

WebQuests for All Grades – Tapping into Internet Resources

by Don Metz

Anyone involved in science education in the last ten years has witnessed an astounding change in computer resources available in our schools and classrooms. While inequities still exist, the vast majority of our schools are now “wired” and their students ready to roam the Internet. Yet, one lingering question remains. How do we effectively use Internet resources in teaching science? Many suggestions for instruction (including curriculum documents) state simply to “use the internet for research”. Whether the student is randomly “surfing” or, using the capabilities of a sophisticated search engine (like google.com), the amount of information is overwhelming and a great deal of time can be spent “off task”. This article attempts to outline a strategy, using WebQuests, which integrates the capabilities of the Internet with teacher facilitated and directed activities.

What are WebQuests?

WebQuests were developed by Bernie Dodge, a professor of educational technology at San Diego State University (Classroom Connect, 96/97). A WebQuest is an inquiry-oriented activity in which some or all of the information that students access comes from the Internet. A WebQuest is deliberately designed to make the best use of a learner's time. WebQuests are web pages created by the teacher (or anyone else, perhaps a student) and they generally consist of the following parts:

1. An **INTRODUCTION** that sets the stage and provides some background information.
2. A **TASK** and **PROCESS** that describes the WebQuests outcomes, sets the stage for the quest, and outlines the steps for the learner to follow. Guiding questions, and activities such as constructing concept maps and timelines or the completion of worksheets provide for the interactive involvement of the learner.
3. The **RESOURCES** is a set of hyperlinks to information on the Internet that are embedded in the WebQuest document. Since these links are included, the learner is not left to surf the web aimlessly. Links might include web pages, searchable databases, experts available via e-mail, real-time conferencing, books, magazine articles, and other documents physically available in the learner's setting.
4. A **CONCLUSION** brings closure to the quest, and can be used to promote extensions and diverse connections for the interested learner.

The WebQuest is designed and written by the teacher to address a specific set of instructional outcomes. The teacher does the research on the Internet and compiles a set of useful hyperlinks for the resources the student will access. For those of you with little time to spare, try getting a student teacher to help. They are young (and hence usually more computer literate), enthusiastic, and often looking for something to contribute.

After designing the quest and compiling the online resources, the teacher creates a web page on the Internet that students can access to begin the quest. Some teachers might be concerned with their ability to create a webpage. The good news is that WebQuest pages are usually very basic and are used primarily to link to other useful and more complex web resources. You can easily learn to make your own webpage using Netscape's Composer or Microsoft's Frontpage.

The best way to get an idea of a WebQuest is to find an existing one on the Internet. This is not difficult to do as most WebQuests are posted there anyway. You might even find one that you can use right away. A variety of examples can be found by typing the following URLs into your web browser.

1. <http://www.berksiu.k12.pa.us/webquest/default.htm>
2. <http://www.macomb.k12.mi.us/wq/webqindx.htm>

As an alternative, try a web search by entering webquest in your favourite search engine. There are literally hundreds of easily accessible WebQuests for all grades and subject areas. Here are the URLs for two WebQuests that I think students will find quite interesting.

1. <http://www.monterey.k12.ca.us/~snlornzo/quests/antarctica.html> - explores the Antarctica as a mission to see who can get there first. It includes research on explorers and the geography of Antarctica.
2. <http://www.berksiu.k12.pa.us/webquest/Dries/> - Polar Bear, Polar Bear, What Do You Hear? This WebQuest, by Mrs. Dries, is an excellent example of how you might use the strategy for young children in primary grades. Children first read the book, Polar Bear, Polar Bear, What Do You Hear by Bill Martin Jr. and Eric Carle. In their exploration on the Internet, children are directed to pictures and sounds of animals. In concluding activities the children try to associate an animal's sound with the correct animal and they even get to colour an animal. I found colouring the animal to be quite entertaining as it was the first time I ever coloured anything without going outside of the lines!

We should note that, like all instructional strategies, not all WebQuests are created equal. A simple rule to follow is: Don't use the Internet if you don't need it! One WebQuest I found directed students to a liquid layers activity at: <http://www.sci.mus.mn.us/sln/tf/l/liquidlayers/liquidlayers.html>. The activity, used to investigate density, is very good but you do not need the Internet or a computer to introduce or do this activity.

For more information and suggestions about developing your own WebQuest try the following URLs:

- http://edweb.sdsu.edu/EdWeb_Folder/courses/EDTEC596/About_WebQuests.html
<http://www.macomb.k12.mi.us/wq/WQTips.htm>

<http://minot.com/~nansen/quests.html>

If you have a good idea for a WebQuest in science but think you might need some help drop me a line at the Education Program at the University of Winnipeg (d.metz@uwinnipeg.ca). Finally, share your WebQuest with others.