnie Hutchins

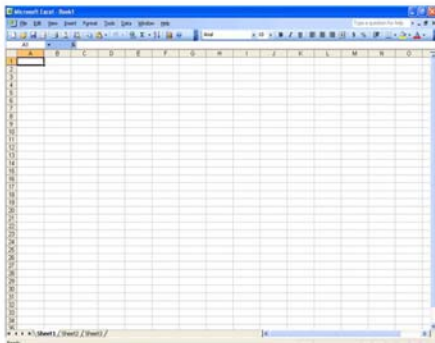
This handout contains selected slides to use when reviewing this tutorial topic with or without the video. To access all slides, open thumbnail link on the tutorial interface.

Objectives

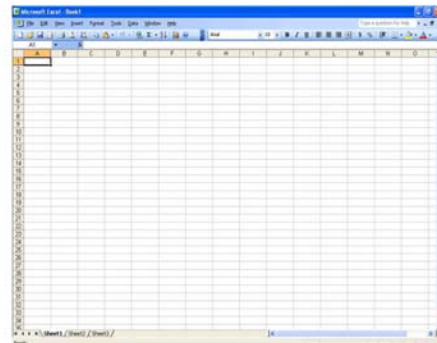
- To enter data into Excel spreadsheet
- To select appropriate chart (graph) to fit the data
- To change chart design
- To add error bars to a graph design
(Error bars are used to show variability in the measures which are plotted in a chart)

This tutorial uses Excel 2003 to show the power of spreadsheets when creating graphs

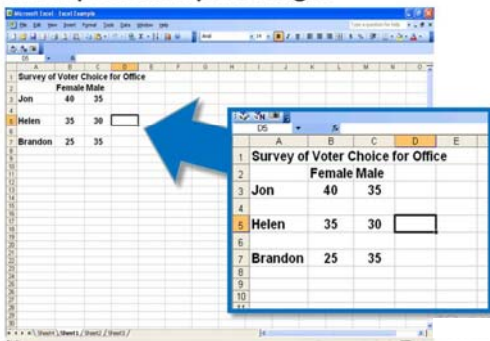
Follow these steps to create graphs:



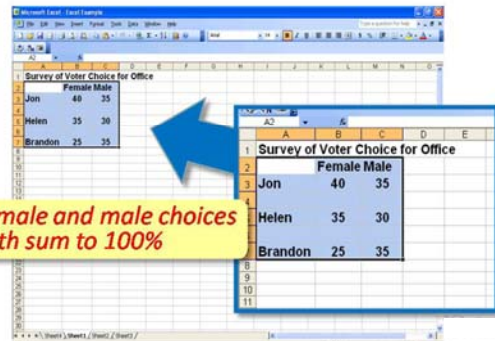
- After data is collected, type the information into an Excel spreadsheet



- Spreadsheet shows survey results about voter choice among 3 candidates
- Data are expressed as percentages



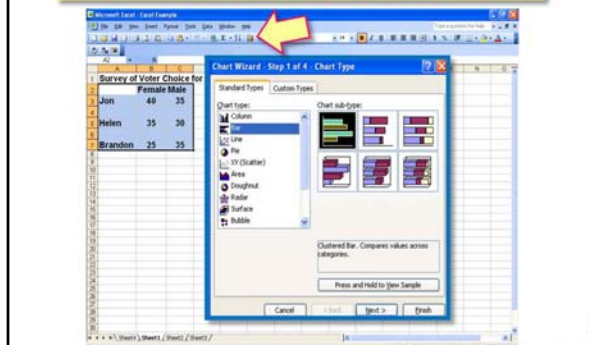
- Select (highlight) the cells that contain the data to be displayed in the graph or chart



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Choosing a Chart Type in Excel

Click on the chart wizard icon on the toolbar

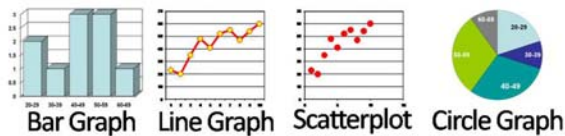


Choosing a Graph Design

- Graphs can illustrate the **visual relationship between sets of data**
- Graph choice should be based on **how the data is related** and **what needs to be displayed**
- Spreadsheets allow easy movement between chart designs to determine the chart form that makes the data most meaningful

Choosing a Graph Design

A graph design selection depends on the data to be displayed



Choosing a Graph Design

A graph design selection depends on the data to be displayed

For two (or more) variable display:

- Bar graph, with a legend
- Line graph, when one of the variables is time (seconds, minutes, days, years, etc.), with a legend
- Scatterplot, when making a comparison of increasing/decreasing data and making predictions of future behavior of the data

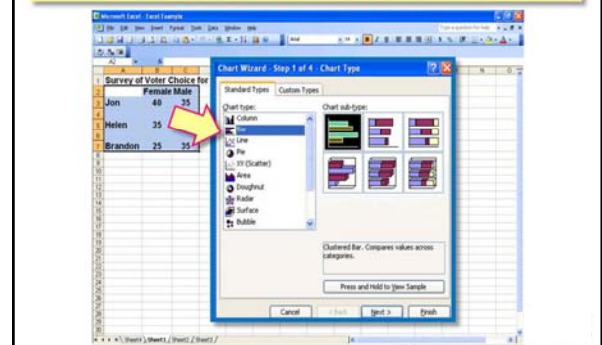
Choosing a Graph Design

A graph design selection depends on the data to be displayed

- **Area or 3-dimensional graphs** can be used to make a more dramatic display of the data or to show the interaction of data

Choosing a Chart Type in Excel

Choose the appropriate chart from the chart type list



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- Type in a title for the x-axis

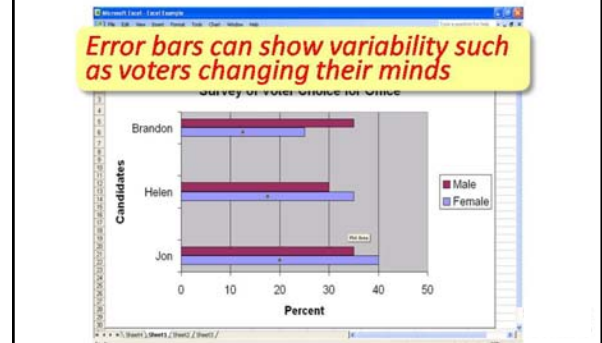
Note that the x and y axes are reversed because this is a horizontal bar graph

- Type in a title for the y-axis

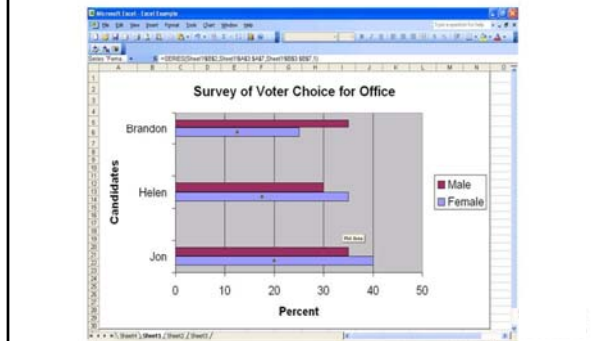
- Hit **Next** and make selection of where to save graph

Adding Error Bars

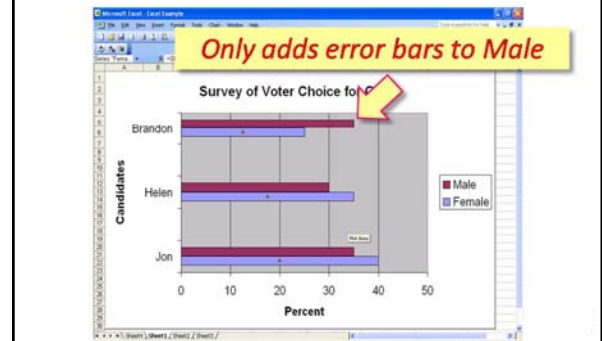
Error bars can show variability such as voters changing their minds



- Click the bar or the series where error bars are to be added



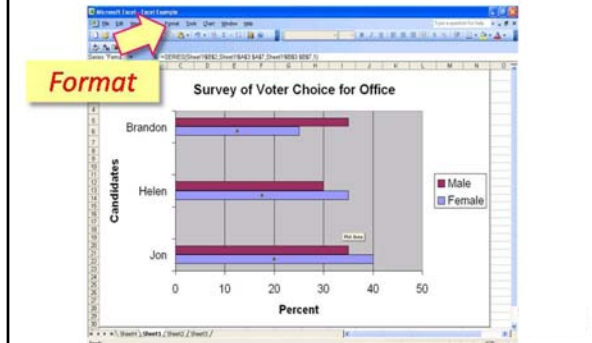
- Click the bar or the series where error bars are to be added



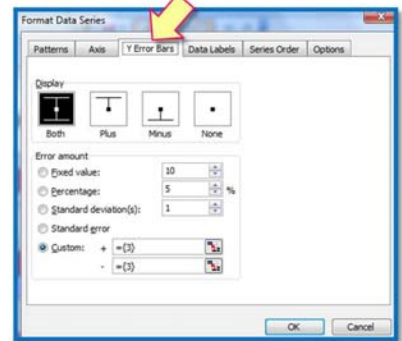
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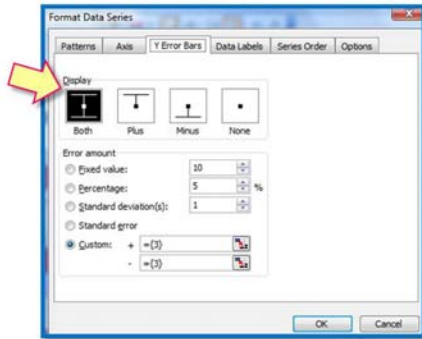
Click on **Format** and choose **Selected Data Series**



• Select the **Y Error Bars** tab

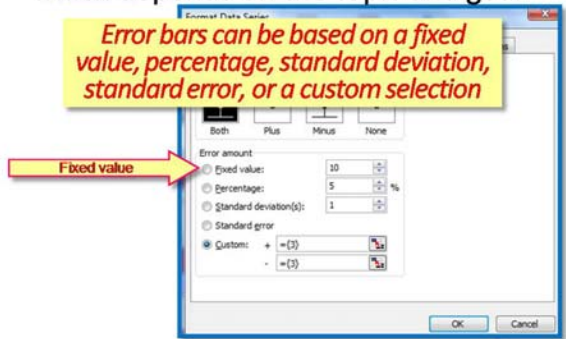


• Choose the desired **Display**



• Choose the desired **Error Amount** which depends on the topic and goal

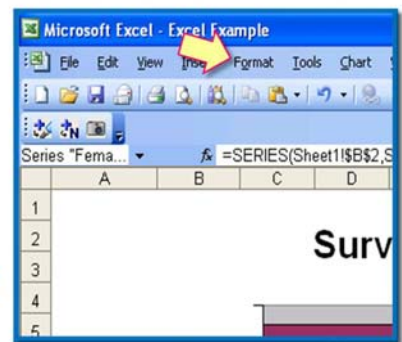
Error bars can be based on a fixed value, percentage, standard deviation, standard error, or a custom selection



• Click **OK**



Format and Selected Data Series
Y Error Bars
Display
Error Amount



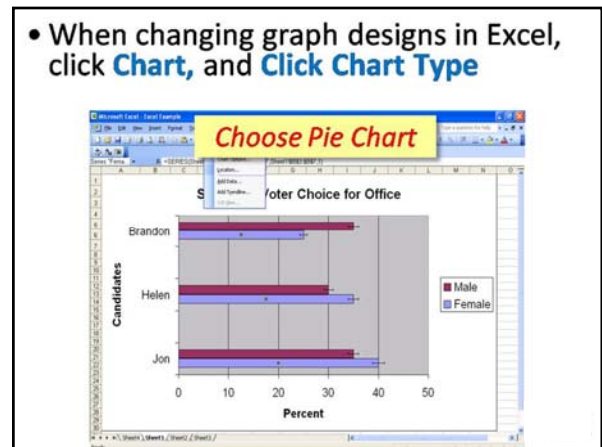
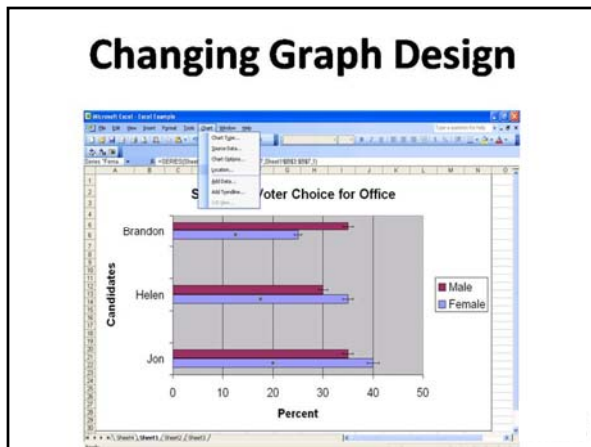
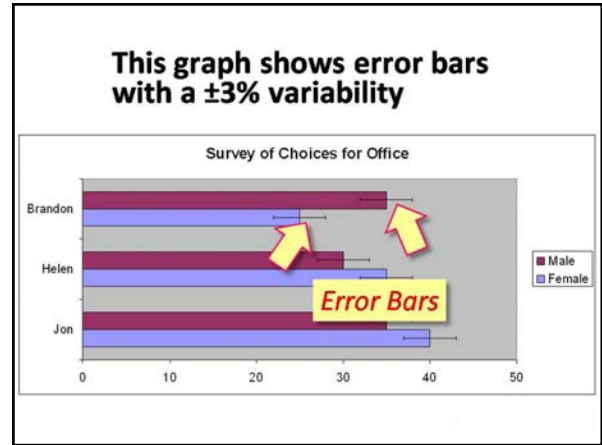
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Format and Selected Data Series
Y Error Bars
Display Error Amount

Format and Selected Data Series
Y Error Bars
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Format and Selected Data Series
Y Error Bars
Display Error Amount



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Changing Graph Design

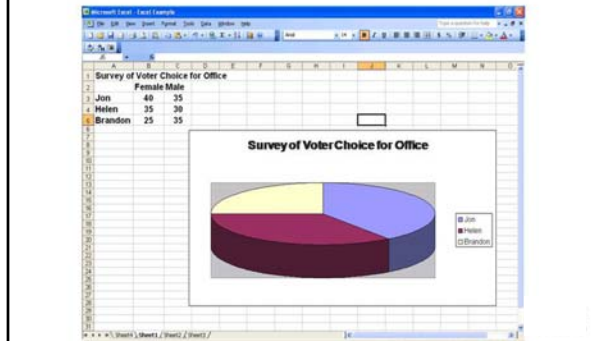
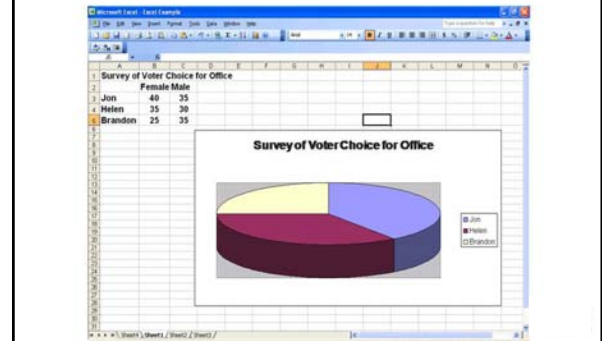
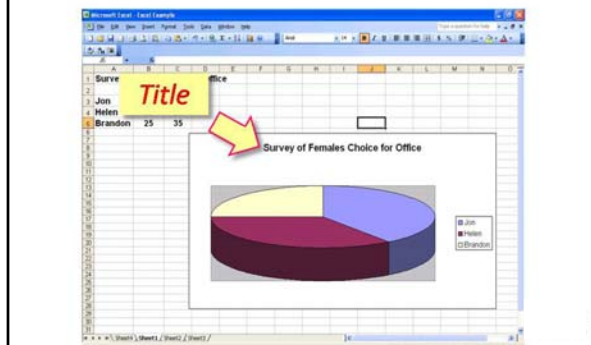


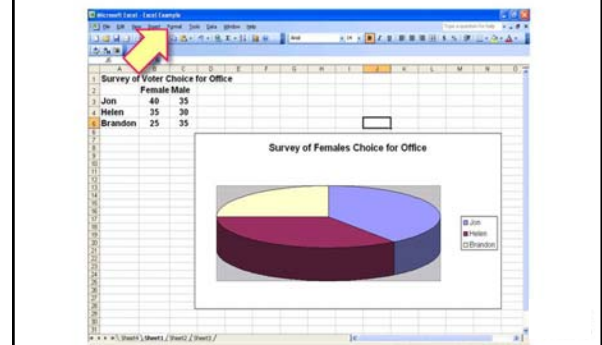
Chart only shows Female data



- Rename the chart if necessary



- Show any additional information by clicking on **Format** and **Select Data Series**



- Show any additional information by clicking on **Format** and **Select Data Series**

