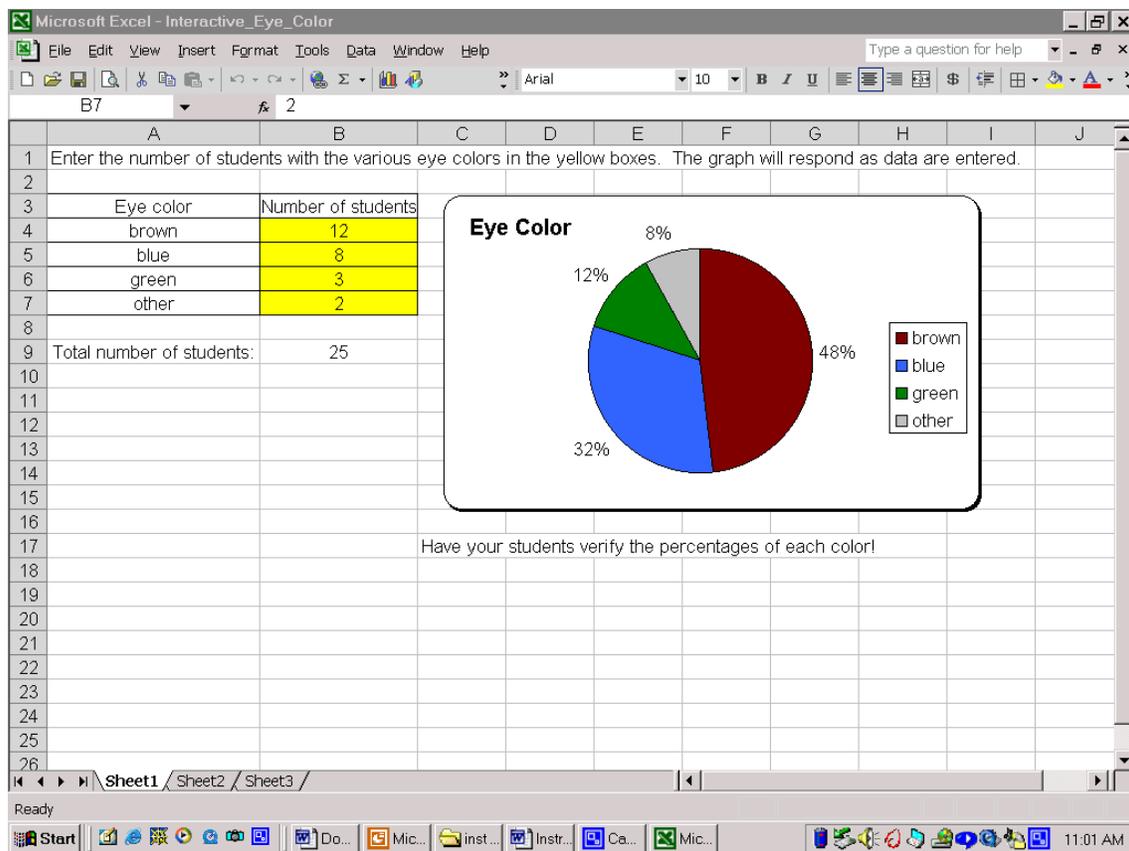


After selecting a textbox and placing it, you can change the line and background, if you right click on it and select "Format Textbox..." Color can be easily added too. This simple task has generated an interactive environment and students can print their results. Think about matching colors and their names or shapes (see "AutoShapes" and then select "Basic Shapes") and names. For more examples, go to <http://ferl.becta.org.uk> and search "drag and drop" on this site. They have numerous downloadable examples.

Excel offers a powerful way of creating interactive and dynamic graphs. You set up a spreadsheet with data and a graph in the format you want. Excel will make bar graphs and scatter graphs. Then you remove the data (shaded cells, B4-B7, would



be blank and no pie chart would be visible) and as students add their data, the chart evolves. Interactive Excel spreadsheets, based on only computation with adjustable variables (no programming or macros), can be made to be simple or illustrate very complex simulations of models. As an example, see the Beer's Law simulator at <http://academic.pgcc.edu/~ssinex/BLS.xls>. For the basics for the beginner with no Excel experience in handling, graphing, and analyzing data, see

http://academic.pgcc.edu/psc/Excel_booklet.pdf. For more examples, go to <http://ferl.becta.org.uk> and search "interactive Excel" on this site. They have numerous downloadable examples, including some with macros.

PowerPoint is presentation software and considered to be a great teacher-centered tool; however, it has student-centered capabilities. It is the poor teacher's multimedia package: animated gifs play in PowerPoint just like in web browsers; you can include videos or Flash animations; and you can cartoon your own action (a flip book using technology)! So don't learn PowerPoint to write deadly lectures; be animated and dynamic! Drive your presentation with questions and make your students analyze and interpret. Below is a PowerPoint slide saved as a gif (an option under "Save as..." and then "Save as type:" in PowerPoint). The last box, E3, should be blank for the prediction, and then when you press the "See contents" button the image will appear.

E E2 E3

solid

See contents

Predict what will occur in box E3.

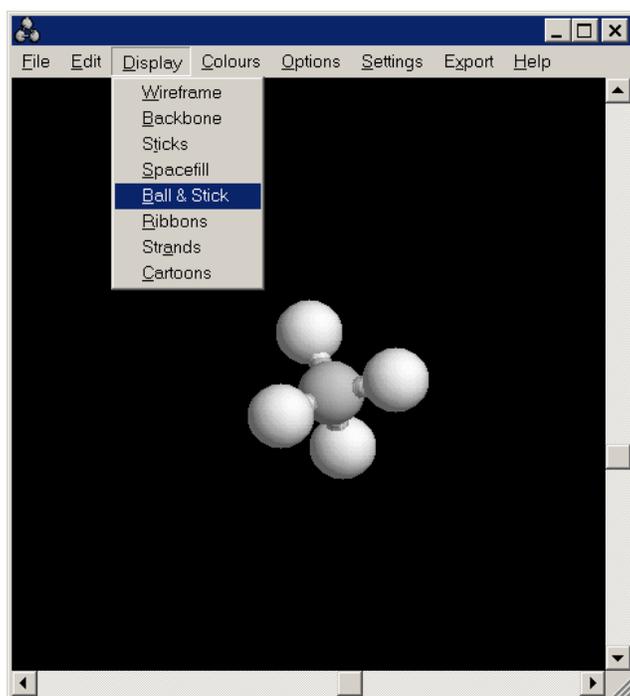
What is occurring?

Is this a chemical reaction? Explain.

You can even produce interactive tutorials with action buttons (button above) for your students. For a guide to using PowerPoint 2002 to produce a dynamic presentation see http://academic.pgcc.edu/psc/DPP_guide.pdf. To view a

PowerPoint presentation of dynamic effects (cartoons, animations, and video clips) with instructions see http://academic.pgcc.edu/~ssinex/DPP/Discover_alive.ppt. In PowerPoint, students can label diagrams or images (inserted as Picture) by typing in textboxes as opposed to the drag-and-drop method. This is done in the slide editing mode. In Word you cannot easily label over an inserted image.

Now if you have to deal with chemical or molecular structures in biology and chemistry, then you need to know about Chime or Rasmol. Both are molecular structure rendering freeware. Rasmol is free-standing application that fits and will run on a 3.5 inch disk. A screen shot of the methane molecule in the Rasmol window is shown below. In both Rasmol and Chime you can manipulate the molecule, including the display mode, plus make measurements such as bond lengths and bond



angles. Where do you get the molecular structure files to use in either Chime or Rasmol? To get a zipped file of 400 common molecules, go to <http://c4.cabrillo.cc.ca.us> and get their molecular library. Otherwise, use a search engine such as Google (www.google.com) and type the molecule's name or simple formula followed by the word chime such as "CO₂ chime" or "aspirin chime." Beware that not all structures are correct!

Chime is a plug-in that will function in your browser (Internet Explorer or Netscape) and allows you to create web pages that display interactive molecular

images in applications such as FrontPage (which may be part of your Office suite). See the teacher-authored activities and links to Chime and Rasmol at <http://academic.pgcc.edu/~ssinex/MVCW>. Links to a student guide for using Chime, how to build Chime webpages in FrontPage, and a guide to Rasmol can be found at this site too.

For making movies of screen shots such as from planetarium software, Java applet animations, or animated step-by-step instructions for software, CamStudio (freeware from <http://www.rendersoftware.com/products/camstudio>) is a fast and easy tool. CamStudio saves files as avi, which are viewable in Windows Media Player or Quicktime. These video clips can be incorporated into PowerPoint also.

The Microsoft Office suite offers educators at all levels a number of starting possibilities to create a dynamic and interactive learning environment. And the package is already (most likely) on your desktop! All of the examples in this article plus more are available as the interactive files and hot links at:

<http://academic.pgcc.edu/~ssinex/ITTools>

The screen shots in this article were captured with SnagIt software and saved as gifs (software from <http://www.techsmith.com> for \$40). Although for no cost, pressing the ALT key plus Print Screen key on your computer captures (copies) the screen to the clipboard, then just paste into your document.

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