

Project-Based Classroom Research Using Excel & PowerPoint

ESL Beginning High students and above practice their English skills, gain computer skills, and obtain CASAS competencies by doing actual research, collecting statistics, and using Microsoft Excel to create a simple graph. They present the research as a group (or individual) to their classmates accompanied by a PowerPoint presentation. As part of the presentation, they respond to questions from the audience about their research.

The Excel "Chart Wizard" allows students to create colorful and informative charts with a minimal amount of instruction. A few minutes of instruction is sufficient for even Beginning High students to create dynamic charts from actual research they've conducted in or out of class.

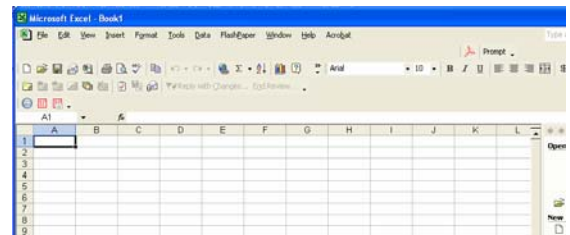
Step One: Students decide on question they'll be researching and get approval from the instructor (the project is neither too difficult nor too easy).

Step Two: Students collect data.

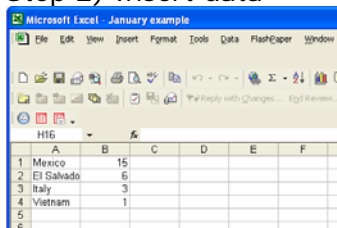
Step Three: Students enter data into Excel and create chart.

Step Four: Copy completed chart and insert it into a PowerPoint Presentation.

Step 1) Start Excel A worksheet titled "Book 1" will appear.

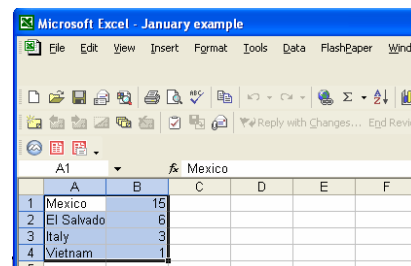


Step 2) Insert data



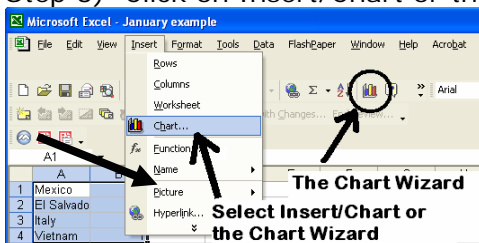
	A	B	C	D	E	F
1	Mexico	15				
2	El Salvador	6				
3	Italy	3				
4	Vietnam	1				
5						
6						

Step 3) Highlight the eight spaces you just filled in.



	A	B	C	D	E	F
1	Mexico	15				
2	El Salvador	6				
3	Italy	3				
4	Vietnam	1				
5						
6						

Step 3) Click on Insert/Chart or the Chart Icon to get the Chart Wizard.

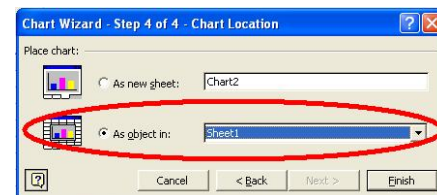
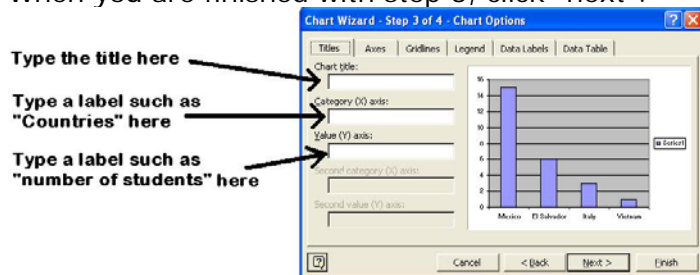


The chart wizard will appear. Choose the first column chart (already highlighted) by clicking "next."

Step 4) Click "next" again

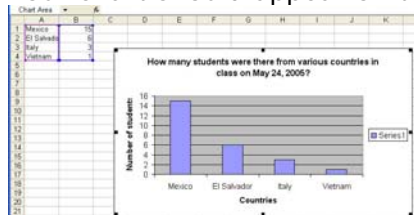
Step 5) Step 3 of the chart wizard lets you fill in the name of the chart and labels for the X and Y axis. In the space labeled "Chart Title" type an appropriate title. In the space labeled "Category (X) axis" type a label for that axis (e.g. "Country"). In the space labeled "Value (Y) axis" type a label for the other axis (e.g. "Number of Students").

When you are finished with step 3, click "next".



Step 6) Step 4 of the chart wizard lets you either insert the chart in the current worksheet or as a separate worksheet. Choose "As object in" and click "Finish".

Your chart should appear on the same Excel worksheet page that you've been working with.



Step 7) Make final adjustments to the graph before you save and print it. Click on the label "Series 1" at the right of the chart and delete it. You can change the color of any of the columns by clicking on it once (to select all of the columns) and then clicking on it again to select that individual column. Right click and choose "Format Data Point" to select a new color. You can experiment with changing other aspects of the chart by "right-clicking" on different areas to bring up formatting dialogue boxes. For example, if you right-click in the area of the Y axis, the "format axis" dialogue box will open. Among the options is being able to change the scale of the Y axis so that instead of a grid line and numbering by twos (2,4,6,8 etc.) gridlines will be designated by ones (1,2,3,4 etc.) or any other number you choose.

Step 8) You can print it at this point, or click on the graph to select the entire area, and choose "copy". You can then paste the graph into a PowerPoint slide.

After the graph has been saved, experiment with changing different components of the data and seeing how it affects the graph itself. If you click on space A1 for example and change the name of the country from Mexico to France, [click on space A1, then click in the formula bar (the space to the right of the equals sign above the letters ABCD labeling the columns) to type your changes] as soon as you click "Enter" or click on another space in the chart, you'll see the label in the chart change from "Mexico" to "France". This feature allows students to simply replace the labels and data in the model with their own information. The chart will reflect the changes. You can decide whether or not you want to have your students simply insert their data into a chart you've already created as a model or to create their own charts from the beginning.

For more complete instructions, samples of actual student-created PowerPoint presentations about their research, and to view videos of students presenting their PowerPoint presentations see <http://esl.adultinstruction.org/ResearchProject.htm>