

## PowerPoint Presentations in Biology

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Thanks to the British Columbia Conference Technology Program, I was able to afford a lap top computer. I began using the Microsoft Office PowerPoint program to prepare visuals to accompany sermons on Sabbath using a video projector. The congregation really appreciated the visual along with the verbal presentation. It makes the sermons more interesting and they can remember more.

I then experimented with PowerPoint in biology by preparing a couple of units on reptiles and amphibians for my Biology 11 class using a TV. I asked the students for their evaluation and received overwhelming favor of this method. Why not? Instead of just lecturing about the differences between terrapins, tortoises and turtles, I could show them pictures of them too.

I made it my goal to prepare both Biology 11 and 12 notes on PowerPoint for the following year. It took about 150 hours for each course but now all I have to do is update them, or easily modify them if the curriculum changes. It would take far less time if you are not using video clips.



### **Equipment**

My equipment consists of a fairly recent model of computer with a couple of Gigs of memory and 160 Megs of Ram. It shouldn't require this much but I am usually running PowerPoint, scanner, internet and live stream Christian radio all at once. A lap top computer should have S Video out and/or an external monitor out. I use an S Video cable that changes S video to RCA so I can plug into the regular RCA "video in" on a TV set. The down side of this is that you can only view the computer from the computer monitor or the TV but not both at once. I also have a device that allows both. It hooks up to the external monitor outlet. It costs about \$150.00 but it chops off a little around the edges of each slide so you have to make sure you leave a margin around each slide. This is highly inconvenient. With a 32 inch TV, I can see clearly enough from across the room to manipulate the computer on the TV screen so I prefer the S video. In either case, the computer must be hooked up to the TV (on or off) before starting up the computer or the computer will not be able to communicate with the TV.

A lap top or a desk top computer can hook up to a regular video projector but they cost thousands of dollars and are not likely to be used in the average classroom.

The stereo pin jack on the computer can go to the RCA "sound in" on the TV set or as in my case to a separate stereo system with speakers. The sound is only necessary if you are using video clips

I am hooked up to cable internet. If you are going to get this done without spending hundreds and hundreds of hours, you need fast equipment and fast internet service

In addition, for video clips, I picked up a device called "Dazzle videoimpression" for around \$150

dollars. It connects to my computer with USB. It allows me to put any analogue type video or sound into my computer as digital. (TV, stereo, VCR, DVD, whatever)

I burned my final product onto CD's so I didn't have to fill up my hard drive with files that I do not use everyday. If you are not using video clips and if your images are all stored as J-peg files, you will not need a lot of memory. There are share ware products available from the web that will convert practically any image type such as a TIFF file which takes hundreds of kilobytes to a J-peg file which takes only tens of kilobytes.

An extra luxury is a radio controlled gyro-mouse. This allows me to wonder anywhere around the room and advance the slides without having to point at the computer like the usual infra-red controls. The gyro-scope mouse costs around \$400.00 and is not necessary. With it you can mingle more easily with the students and monitor their note taking while you lecture.

Since I already had a set of notes prepared for the students, based on the present curriculum, I simply began making presentations which included the notes as well as pictures. There are probably more pictures than sentences in my programs. Very few slides are strictly sentences in composition. Usually there is an illustration as well as a phrase or sentence on a slide. Getting involved with video clips is quite complex so I will not discuss it. It is neat however to be able to just advance to the next slide and show a short video clip that illustrates exactly what you want instead of showing an entire video containing a lot of unnecessary information.

When I work on preparing the programs, I gather together picture resources such as old biology textbooks and resource books on the topic. I build the PowerPoints by units. Each unit uses a different background and font color for variety sake. It is important to make sure there is good contrast in the colors for easy reading and that you do not use a font size less than 40 pt. and generally bold in format. I started out using a 21 inch TV and for a class of about 25 students, it did the trick. The odd student with poor eye sight had to sit near the front. Now I have a 32 inch screen and there is no trouble for anyone.

I simply start with making a title slide, and then slide by slide I take each point of the notes and try to illustrate it with a picture on the same slide as the statement. I try not to have too many slides without illustrations. Generally, lots of slides are just pictures. The students are required to copy the notes and the odd diagram from the screen. Diagrams that are too detailed, I give to the students as separate hand out sheets. It seems that for the most part, I can lecture while the students copy notes.

I insert pictures scanned from the textbooks, etc. or I do a search for illustrations using the AltaVista Image search engine. Just like any regular search engine, you type in the key word or words but instead it shows you a small thumb nail picture of every picture on the internet with that key word in the accompanying article. You can click on the picture that you think is appropriate and it takes you to the site for the original picture. It does an excellent job of screening out any pornographic pictures. Drag or download the picture to a file and then insert it into the PowerPoint from the file you placed it in. Enlarge, crop, rotate, brighten or darken the picture, etc. Pay attention to copyrighted pictures on the occasional site. I will not give out or sell any of my programs. I use them in my own classroom and that is as far as it goes.

After I have finished all the units, I store them on a CD. Then I use the print feature of PowerPoint and print out the slides, six to a page. I place the printed pages of slides in a binder according to units. I use the binder as I lecture so I can anticipate future slides before they appear on the screen. If a student

misses class, I let them copy their notes from my binder. I actually keep a second binder for this purpose.

At the end of the year, I use the PowerPoints as review. I can go quite rapidly through them without waiting for students to copy notes or without detailed lectures. This is an interesting way to review. If I get behind in my yearly plan, I will photocopy a unit of notes (six slides per page) and hand the unit out to the students. Then I can lecture faster without waiting for students to write the notes. This gives more time for lab work, projects.

My students have recognized that it took extra effort to create more interesting classes for them. They have repeatedly expressed their appreciation for this.