

Ports from PowerPoint:

Microsoft PowerPoint is an application for developing “viewgraph” presentations. As such it has facilities for drawing diagrams. Word itself has some limited facilities for inserting shapes and doing drawing. In both cases, these drawings are “line art” in the sense that they are not rendered into pixels until displayed or printed, and thus maintain sharpness while being stretched or otherwise manipulated. The danger of doing this drawing in Word is that the elements may not stay together if they are independently placed on a page. If the document is edited and the drawing is bumped to the next page, some but not all elements of the drawing may move, breaking up the figure. This problem can be avoided by ensuring that all figure elements are “grouped” (using the “arrange” options). Using PowerPoint as an application for doing drawings is perhaps a better way to ensure that the drawing stays coherent. Also, Word does not have as many tools and options as PowerPoint does. So, we assume here that PowerPoint is essentially used as a drawing program to prepare figures to be pasted into Word.

When a new “PowerPoint Presentation” is created, it begins with one “slide” (illustration) that has two big text boxes, one for a title and the other for a subtitle and other contents. These are easily deleted, leaving a blank sheet on which one may add “shapes” (line art elements) and “pictures” (pixelated images from other files) and “text boxes”. The “shapes” available are many and varied, but include basic lines, boxes, and circles or arcs from which one can build up many different complex figure elements. Under the “View” menu, one can find under “Guide” the option to “Snap to Grid”, which is essential for drawing with any precision. The Ruler option under the View menu is also very helpful. Unfortunately, PowerPoint does not provide an option to show the grid, but choosing a background (under Format menu, slide background) and a pattern fill of “large grid” (with a color change to something like light grey) does give a helpful background for drawing, even if not exactly aligned with the grid. By using the basic shapes, using “group” and “align” and tools to change colors, one can build up elements of a diagram or schematic such as the “spring” representation seen in Figure C-16 below.



Figure C-16 A “spring” from PowerPoint

This particular component was made up of paired arcs, grouped, then duplicated three times, then aligned horizontally and grouped again with lines representing the connecting terminals. Eventually, elements can be combined to construct a figure that can be ported to Word.

Figure C-17 shows such a figure, still in Powerpoint, with the background pattern visible that helped with aligning elements. (This is from a “screen shot”) When completed and pasted into Word as a Microsoft Office Graphic Object, be sure to group all the figure elements together before copying, or they will very likely come out scattered across the page. As a graphic object, as you change the size and shape of the figure in Word, the text sizes and line widths remain the same rather than changing in proportion to size. (See Figure C-18.) So, in PowerPoint it is best to make the figure size

comparable to what you will want it to be in Word. In this case, the line widths (4 points in PowerPoint) are too thick and the text boxes, with 18 point lettering, when resized are too small to show the text. It is possible to make some adjustments in PowerPoint, but the adjusted grouped figure, even if it looks good in PowerPoint, may not paste correctly into Word as seen in Figures C-19 and C-20 below.

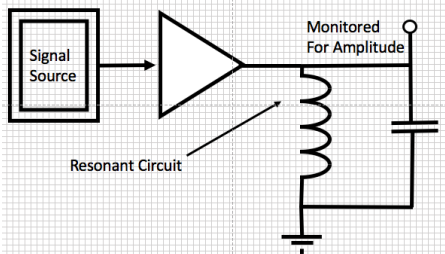
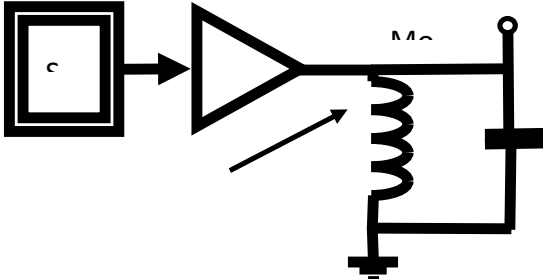


Figure C-17 Screen shot of figure as drawn, seen in PowerPoint



(Note: text boxes are too small to show the text!)

Figure C-18 Same figure pasted as Microsoft Office Graphic Object then resized smaller

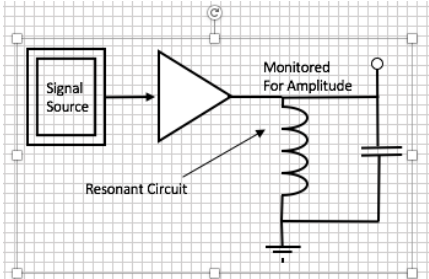


Figure C-19 PowerPoint figure with smaller widths, type size, resized while grouped

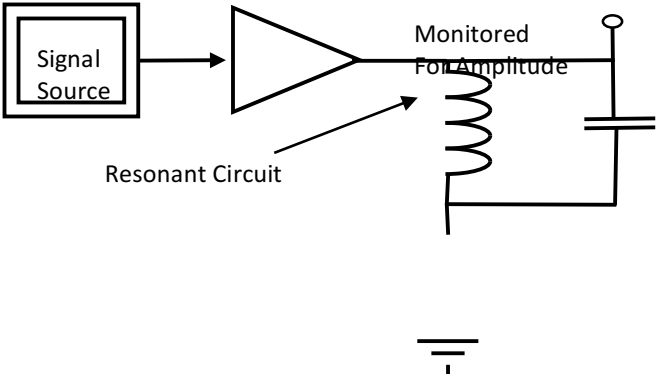


Figure C-20 How PowerPoint figure shown above comes out pasted into Word.

PowerPoint is not an adequate substitute for a real drawing program like Adobe Illustrator or Visio, but can be useful for doing relatively simple figures like block diagrams and schematics. Graphics brought in from PowerPoint as Microsoft Office Graphic Objects are genuine line art and retain their sharpness. However, there are pitfalls. It is best to construct the diagram in PowerPoint at the same size you will want it to appear in Word, and you need to be sure to “Group” the figure into one object prior to copying and pasting. With those precautions, PowerPoint can be a useful tool for constructing figures for use in laboratory reports.

Ports from Paint:

Microsoft Paint is a simple “accessory” application that can be useful for modifying or even creating figures. The images modified or constructed are pixelated, and are limited to the resolution that is available when created. While it is possible to “invert” an image (take a negative of it), more sophisticated tools for adjusting color tint, saturation, sharpness and contrast are absent. Fortunately, tools to do many of those things are available in Word. So, an image can be taken, say from a photograph or an application screen shot, annotated in Paint, further manipulated in Word, and give a satisfactory figure. Pasting in such figures is straightforward.